

# Good Health and Well-Being



# GOOD HEALTH AND WELL-BEING

Student Care Guidebook

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Maricopa Community Colleges



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# CONTENTS

Introduction	1
Project Overview	4

## Part I. Nutrition Chapters

1. Nourishing Your Body with Foods - Protein, Calcium, and Fruits & Vegetables <i>Supporting Your Body's Growth &amp; Repair</i> Alexandra Bejarano and Sisqo Yates	11
2. Feeding Your Brain <i>Brain Food</i> Sahara Quinones and Samantha Mason	21
3. Nutrients to Know - Proteins <i>Proteins</i> Leon Martinez Gist, San Juana Cruz, and Ana Plna Vega	36

4. Nutrients to Know - Vitamins	53
<i>Vitamins</i>	
Shirley Tran, Alaura Vis, and Devin Godinez	
5. When Eating Hurts	65
Heather Maher, Lourdes Vasquez, and Koffi Kouadio	
6. Sports Nutrition	93
<i>Eating for On &amp; Off Seasons</i>	
Brian Gowan, Hailee Dihel, and Manuel Garcia	
7. Food Safety	127
Ashley Luzarraga, Kaztenny Rios Amaya, and Cynthia Rodriguez Urquidez	
8. Get more for your buck!	151
<i>Cook at home</i>	
Woodrow Hoover, Macy Ramirez, and Francisco Torres	
9. Diabetes	161
Angelica Larraga, Jocelin Flores, and Crystal Guzman	
10. High Blood Pressure	180
Charmaine Keena, Dennis Douglas, and Martin Borboa	

11. High Cholesterol	201
<i>Putting the squeeze on blood flow</i>	
Harmony Latham, Heriberto Ramos Castro, and Claudia Palacios	
12. Disordered Eating	210
Ashlynn Weaver, Kasey Safa, and Mandy Carter	
13. Obesity	225
Madison Cook and Tyler Steven Thompson	
14. Calcium	253
15. Nourishing your body with Fruits & Vegetables	257
Drink Up: Nutrition Sample Chapter	262
<i>Good Hydration</i>	

## Part II. Psychology Chapters

16. Coping with Stress	269
Jasmine Alyasiri, Sandy Borbolla Reyes, Franco Toscano, and Angelica Yescas	

17. Coping with Mental Illness	280
Andjela Calic, Garet Haugebak, Spencer Ponce, and Sergio Lopez	
18. Living with Learning Disabilities	295
Christine Colville, Kylee Mahedy, Ryan Mitchell, and Anthony Gutierrez	
19. Friendships	303
Edgar Cardona, Tyler Carreon, Eli Garrison, and Mateo Lopez	
20. Coping with Loss	314
Maddie Morris, Rhianna Hernandez, Katya Romero, and Faith Danford	
21. Sexual Health	321
Ally Arroyo, Daniela Vasquez, Andi Luca, and Kailyn Sanato	
22. Finding a Career Path	332
Jenna Perlow, Sarkis Hermez, Natalia Acevedo, and Donovan Oneal	
23. Distracted Driving	339
Summer Johnson, Cody Berlin, and Joshua Altmann	
24. Substance Abuse	346
Juliana Black, Ashley Regan, and Jianing Zhang	

25. Healthy Sleep Habits	356
Micah Altes, Jel De Jesus, Brandon Tanji, and Matthew Lomsdalen	
26. Work Life Balance	364
Zac Wilson, Kaitlyn Martinez, Alanna Goldman, and Kyle Ekbom	
27. Breaking up	378
<i>How to deal with Breaking Up</i> Reyna Gil, Jocelyn Kozak, Anthony Sportiello, and Molly Adams	
28. Healthy Study Habits: Psychology Sample Chapter	385
Brianna De La Riva	
Attributions for Psychology Chapters	393



# INTRODUCTION

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This book was developed as a part of the 2020 United Nations Sustainable Development Goals Open Pedagogy Fellowship.

Open educational resources (OER) increase equitable access to education and empower students in the learning process. Open pedagogy—an approach to teaching and learning that draws on OER—places the student at the center of that learning process in a more engaging, authentic, and collaborative learning environment in order to achieve social justice in the community. Montgomery College in Montgomery County, Maryland (USA), Kwantlen Polytechnic University (KPU) in British Columbia (Canada), and Maricopa Community Colleges (Arizona) are committed to supporting social justice through this international partnership in which faculty can work across institutions to maximize global impact.

The conceptual framework on which this fellowship is based is the United Nations Sustainable Development Goals (UN SDGs), which is a set of 17 goals that address a wide range of social issues, such as poverty, inequality, climate change, and peace and justice. The SDGs are designed to achieve and maintain social justice and a sustainable future, with a target of the year 2030 set for the attainment of each goal. This

particular book is dedicated to Goal 3: Good Health and Well Being.

This fellowship is designed to assist faculty with creating renewable assignments (all of which will carry a Creative Commons license) to help students become agents of change in their own communities. Each fellowship team will begin to design three renewable assignments in Summer 2020. Faculty will be expected to present on their proposed assignments prior to their deployment. A student showcase will take place during Spring 2021 in which a select number of students will present on how they improved their communities and achieved global justice through the UN SDG framework.

**Professor Stephanie Green, M.Ed., RDN**, is a registered dietitian nutritionist and chef. She has taught nutrition and culinary arts at Phoenix College since 2016. She serves on the Food Pantry, Wellness, and OER committees at Phoenix College. Stephanie is the author of *The Idiot's Guide to Optimum Nutrition* and co-authored *The Complete Idiot's Guide to the Mediterranean Diet*. She also served as past president of the Arizona Academy of Nutrition and Dietetics. Stephanie enjoys early morning desert walks with her dalmatian and sharing good food with friends and family.

**Professor Julie Lazzara, M.C.** is a professor of psychology at Paradise Valley Community College, where she has taught since 2009. She teaches primarily Introduction to Psychology and Lifespan Development in face to face, honors, and online formats. She participates in professional development



whenever she has the opportunity, including attending and presenting at numerous teaching and psychology conferences. She is involved in the Society of Teaching of Psychology including serving on ACT steering committee in 2018 and serving on the STP's Early Career Psychologists Committee for three years. She has also served as an AP Psychology Reader for four years. She has co-authored, reviewed and edited several articles, texts and ancillary materials. Her research interests include the scholarship of teaching and learning, open educational resources and emerging adulthood.

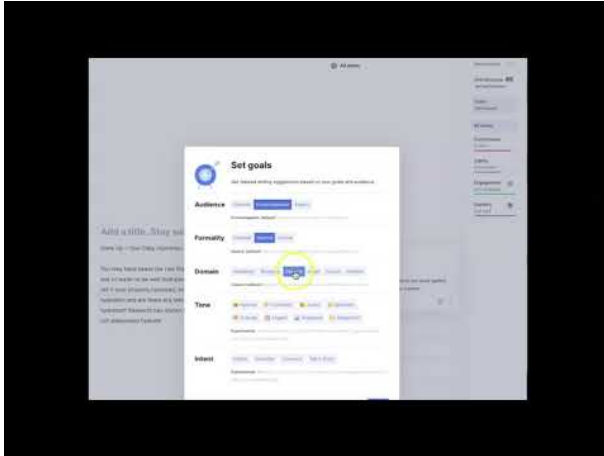
# PROJECT OVERVIEW

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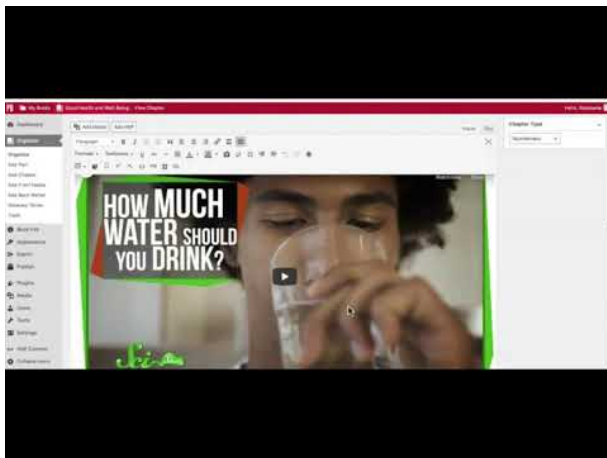
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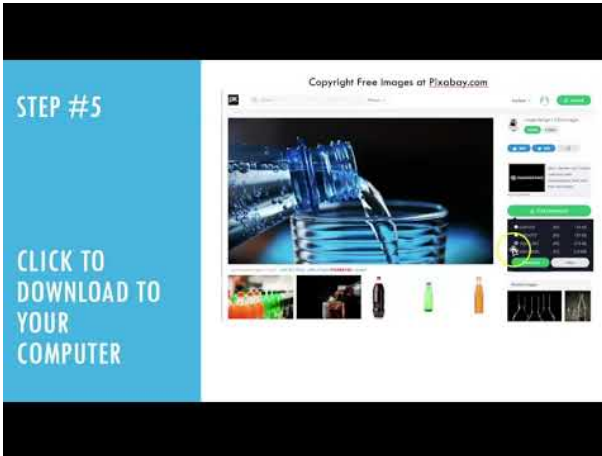
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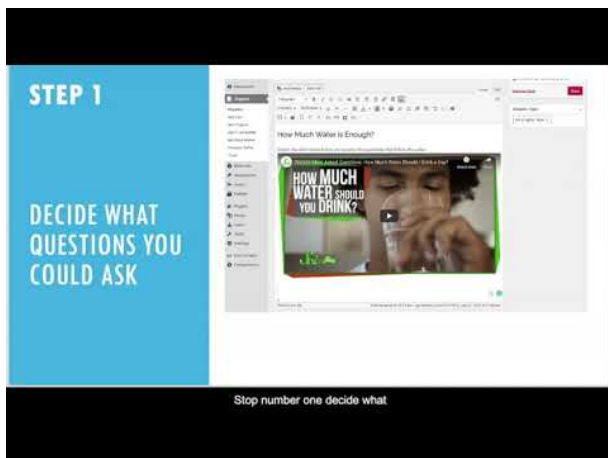
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PART I

# NUTRITION CHAPTERS





1.

# NOURISHING YOUR BODY WITH FOODS - PROTEIN, CALCIUM, AND FRUITS & VEGETABLES

Supporting Your Body's Growth &  
Repair

Alexandra Bejarano and Sisqo Yates

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## Protein

Our body needs multiple food groups to make sure our bodies are nourished entirely. One of the food groups that we need to make sure our bodies are wholly raised protein. We need to consume about 0.8 grams (10%-35%) of protein per kilogram of our body weight recommended by the RDA. We can get our protein from red meats, chicken, pork, nuts, seeds, and vegetables. The kind of red meat that we need to eat is beef, lamb, and pork. The type of white meat we need to consume

is chicken, but it has to be skinless chicken. We can get our protein from nuts. We can eat nuts to get our required amount of protein in walnuts, pistachios, cashews, etc. We also can get protein from seeds and vegetables. We can consume the roots to get our protein as sunflower, flax, chia, and many more. We only need about a handful of nuts and seeds to consume our protein.

The reason why we need to have protein in our diet is to help our body produce muscles and to be able to keep muscle mass. If we don't eat some protein in our diet, we won't build muscle tone, and we wouldn't have any strength in our arms and legs without any muscle mass. If no one in the world didn't eat any protein, we would all be walking around like stick people. Some people in the world have to consume high amounts of protein to get a shard of muscle tone in their bodies. When people have to deal with not having much muscle tone even though they have a high protein diet, it has to do with the way their body metabolizes the protein they have consumed. Everybody metabolizes everything differently. You can have people who have eaten simultaneously, but a couple of hours later, one of the people can say they are hungry again. But the other person is still full. It all has to do with how fast our body metabolizes the food we consume during the day.

Protein also helps you with your energy levels. Protein helps carry oxygen throughout your body through your blood cells. Other benefits of eating protein in your diet are it helps fight off infections and illnesses. Many different nourished values

help your body fight off a sickness or disease, but protein is one more benefit that helps your body fight off any toxins that might want to take over our bodies.

One of the problems that we can get from protein is if we overeat protein at one time, our body can store it fat instead of being muscles. Protein can also cause digestive problems and high cholesterol. If we have too high cholesterol, we could have heart disease, hypertension, etc. If the protein started to be stored in our body as fat, it wouldn't look like we are trying to build muscle tone. It would look like we just have gained weight. We need to make sure that we consume enough protein to help us with muscle tone, fight off infection, and disease but remember not to overeat protein in our diet.



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## Calcium



Calcium plays a vital role in the human body, from healthy teeth and bones to blood circulation and neuro communication. People need calcium to prevent possible diseases that can occur from a low intake of calcium. The kinds of illnesses that may arise are osteoporosis, tooth decay, heart problems, and seizures. Osteoporosis is a disease that causes the bones to become fragile and more porous, which can make them easier to break. To prevent these types of conditions, someone needs a healthy diet containing a well-balanced intake of calcium from the following: dark leafy greens, salmon, tuna, cheese, yogurt, & eggs. Dark leafy greens such as kale, arugula, and collard greens help with bone integrity. Salmon and tuna provide vitamin D to the body, which is needed to absorb calcium within the body. This is why vitamin D is added to milk and other dairy products. Mozzarella is a cheese with the

highest calcium content within cheeses, and because cheese is made from milk, it is a good source of calcium. Yogurt has more calcium than milk because of how it is prepared. A person can get 42% of their daily intake of calcium needs from one eight-ounce serving. Eggs can be rich in Vitamin D, which is needed to provide adequate bone health. Also, the egg whites do not contain Vitamin D, just the yolk of the egg.

Calcium is more critical for women than for men, especially for pregnant women and over 50. Not only does calcium help strengthen a girl's bones and teeth, but when she is carrying a child, it is said that the calcium consumed helps strengthen the baby's growing bones and teeth, boosts muscle, and even helps with their heart and nerves. Calcium is a crucial component for the help and process of children growing to their true potential. Babies and young kids need calcium and vitamin D to prevent diseases like rickets. Women are at higher risk of developing osteoporosis than men; this tends to happen right after menopause, reducing estrogen levels. It's essential to get the right amount of calcium because too much can cause gas, constipation, bloating, and may even cause kidney stones. Lacking too much calcium can result in muscle cramps and aches. Too much calcium can interfere with the heart and brain function, threatening the body.

Certain people, such as vegans and lactose intolerant people, sometimes have to take supplements to maintain their calcium levels since their diet is low on calcium intake. You should not consume calcium supplements unless prescribed or

recommended by a doctor. Vegans need to consume dark leafy greens, oats, rice, and unsweetened soy to reach their daily intake. Lactose intolerant people need to drink fortified orange juice, soy, fish, vegetables like broccoli and kale. Supplements of calcium are not the best option in reaching the amount of daily calcium intake. These supplements can cause unwanted side effects, such as heart disease, strokes, and prostate cancer.

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## Fruits & Vegeta bles

Fruits and Vegetables play an essential role when it comes to nourishing our bodies. They're packed with many vitamins and minerals that help support our bodies by providing critical

nutrients. Maintaining a diet rich in fruits and vegetables can help reduce the risk of heart disease and strokes, lowers blood pressure, prevents cancer, lowers the risk of digestive and eye problems, and even promotes healthy weight loss. Fruits and Vegetables also contribute to fiber, healthy fats, and phytochemicals, which are also essential for a well-nourished body. These nutrients all work together and affect your overall health, how your body communicates with your brain, muscle growth and function, wound healing, skin health, mood, energy, and appetite.

Fruits and Vegetables are packed with fiber, folate, potassium, vitamin C, and vitamin A. Nutrients that, when combined, perhaps provide hundreds of benefits. Getting fiber from vegetables may lower your heart disease risk, help reduce blood cholesterol levels, and assist with weight loss. Fiber is essential for your digestive system; it's crucial for proper bowel function and relieving constipation. As for weight loss, the fiber in fruits and vegetables will keep you full longer and have very few calories. Folate or also known as folic acid aids the body in producing and maintaining new cells. Women who are pregnant or considering pregnancy are recommended to take folic acid to prevent neural tube defects, spina bifida, and anencephaly during fetal development. Potassium may help reduce blood pressure, prevent osteoporosis and kidney stones, and protect against a stroke risk. Vitamin C helps your body with wound healing, eye disease, and even wrinkles. Vitamin A keeps your skin and eyes healthy.

So how many fruits and vegetables should we consume daily? How much we consume depends on our age, gender, and physical activity. The average recommendation for adults is 1-3 cups of fruits and vegetables daily. They can be consumed raw, cooked, or juice and can be fresh, frozen, or canned.

Daily Fruit Recommendation		
Children	2-3 yrs.	1 cup
	4-8 yrs.	1 to 1½ cups
Girls	9-13 yrs.	1½ cups
	14-18 yrs.	1½ cups
Boys	9-13 yrs.	1½ cups
	14-18 yrs.	2 cups
Women	19-30 yrs.	2 cups
	31-50 yrs.	1½ cups
	51+ yrs.	1½ cups
Men	19-30 yrs.	2 cups
	31-50 yrs.	2 cups
	51+ yrs.	2 cups

Daily Vegetable Recommendation		
Children	2-3 yrs.	1 cup
	4-8 yrs.	1½ cups
Girls	9-13 yrs.	2 cups
	14-18 yrs.	2½ cups
Boys	9-13 yrs.	2½ cups
	14-18 yrs.	3 cups
Women	19-30 yrs.	2½ cups
	31-50 yrs.	2½ cups
	51+ yrs.	2 cups
Men	19-30 yrs.	3 cups
	31-50 yrs.	3 cups
	51+ yrs.	2½ cups

There are at least nine different families of fruits and vegetables, and based on their nutrient content, they’re separated into various subgroups. Vegetables are divided into five subgroups; dark-green vegetables, red and orange



vegetables, beans and peas, starchy vegetables, and other vegetables. Dark-green vegetables like broccoli, collard greens, kale, spinach, and romaine lettuce are great vitamins and low calories. Dark green vegetables are associated with vitamin A and C, potassium, magnesium, folate, and fiber. Red and orange vegetables like carrots, pumpkin, red peppers, tomatoes, and sweet potatoes are also known to be excellent in fiber, potassium, and vitamin A. Beans and peas like chickpeas, lentils, black beans, soybeans, and black beans are a great source of fiber, folate, and minerals. Starchy vegetables are a great source of carbohydrates and fiber; however, they also have higher calories, so limited intake is recommended. Starchy vegetables include corn, green beans, potatoes, and green lima beans. Other vegetables include cauliflower, avocados, cucumbers, zucchini, and mushrooms, and due to the variety, their nutritional benefits vary.

### **Tips for eating more fruits and vegetables:**

- Meal prep your veggies – you will be less tempted to eat unhealthy fast food. The convenience will make it easier to reach for some veggies versus junk food.
- Keep visible – keeping fruits and vegetables visible will encourage everyone to eat more fruits and vegetables.
- Keep it exciting and explore! – Variety and color are essential. Try new recipes and try fresh vegetables.
- Frozen is better than no fruits and vegetables – frozen vegetables are easy to make when you're in a hurry and

don't go bad so fast.

- Make it fun! – Adding seasonings and sauces to vegetables within reason makes it easier and tastier to eat. Dipping fruit in dark chocolate or using Chile seasoning is another popular way to make fruit fun and yummy!

St. Mary's Food Bank Alliance | Feeding America

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2.

# FEEDING YOUR BRAIN

## Brain Food

Sahara Quinones and Samantha Mason

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## Introduction

Imagine your body is a car or truck you own. You wash it when it's dirty, get "tune-ups" when your hair is too long or visit an optometrist your eyesight has changed, and fill it with fuel when you're feeling "on empty," so to speak. For this chapter, let's focus on fuel. You have a choice of what kind of fuel you can fill up with. Whether it is cheap unleaded from a no-name gas station that gets you from point A to point B or premium fuel with additives that help keep the engine running smoothly long term. The same can be said for the type of nutrients you put into your body. In our case, the engine in our vehicle is our brain. Our brain needs fuel that promotes healthy function as well as prevention of demyelination (Short 2015). Luckily for us, we know what kind of nutrients we can eat to keep it running in its most optimal state.

### ***Why is nutrition important to the health of our brain?***

Our brains are big eaters. Despite being only 2% of our body weight, the brain burns 20% of the energy we incinerate each day (Raichle, 2002)! The brain's primary source of fuel is glucose. When most people think of glucose, they think of sugar. While "sugar" is the most commonly known form of glucose, it can also be found in many foods that are not pure sugar or derivatives of sugar. Glucose is the byproduct of the metabolization of carbohydrates. There are many great wholesome foods that we can incorporate into our diets that fall into the carbohydrate category. Another important source of energy we should look at is fat. Although fat is metabolized at a slower rate than carbohydrates, it provides the energy needed without inducing a blood glucose spike (Wakhloo, 1984). The final fuel we will discuss is protein. Protein can be found in both animal and plant-based forms. Carbohydrates, fat, and protein are what the average person can identify as nutrients they know are important to overall existence. This chapter aims to look at each category and incorporate these vital nutrients into our diets for optimal brain health.



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## ***Where can we find the correct nutrients to help our brain function?***

We often think about what we eat and how this fuels our body for daily activities. Do we ever stop and think about how the

food we eat affects our brain function? Nutrition is essential for healthy brain function. Our brain is the second biggest internal organ and uses 20% of the energy we consume. With the brain being such an essential organ due to its function, we must know what foods offer these nutrients. The brain carries out fundamental functions. Not only does it allow us to carry out involuntary actions like breathing and blinking, but it also allows us to think and reason. This is also known as cognitive function.

Cognitive function is affected by nutrition. Cognitive function refers to someone's mental ability to think, learn, reason, solve problems, make decisions, and pay attention. Since nutrition is a modifiable factor, it is important to consider how we can benefit our brain cognition and decrease our risk of developing neurological disorders in the future. Being a Phoenix College student means you've taken the first step on a path to enlightenment, no matter what you're pursuing. Why not set yourself up for success by feeding your body and mind with foods that not only taste good but aid in the achievement of educational success?

**What are some nutrients we should incorporate into our diets to help promote healthy function and form and where do we find**

## them?

- Omega-3 fatty acids – fish (salmon), vegetable oils (rapeseed oil), and walnuts
- Vitamin B6 – grains (whole grain, brown rice, quinoa, wheat germ), nuts, meat, liver, and meat products.
- Vitamin B12 – animal products (dairy products, eggs, meat, fish, and liver), fortified foods.
- Folate- dark-green leafy vegetables, legumes, oranges, grapefruit, peanuts, almonds, and liver.
- Unsaturated Fat – coconut oil, olive oil, vegetable oil, full-fat dairy products, cold-water fish, seeds, avocados
- Vitamin D – fish, liver, fatty fish, full-fat dairy products (or fortified low-fat ones), egg yolk, meat.

These are some examples of dietary patterns that have been researched and proven to impact the brain significantly.

- Mediterranean diet – This diet has been proven to reduce the risk of dementia and mild cognitive impairment.
- DASH diet has shown a decreased risk of Alzheimer's disease or a slower cognitive performance decline.
- MIND Diet – The Mediterranean and DASH diets combined offer healthy brain function support and hypertension prevention to those most at risk.

***What neurological disorders are associated with malnutrition?***

Inadequate amounts of food and lack of diversity can cause severe health problems in general. Poor nutrition can have a direct effect on how our brain functions. This can range from uncomfortable symptoms to more severe diseases. Although malnutrition-related neurological disorders are not common in the United States, it's important to recognize what food shortages can do in terms of developmental damage.

**According to the World Health Organization, most of these malnutrition-related neurological disorders are preventable:**

- Beri-Beri – affects the nervous system and causes degeneration of nerves. Can lead to atrophy and loss of reflexes.
- Polyneuropathy – this results when various peripheral nerves are damaged. These nerves are located outside the brain, and spinal cord, and their function is to relay information between the brain and spinal cord.
- Wernicke's Encephalopathy – is a life-threatening illness that affects both the peripheral and central nervous system. It can cause decreased reflexes, fast pulse, low blood pressure, low body temperature, muscle weakness, atrophy, and coordination problems.
- Pellagra- causes diarrhea, dementia, and dermatitis. If it is not treated, it can result in death.



- Progressive Myelopathy – a nervous system disorder that affects the spinal cord. Specific to Vitamin B12 deficiency causes sensory disturbances on the legs.
- Neural tube defects (myelomeningocele) – when bones of the spine do not form completely.

Nutrient	The neurological disorder caused by a deficiency
<b>Vitamins</b>	
Vitamin B1(Thiamine)	Beri-Beri, polyneuropathy, Wernicke’s Encephalopathy
VitaminB3(Niacin)	Pellagra, dementia, and depression
Vitamin B6(Pyroxidine)	Polyneuropathy
VitaminB12(Cobalamine)	Progressive Myelopathy with disturbances in the legs
Folate	Neural tube defects (myelomeningocele) of the fetus, cognitive dysfunction in children and elderly
<b>Minerals</b>	
Iodine	Iodine deficiency disorders
Iron	Delayed development in children
Zinc	Delayed motor development in children, depression

Selenium	Adverse mood states
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## Prevention

There are various ways to prevent these diseases. One of them is to include a diversity of micronutrients in your diet. Including various fruits, vegetables, and protein sources ensures that we can obtain the nutrients we need. Not everyone can have diversity in their food. This can be due to food insecurity in some cases. Supplementation can be helpful, and this is especially important in countries with low incomes. This is a good option for people who are limited in their food choices. Eating foods that are fortified with these vitamins and minerals is also essential.

***What effects do the nutrients we eat have on our brain function?***

- Omega-3 – The nerve cell membranes are rich in fatty acids. They have a direct effect on cognitive function. Consuming omega-3 can be extremely beneficial for people with mild cognitive impairment.
- Folate, Vitamin B12, and Vitamin B6 – Homocysteine is a common amino acid in our bodies. These three vitamins are in charge of lowering homocysteine levels. Too much homocysteine in the blood can lead to faster

- cognitive decline and dementia in older people.
- Vitamin C – Neurons in the brain absorb large quantities of vitamin C, and they also protect nerve cells.
  - Vitamin D – Aids in the growth and development of neurons. Low levels of vitamin D result in an increased risk of developing dementia and increase cognitive decline.
  - Vitamin E – The oxidative properties of vitamin E helps protect lipids, which is what nerve cell membranes are made of. Consumption of Vitamin E also helps prevent cognitive decline.
  - Flavonoids – improve communication between nerve cells and aid in blood vessel function. Flavonoids can also help improve cognitive function.



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## **Nutrition, mental health, and academic performance.**

Recent research suggests that there is a direct correlation between what we eat and how we feel. Nutrition has an effect on brain health, cognitive function, and mental health. There is evidence that suggests that the inflammation effects of food can be linked to mood disorders. Dietary inflammation results from consuming foods high in calories, processed foods, refined carbohydrates, and trans fats. The inflammatory effects of consuming these foods can result in cognitive decline and damage to the blood-brain barrier. Firth (2020) states that “consumption of highly refined carbohydrates can increase the risk of depression and anxiety.” (p.1)

Feeling stressed before a big exam? It’s easy for students to run to comfort foods that help them emotionally during mental unease times. Unfortunately, these comfort foods are usually that of the unhealthy variety, such as fried foods, sweets made with processed sugars, doughy pizza, and even alcohol. As emphasized throughout this chapter, it’s wildly important to skip the junk food and reach for snacks that work in conjunction with our bodies to function at their most optimal level. Some quick examples can be found here, along with easy, inexpensive recipes you can whip up before a big exam.

These are just a few examples of how nutrition affects not only our brain but our mental health as well. It is important

to know how our dietary patterns affect our mental health because we all deserve to feel good.

In-depth look at how food can affect our brains



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## Conclusion

The brain is an essential organ in our bodies, and we must take care of it. Being aware of what we eat and what kind of nutrients are in our food can improve our cognitive function and directly affect mental health. The brain is composed of many parts, and all of them obtain specific nutrients from the food we eat. To prevent any deficiencies that can lead to uncomfortable symptoms or a specific disease, appropriate amounts of vitamins and minerals should be consumed. The area of nutritional psychology and neurology both work together to ensure that we can improve our brain function and prevent certain diseases.

## Community Resources

The following are resources offered in the Phoenix area that offer services regarding nutrition for students, people experiencing balanced food scarcity or nutrition-based diseases.

- Phoenix College Food Pantry – Students struggling to secure meals can make an appointment online for the opportunity to select up to ten balanced foods for pick up during times of personal distress.[http://Phoenix College Food Pantry](http://PhoenixCollegeFoodPantry)
- Center for Autism Research and Education – This center offers resources to people with neurological disorders such as Autism, Asperger's, Tourettes, Down Syndrome, and ADHD. Many individuals who are diagnosed suffer from different food sensitivities and food allergies. After implementing their ideal diet, they can experience increased cognitive function and greater mental clarity. They offer dietary and nutritional interventions.
- AZ BrainFood – This is a non-profit organization that provides kids with a backpack full of food for the

weekends. The unfortunate reality that attending school may be the only place they receive for many poverty-stricken children adequate, nutritionally balanced meals.

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3.

# NUTRIENTS TO KNOW - PROTEINS

## Proteins

Leon Martinez Gist, San Juana Cruz, and  
Ana Plna Vega

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### **Introduction – Proteins**

Protein is well known as being the main ingredient bodybuilders use in their shakes to be so strong however this nutrient has a lot more functionalities going for it than just workout competitions. Proteins are made of amino acids and are incredibly important for the well being of the body. Proteins can aid the body in numerous ways and are a critical part of many functions making them so important and interesting. This chapter will give some insight into the nutrient protein, why it is important, how to attain it, and more.

### **Amino Acids**

There are plenty of unique proteins and amino acids however humans only use 20 amino acids to create the proteins needed. This graph shows which need to be obtained through

diet and which the body can produce all on its own. 9 amino acids are considered essential amino acids because they need to be obtained in the diet while the rest can be created autonomously. However, some non-essential amino acids can become essential creating conditionally essential amino acids, these exist when the body is for some reason not producing enough of the particular amino acid.

– Lets see if the thinking caps are on:



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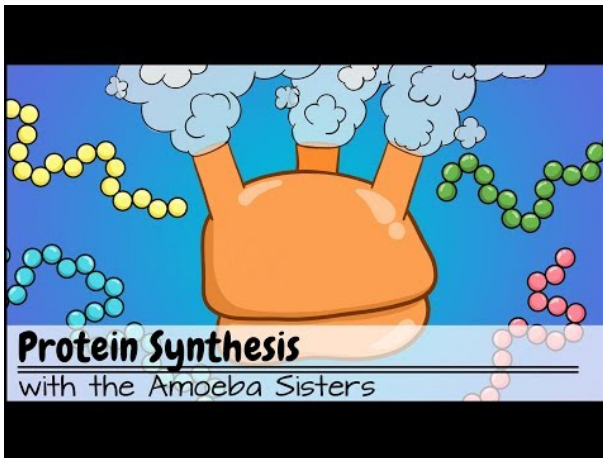
All the info about amino acids begs the question, how

exactly are proteins made? Which leads into the next learning phase.

### How to Make Proteins 101

Proteins are formed by the combining of amino acids which can form a variety of bonds called peptide bonds. This is why it is important to incorporate meals that have all amino acids or to at least consume the essential amino acids if you are not faced with a conditionally essential acid. Once these bonds are formed they begin to take a shape that is determined by the different amino acids in the peptide bonds. The process of protein synthesis can be especially convoluted – as well as the way proteins are shaped. Their structures may sound familiar to anyone who has taken a biology class and there are four levels. These four levels consist of the **primary** structure which is essentially the order in which the aforementioned amino acids are arranged. The **secondary** level is when the amino acid arrangement begins to take on a shape and either take on a form known as an alpha-helix or the form of a beta-pleated sheet – in this stage, the immature protein takes on a 3D shape. The third form is called the **tertiary structure** and regards the 3D arrangement of the protein which is quite interesting in the way this shape is welded together. To simplify – the help of hydrophobic interactions fold the alpha-helix or beta-pleated sheet and hydrogen bonding glues this structure together. The fourth level is called the **quaternary** structure (fun to pronounce) which not all proteins have – in this structure the

protein subunits come together with their own structures in order to form the quaternary structure – keep in mind shape determines function so the shape of the structure will direct the physiological workload even if different subunits are in the protein.



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The video above gives a more in-depth explanation of how this nutrient that is so very important is created in the very beginning stages during a process called protein synthesis.

### **How the body breaks down proteins.**

Proteins in food are chewed and moistened with saliva to ease swallowing for it to be easier to digest → Once inside the stomach, hydrochloric acid denatures the protein strands / Pepsin breaks down proteins into single amino acids and shorter polypeptides → These amino acids and polypeptides travel to the small intestine to further digestion and absorption

Once the polypeptides reach the small intestine, the pancreas and small intestine secrete enzymes that digest them into oligopeptides, tripeptides, dipeptides, and single amino acids. Proteases are the enzymes that digest polypeptides. Cells in the wall of the small intestine absorb single amino acids, dipeptides, and tripeptides. Peptidases which are enzymes located in the intestinal cells, break the dipeptides and tripeptides into single amino acids. Amino acids are transported to the liver where they are converted to either glucose or fat, and it is used for energy to build new proteins or transported to cells needed. Meat and Dairy are highly digestible animal proteins. Grains and some vegetables are less digestible.

### **Why do we need Proteins?**

Proteins in the body are broken down so we need to replace them with new proteins. Proteins help with cell growth. Take an embryo for example it needs protein to develop and grow. A newborn baby has about 10 trillion body cells! Red blood cells live for about 4 months and get replaced by new cells produced in the bone marrow. Proteins also act as hormones.

Here is an example, thyroid hormone regulates many aspects of metabolism, is an acid hormone, and insulin. Then it acts as the cell membrane to facilitate the transport of glucose into cells.

Protein helps maintain fluid and electrolyte balance. When your protein intake is deficient you can end up having Edema which is a serious disorder in which fluids build up in the tissue spaces of the body, causing fluid imbalances and a swollen appearance. A proper balance of sodium and potassium are examples of electrolytes. This is accomplished by protein molecules that help transport substances throughout the body and across cell membranes.

***Some consequences of low protein intake:***

- Muscle weakness
- Spams
- Kidney Failure
- Even sometimes in certain bad conditions can lead to death
- Skin, hair and nail problems
- Fatty Liver
- Decreased energy

***Other Roles of Protein:***

Protein works as antibodies, antibodies are defensive proteins of the immune system, and their production is prompted by the presence of bacteria, viruses, toxins, and

allergens. They transport and store nutrients by carrying iron in the blood and stored in the liver. The amino acids from protein can make neurotransmitters, which are chemical messengers that transmit messages from one nerve cell to another. Examples of neurotransmitters are epinephrine and norepinephrine, they both stimulate the sympathetic nervous system, and melatonin which plays a role in regulating sleep.

### **How much protein should we eat?**

Per RDA recommended energy from protein is 10% to 35% in the total intake.

Protein needs are higher for children, adolescents, and pregnant lactating women because more protein is needed during times of growth and development. *Positive Balance* occurs when nitrogen is greater than excretion. This state indicates that the body is retaining or adding protein, and occurs during periods of growth, pregnancy, recovery from illness, and protein deficiency. *Negative nitrogen* balance occurs when you have a severe illness, infections, high fever, serious burns, or injuries that cause a lot of blood loss. People in these conditions require a higher intake of protein in their meals. *Nitrogen Balance* is when nitrogen intake equals nitrogen excretion. People in these conditions their protein intake is sufficient, and are Healthy adults who are not pregnant.



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<u>Group</u>	<u>Protein intake ( grams per Kilo body weight)</u>
Sedentary adults	0.8
Nonvegetarian endurance athletes	1.2 to 1.4
Nonvegetarian strength athletes	1.2 to 1.7
Vegetarian endurance athletes	1.3 to 1.5
Vegetarian strength athletes	1.3 to 1.8

---

Eating protein is important for your body, but if you take in more than you should there are some side effects. Protein is found in many foods with saturated fat which contributes to high cholesterol levels and that can cause heart diseases or stroke. Consuming a meat-based diet, with very little plant-based foods usually leads to low fiber intake.

Fiber is a type of carbohydrate, and it plays an important role in digestion. This can cause some constipation. Also, people with Kidney disease that eat a high protein diet can be harmed because the kidneys don't work well getting rid of waste products can lead to worsening kidney function. In healthy people, it is shown that there is a risk if you eat a lot of protein, but it is important to drink a lot of water.



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## Choosing Healthful Proteins

Eating protein-rich foods encourages to have an adequate intake level of protein in the body to support its functions to work properly and efficiently. These foods include legumes, nuts, poultry, soy products, fish, seeds, dairy products, and eggs. Protein shakes, powders, and supplements are a good alternative to maintain an adequate intake of protein.

Here is a link for more information about protein, the types of protein-rich foods there are, and how to meet protein needs : <https://www.betterhealth.vic.gov.au/health/healthyliving/> protein.

**Can a vegetarian diet provide adequate protein?**

Vegetarianism is the practice of following a restricted diet that consists of plant-based foods such as vegetables, fruits, grains, and nuts. It has become more common in society as people become more responsible of themselves and their eating habits, thus giving vegetarianism a try as a lifestyle choice. Although protein intake may be limited, it is still available through certain foods in the different types of vegetarian diets.

The following are seven types of vegetarian diets:

- Flexitarian (Semi-Vegetarian) – plant-based diet with the inclusion of meats, poultry, and fish from time to time.
- Pescatarian – plant-based diet with the inclusion of seafood and sometimes dairy and eggs if chosen.
- Lacto-ovo Vegetarian – plant-based diet with the inclusion of dairy and eggs.
- Lacto Vegetarian – plant-based diet with the inclusion of dairy products.
- Ovo Vegetarian – plant-based diet with the inclusion of eggs and products that contain eggs.
- Pollo Vegetarian – plant-based diet with the inclusion of poultry foods such as chicken, turkey, and duck. Can choose to incorporate seafood, eggs, and dairy into diet.
- Vegan- strictly plant-based diet, not a single animal product. Foods include vegetables, nuts, grains, fruits, and legumes.

*Why do people choose vegetarianism?*

People choose to become vegetarian in the efforts to make a difference in the environment, health benefits, and due to their religious and ethical beliefs and food-safety concerns.

By becoming vegetarian, people can reduce the negative impacts of meat production on the environment such as pollution, global warming, and deforestation. Also, by following a vegetarian diet, people are able to reduce the risks of diseases such as high blood pressure, type 2 diabetes, heart disease, and some cancers, increasing their health and well-being overall.

Another reason would be that some religions do not allow the consumption of animals in which direct them towards the vegetarian diet, as well as how some people believe it is morally wrong to eat animals and animal products such as eggs and dairy products. The way meat is handled, and the risk of contamination associated with it is a safety and health concern to those that would want to prevent the illnesses that result from the practice, people prefer to stay away and choose to become a vegetarian.

The health benefits of following a vegetarian diet is a main reason why people choose to practice vegetarianism as it can reduce many chronic diseases. The following are health benefits of following a vegetarian diet:

- Reduced risk for obesity and type 2 diabetes due to

- reduced intake of saturated fat and total energy.
- Lower blood pressure due to higher intake of fruits and vegetables and regular exercise.
  - Reduced risk for heart disease due to higher consumption of dietary fiber and antioxidant vitamins, minerals, and phytochemicals.
  - Fewer digestive problems such as constipation and diverticular disease, due to high fiber intake.
  - Reduced risk of some cancers such as colorectal cancer and reducing carcinogens that are formed when cooking meat.
  - Reduced risk for kidney stones and gallstones by consuming higher intakes of legumes and vegetable proteins such as soy.

The potential challenges of vegetarianism are the nutrient deficiencies in protein, calcium, zinc, iron, iodine, vitamins B, B12, and D. As well as experiencing symptoms such as fatigue, weakness, anemia, bone loss, and thyroid issues. By limiting one's diet from these important nutrients, it will begin to negatively impact health and well-being. Following one of the more flexible vegetarian diet will provide sufficient levels of the nutrients although taking supplements and multivitamins may be another option as a substitute.



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## **What disorders are related to protein intake?**

Protein deficiency can lead to life-threatening diseases as a result of malnutrition. Low protein intake can increase the risk of illnesses, infections, and even death as a result of protein-energy malnutrition, not consuming enough total energy. Two associated diseases are Marasmus and Kwashiorkor.



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### *Marasmus*

Marasmus is a disease that is caused by inadequate intakes of protein, energy, and other nutrients, being protein-energy malnutrition. Those who develop the disease will slowly starve to death with an appearance of “skin and bones” due to their body tissues (such as muscles) wasting away. Marasmus is most common in young children (6 to 8 months of age) who are poor, living in unsuitable and unstable conditions, and are severely undernourished.

Marasmus affects an individual by the following:

- Wasting and weakening of muscles, including the heart muscle
- Stunted brain development and learning impairment
- Stunted physical growth and development
- Anemia (abnormally low levels of hemoglobin in the blood)
- Severely weakened immune system
- Fluid and electrolyte imbalances

Treating Marasmus primarily begins by trying to gain fluid and electrolyte balances and then providing the individual with proteins and carbohydrates once the body has stabilized. Once protein levels in the blood begin to improve, fat will be introduced so that the body can metabolize it efficiently. When

left untreated, Marasmus will cause infection, heart failure, and death from dehydration.

### *Kwashiorkor*

Kwashiorkor is a protein-energy malnutrition disease that occurs to toddlers and infants (1 to 3 years old) in developing countries that are accustomed to food other than their mother's milk due to the upcoming of another baby. These children are fed a low protein cereal diet that provide adequate energy but not enough protein. Their protein content in the blood is insufficient and inefficient in keeping fluids from leaking into the tissues and as a result, their stomachs begin to appear swollen.

Kwashiorkor affects an individual by the following:

- Some weight loss and muscle wasting, with some retention of body fat
- Fatty degeneration of the liver
- Development of sores and other skin problems; skin pigmentation changes
- Dry, brittle hair that changes color, straightens and falls out easily

It is possible to reverse the effects of Kwashiorkor with enough protein and energy given throughout time. Once treated, those may develop the disease again due to their living conditions. Although, individuals may die due



to their weakened immune systems from the disease and contract other infectious diseases.

Protein-energy malnutrition is common in all countries that affects both children and adults that live in impoverished conditions and don't have an adequate protein intake. Those at risk include children in developing countries, the elderly, the homeless, people with eating disorders and drug and alcohol addictions, and individuals with terminal diseases.

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### Community Resources

Link to a site regarding vegan protein – <https://www.eatthis.com/best-vegan-protein-sources/> – Vegans/Vegetarians may have a harder time getting protein into their diet when they cut out meat but there are plenty of sources that are vegan friendly.

Here's a link to a beginner's guide for vegetarianism: <https://www.healthline.com/nutrition/vegetarian-diet-plan>

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4.

# NUTRIENTS TO KNOW - VITAMINS

## Vitamins

Shirley Tran, Alaura Vis, and Devin Godinez

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### **What are Vitamins?**

Vitamins are an organic molecule that is an essential micronutrient which an organism needs in small quantities for the proper functioning of its metabolism. In simpler terms, vitamins are a chemical substance needed for the human body to function properly. Many people take vitamins daily to help with a specific function. We will learn later in this chapter which vitamins can be taken daily. There are 13 different vitamins, such as “A, C, D, E, K, and the B vitamins (thiamine, riboflavin, niacin, pantothenic acid, biotin, B6, B12, and folate)” (U.S Department of Health and Human Services).



Vitamins are considered to be either water or fat-soluble. Fat-soluble vitamins can dissolve in fats and oils. The vitamins considered to be fat-soluble are A, D, E and K. Water-soluble vitamins dissolve in water, vitamin C, and the complex elements of vitamin B are included in this category. All vitamins have their functions. For example, Vitamin A helps “maintain healthy teeth, bones, soft tissue, mucous membranes, and skin” (U.S. National Library of Medicine) while vitamin B12 helps with metabolism.

## Test Your Knowledge

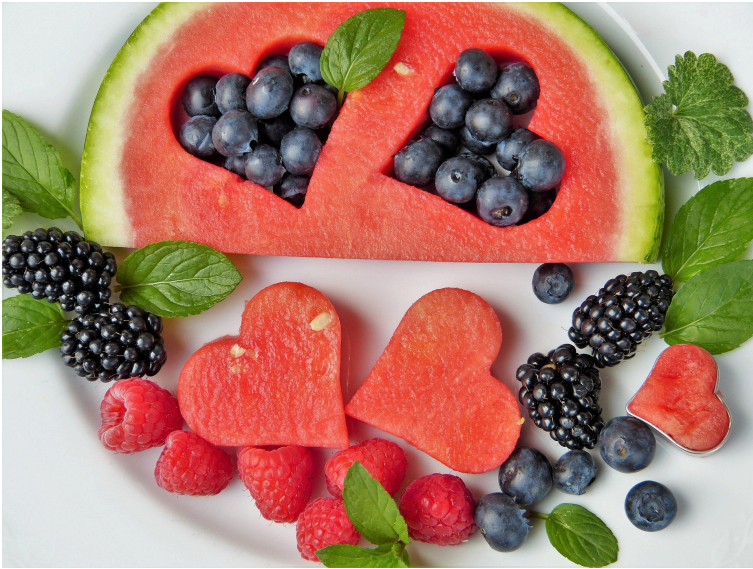


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## What are the pros and cons of vitamins?



Over half of Americans take some type of multivitamin each day. While there can be some benefits to taking vitamins, certain kinds can be risky for individuals, and getting too much of some vitamins can create dangerous symptoms. Vitamins may be needed for digesting food, condition of hair nails, eyesight, heart, nervous system, etc.

The pros of taking vitamins include staying fit, healthy, supple, and strong because vitamins are essential nutrients that the body needs to perform certain chemical reactions and to do its job properly. The most common use of vitamins includes vitamin D and folic acid. Folic acid vitamins are mainly used by women who are pregnant or who are trying to get pregnant.

Vitamin D on the other hand or is taken by men and women who use it for its classification as a fat-soluble vitamin. Vitamin D also influences cell growth and immune function which keeps inflammation and check and keeps your nervous system working correctly.

The cons of taking vitamins include symptoms of toxicity. Such as headaches, flush skin, or an upset stomach. Or they can get as bad as kidney stones, heart issues, and confusion. If you take an excessive amount of vitamins a day over many years your bones are more likely to fracture or they may also interfere with other medications.

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## Which vitamins can be taken daily and which can not?



After researching, you may take any vitamin daily. However, It is possible to have too much of a vitamin intake and can cause problems for the body. We will start with the vitamins you can take daily. Vitamin D, Magnesium, Calcium, Zinc, Folate, and Vitamin B-12 can all be taken daily (Healthline, 2020). All of these vitamins can be achieved with a specific food, such as egg yolk for Vitamin D, milk for Calcium, beans for Folate. Due to differences in taste buds, we may not obtain these vitamins from food. Therefore we can achieve through a multivitamin daily if needed. A random fun fact, you can obtain Vitamin D by sunbathing for 15 minutes (Healthline, 2020). All seven of the vitamins listed above are beneficial to our body functions. Zinc supports our immune system and

Magnesium can help with sleep problems. It is important to figure out which vitamins you lack from food intake and use vitamins for balance.

As mentioned above, it is easy to overdose on your vitamin intake (Nourish by WebMD, 2014). When you have a high intake of any vitamin it can begin to disrupt your body such as causing sleeping problems, numbness, and/or irritability. If one takes a daily multivitamin, usually they should not worry about overdosing. When these vitamins are taken separately is when one should pay more attention to their intake.

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## How do vitamins and supplements work together?



Taking vitamins and supplements together is not recommended. When taken together, they can reduce the absorption and may result in adverse interactions that can be harmful to your health. The vitamin and supplement combinations you would want to avoid are calcium and magnesium, copper and zinc, fish oil and ginkgo biloba, iron and green tea, calcium and vitamin D, niacin combinations and cholesterol, folate supplement and vitamin B 12, and vitamins K & E.

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## What would happen without vitamins?



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Vitamin deficiency anemia can develop if your diet or your eating routine is lacking in certain vitamins. It happens because the red blood cells, which carry oxygen from the lungs throughout the body, are produced by the vitamins. Even though deficiencies in most vitamins are rare in the U.S, there are still some cases that Americans have concerns about

vitamins. The symptoms people may experience when they do not get enough vitamins are related directly to each vitamin's function.



For example, vitamin A deficiency can cause anemia and dry eyes. Vitamin C deficiency causes anemia and scurvy, which leads to symptoms of weakness, gum disease, and skin problems. Vitamin D deficiency can result in bone loss, cancer, increased risk of death from cardiovascular, or muscle weakness. Vitamin B-12 deficiency can cause extreme tiredness, lack of energy, feeling faint, and headaches.

We can prevent those risks from vitamin deficiency by choosing a healthy diet or meal that includes a variety of foods. For example, we can have some foods that rich in vitamin B-12, such as eggs, fortified food (such as cereals), milk, cheese, yogurt, and meat in the morning; and some foods that rich in

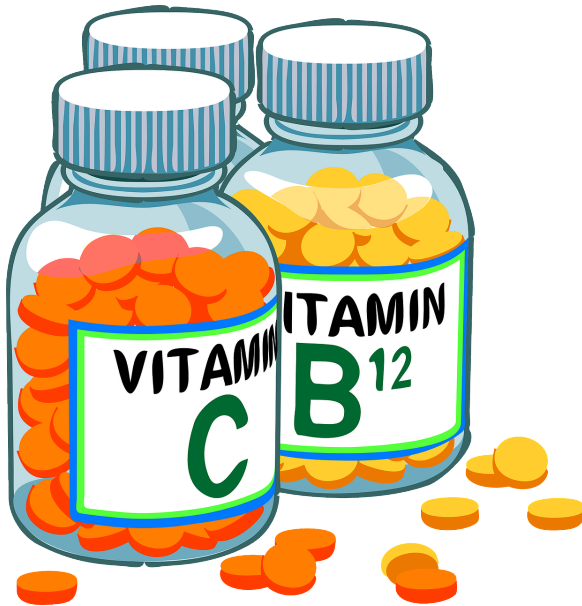
vitamin C, such as broccoli, citrus fruits, strawberries, green peppers, and tomatoes for a snack, or we can use them as an add-on for lunch. Balancing the intake of vitamins will help us always stay healthy.

## Test Your Knowledge



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Vitamin-D

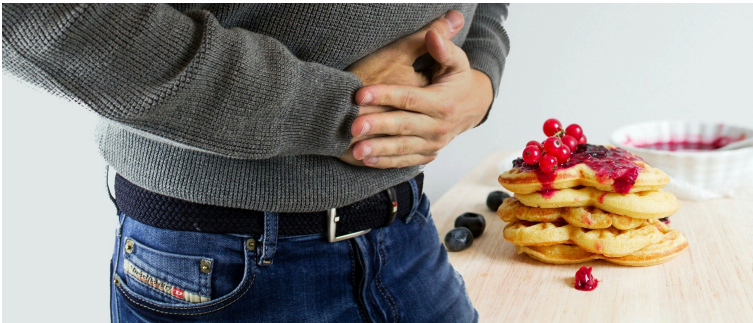
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5.

# WHEN EATING HURTS

Heather Maher, Lourdes Vasquez, and Koffi Kouadio

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## What is IBS?

IBS stands for Irritable Bowel Syndrome. It is a large intestine disorder, also known as a gastrointestinal disorder, which causes stomach pain and discomfort. It is a common disorder and the signs and symptoms include:

- Cramping
- Abdominal pain
- Bloating

- Gas
- Vomiting and diarrhea or constipation (sometimes both)

The symptoms and severity can vary from person to person. However, what is the same for all is that the symptoms and signs are for the most part present for a long time. Meaning this is a chronic condition that needs to be treated long term. Having IBS can create a poor quality of life. This can lead to mood disorders, such as depression and anxiety if not treated.

## TEST YOUR KNOWLEDGE



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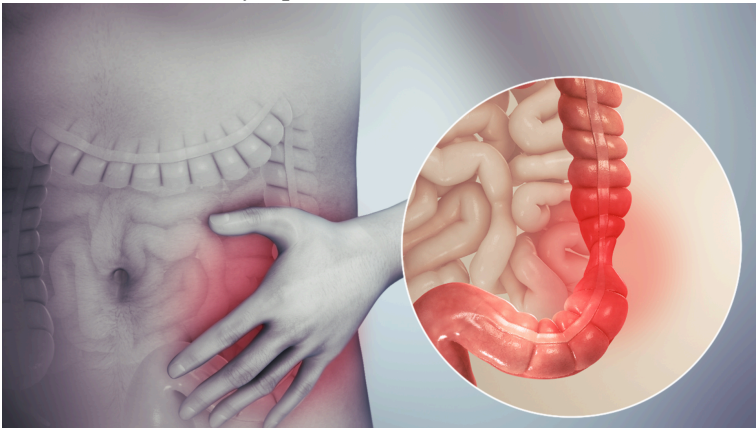
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## What Causes It?

The causes of this disorder are still not very well known.



Usually unhealthy food and stressful situations trigger it, making it worse. Nonetheless, they do not cause it. What has been noted is that females under the age of 50, people with a family history of IBS, and a history of abuse or trauma tend to be more susceptible to the disorder. Other factors that may play a role are changes in gut microbes, due to a severe infection, antibiotics, or unhealthy eating habits. This diminishes your gastrointestinal flora, the healthy bacteria, which helps keep you healthy and increases the disease-causing bacteria. It is not easy to enjoy life with constant pain, discomfort, and such symptoms.



The pain might come from uncontrolled contractions in the muscles of the colon. And discomfort can be due to abnormalities in the nerves of your digestive system. Since the brain and the gut are interconnected this explains why stress is a trigger for pain and discomfort. If not properly treated and kept under control it can lead to more severe issues.

## TEST YOUR KNOWLEDGE



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## Why is it Important that I treat it?

Chronic constipation or diarrhea can cause hemorrhoids. Hemorrhoids are blood vessels within the lower rectum that become enlarged due to excessive pressure. This can be painful and cause bleeding, which can lead to more severe complications. Diarrhea and vomiting increase liquid and nutrient loss, which can lead to dehydration and nutrient deficiencies.

Being deficient in one or more nutrients results in your immune system being at risk and susceptible to infectious bacteria. IBS can also affect your body's digestion and how you absorb nutrients from foods. This can lead to malnutrition,

which can cause more severe diseases. At this point, your immune response and your immune system become weak, not able to fight off infectious or chronic diseases, heal wounds, or protect you from developing cancer.



Do you tend to feel IBS symptoms creep up more during finals, an exam, or stressful situations?

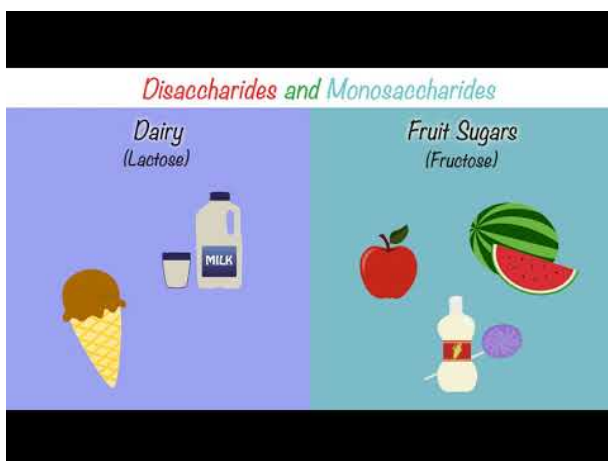
## Luckily it can be managed with:

- **Proper diet**
- **Lifestyle**
- **Keeping stress under control.**

Focus on lowering your stress levels. Chronic high levels of stress are hard on your whole body, including your gut.

- Get enough sleep.
- Eat slowly and chew your food several times.
- Eat foods rich in prebiotics and probiotics.
- These can be foods high in fiber, kombucha, miso soup, kimchi yogurt, and sauerkraut.
- Eat plenty of fruits and vegetables.
- Stay hydrated.
- You can also follow a FODMAP diet. It is a temporary diet, which helps figure out which foods are causing

your IBS.



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## TEST YOUR KNOWLEDGE



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However, if you have kept a great diet, lifestyle, and stress under control yet the symptoms persist or worsen you should see a doctor. Especially if you experience:

- Rapid weight loss
- Rectal bleeding
- Difficulty swallowing
- A persistent change in bowel movements
- Unexplained vomiting

**For further information and  
community support on IBS visit:**

<https://www.ibspatient.org/>



## **Food Allergies and Intolerances**

Sometimes the most delicious and nutritious foods can cause a range of physical problems from GI pain and discomfort to severe immune reactions that can be life-threatening. What do













we do when faced with these issues? Can a healthy diet be maintained if someone is allergic to a whole grain like wheat or has a dairy intolerance? Let’s first begin by defining both food allergy and food intolerance.



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# Most Common Food Allergies and Food Intolerances in the United States

ALLERGIES				INTOLERANCES	
 milk	 egg	 peanuts	 tree nuts	 dairy	 grains/gluten
 fish	 shellfish	 soy	 wheat	 beans	 cabbage



## Food Intolerances

Food intolerance is defined by Janice Thompson in The Science of Nutrition as “gastrointestinal discomfort caused by a digestive problem and not an immune system reaction”. When we eat certain foods and our body does not make the proper digestive enzymes to break down all the components of the food item, our GI tract can become inflamed or irritated. Food intolerances are also linked to recurring stress or psychological issues, irritable bowel syndrome, and sensitivity to food additives. Generally, food intolerances are less serious than a food allergy and typically the pain and discomfort reside once the offending food has passed through the individuals’ system.

**Lactose intolerance** is very common and includes a range of GI problems:

- gas
- indigestion
- diarrhea
- cramping
- bloating

As we age, our bodies make less and less of the enzyme lactase which is needed to breakdown lactose (the primary carbohydrate of dairy products) so it is typical to see more lactose intolerance as people make their way through the

middle and later parts of their life. It is uncommon to see lactose intolerance in children.

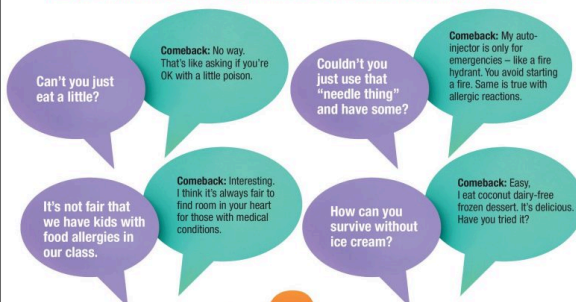


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## TALKING FOOD ALLERGIES

*Allergic Living magazine's snappy comebacks to common food allergy questions.*



### CONVERSATION STARTERS

*Beyond the snappy answer, also use the moment to start a discussion that promotes food allergy understanding.*

**Topic 1: Eating a little.** Explain that with severe food allergies or celiac disease, you can't take chances on "mystery" foods. Until there are cures, avoidance is what saves lives - like yours.

**Topic 2: The auto-injector.** Offer to show the person your epinephrine auto-injector and how it works. **Mention:** If I use it, then I'm having a serious reaction and must immediately go to the emergency room.

**Topic 3: Accommodation is fair.** Make the point that allergies are a legitimate and growing health concern. **Say:** Let's find the balance to keep all students safe and included, while creating an exciting learning environment.

**Topic 4: Safe Isn't Deprived.** Explain: Allergies have led me to discover delicious food alternatives. While I must avoid a few foods, my diet is broad and interesting.

**For more information visit [allergicliving.com](http://allergicliving.com)**

## Food Allergies

Food allergies are an immune hypersensitivity reaction to certain foods. Usually, a protein in the food causes the immune cells in our body to respond by releasing chemicals that cause inflammation throughout the body or in certain areas. The inflammation can be life-threatening if it impacts your airway and causes the trachea or bronchioles to swell shut, a reaction known as anaphylaxis.

**Anaphylaxis** left untreated can lead to shock and maybe even death. Skin rashes, swelling of the tongue, lips, or face can occur in an allergic reaction to food. Wheezing and difficulty breathing are also signs of a food allergy and should be addressed with medical attention as soon as possible. Food allergies are less common than food intolerances but are often more problematic and typically require medication to recover fully. The eight most common food allergens in the United States are milk, egg, wheat, soy, peanut, tree nuts, and fish and shellfish.



Epinephrine is injected in the upper thigh using an auto-injector syringe as an emergency treatment for an acute allergic reaction to food or insect stings. An EpiPen can be used in an emergency to treat anaphylactic shock by injecting epinephrine through clothing.

## Management of Intolerances and Allergies

Now that we know the differences between a food allergy and intolerance, how can we be sure we don't consume the offending food items? What happens if we do so accidentally? The best way to avoid an allergic reaction or episode of GI distress is to not eat the food item, which may be easier said than done. While it may be easy to avoid cheese that causes lactose intolerance symptoms, it can be more challenging to avoid wheat or soy, common components of many food products. Become familiar with and used to reading food

labels, sometimes a seemingly safe product may have a hidden ingredient. The Food Allergy Labeling and Consumer Protection Act of 2004 mandates that all packed foods produced in the US must identify in easy to understand terms if there is a presence of any of the eight most common food allergens. Even if the allergen is only an incidental ingredient such as in the flavoring, it must be listed. If you accidentally consume something you have a true allergy to, it is helpful to have medications like antihistamines on hand or an auto-injector of epinephrine for severe allergies that cause anaphylaxis. Severe reactions should be managed at the hospital, the epinephrine shot will typically allow enough time to get to the emergency department. For accidental consumption of food intolerances, the symptoms should pass once the problematic food is out of the body.



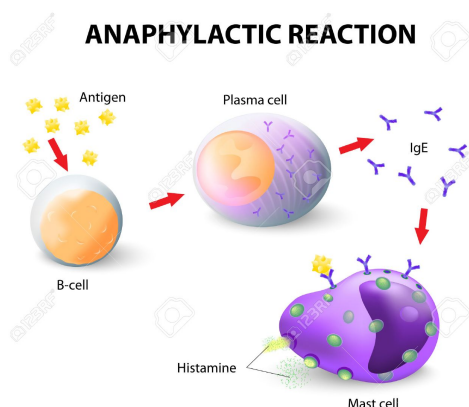
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## Where Do These Problems Come From? How Do I Maintain A Healthy Diet?

It is important to be aware of your family history with regards to food allergies and intolerances, allergies, in particular, can run in families. Monitor what children eat and gauge their physical reactions to new foods since most food allergies develop in childhood. If you suspect a food allergy, a visit

to an allergist can help determine which particular foods you may have immune reactions to. A healthy diet can still be maintained if someone has a food intolerance or a limited number of allergies, but individuals with complex allergies and severe reactions should work with a registered dietician to ensure that they consume the macro and micronutrients they need while avoiding the allergens.

**For further information about food allergies visit:**

<https://www.fda.gov/food/food-labeling-nutrition/food-allergies>

**Resources for Phoenix area families can be found**

**with:** <http://www.phoenixallergynetwork.org/>

## Disordered Eating and Psychological Issues

### What are Disordered Eating and Psychological Issues?

Disordered eating is a condition where one adopts unhealthy eating habits based on the outside world. This means that the obsession with size, weight, diet, and exercise is taken to an unhealthy level. Disordered eating manifests itself through many eating disorders.

All of it has a psychological aspect of its own. People suffering from an eating disorder are often exposed to much bigger pressure from society. The fear of gaining weight, constantly running through their minds, gets them to take drastic measures. Those people are often diagnosed with Anorexia Nervosa (AN) or Bulimia Nervosa (BN).

In this chapter, we will be discussing the two main eating disorders linked to disordered eating and their psychological impact on the person over time. We will also be discussing the symptoms and treatments of those conditions.



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## Anorexia Nervosa (AN)

### Definition

Anorexia Nervosa or commonly called Anorexia is a really strong uncommon fear of gaining weight. It is characterized as abnormally low body weight and a different perception of weight. It was a time when weight was associated with being in a good position in life. Not being rich but being happy and being able to provide enough food for oneself. Society changed to the point where eating is almost being prohibited. “Prohibited” is exactly the feeling that people suffering from Anorexia feel. They are trapped in this box where eating is almost seen as a sin. They could be bereaved themselves from food even though their weight is acceptable.

This is not really food-related; it is more of a coping mechanism. Coping is used differently depending on the person. Some people cope by isolating themselves, some people cope by partying more, some cope by eating, and some cope by not eating. It is most of the time to deal with trauma. People suffering from Anorexia have sometimes been bullied in their childhood about their weight. The only way they know to avoid being bullied is to lose weight, which is not a bad thing in itself, but this disorder turns it into an unhealthy habit. Its consequences can even be life-threatening.



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## Symptoms

Anorexia Nervosa can be characterized by many symptoms.

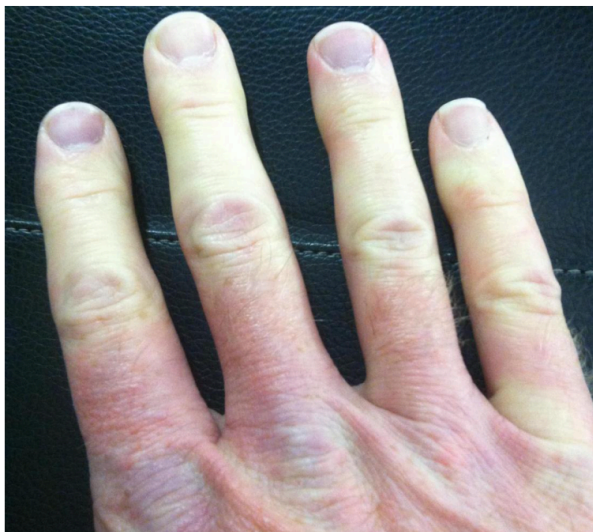
Those symptoms can easily be divided into two categories: The physical symptoms and the behavioral symptoms. As there are plenty of those symptoms, we will be showcasing the six more frequent of each category.

The physical symptoms:

- Extreme weight loss
- Thin appearance
- Abnormal blood counts
- Dry or yellow skin
- Dehydration

The behavioral symptoms:

- Preoccupation with food
- Frequently skipping meals
- Denial of hunger
- Adopting eating rituals such as spitting food after chewing
- Lying about the quantity of food eaten
- Frequently checking in the mirror for perceived flaws



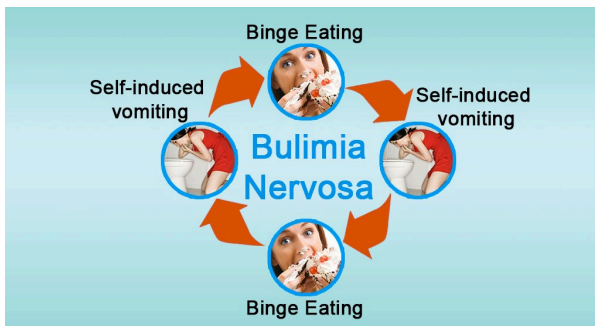
Dry or yellow ski; symptom of Anorexia Nervosa

## Treatment

As mentioned above, Anorexia Nervosa can be life-threatening, and one might need a few trips to the hospital and even be hospitalized. There is no medication to treat this condition. The fastest way to fight against it is to get back to a healthy weight as soon as possible. This recovery may need to be supervised by your primary caregiver and a dietician in order to prevent any abnormal conditions throughout the process. Remember that this condition is firstly triggered by psychological issues; like the disorder itself, the recovery is also psychological. The support of the family and a psychiatrist plays a big role in the road back to a healthy life.

## Bulimia Nervosa (BN)

Bulimia Nervosa is an eating disorder that might potentially be life-threatening. People who have bulimia will eat in very large quantities (bingeing) and then go through unhealthy ways of getting rid of the extra calories. They will tend to make themselves vomit, use laxatives, or even abuse weight-loss supplements. They will tend to restrict themselves from food after eating an enormous quantity. They see themselves as overly big and try to get back to “normal” any way they possibly can. They give a lot of importance to what society can think about them. This psychological pressure makes them “normal” sometimes and “abnormal” some other times. Like Anorexia Nervosa, this disorder is really not about food; it is about the perception and the need to belong.



The cycle of Bulimia Nervosa

## Symptoms

Some symptoms of Bulimia Nervosa might seem similar to those of Anorexia Nervosa. Symptoms include:

- Being preoccupied with your body shape and weight
- Living in fear of gaining weight
- Repeated episodes of eating abnormally large amounts of food in one sitting
- Feeling a loss of control during bingeing
- Using dietary supplements or herbal products excessively for weight loss
- Forcing yourself to vomit to keep from gaining weight after bingeing



This is the fear of gaining weight.



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## Treatment

Contrary to Anorexia Nervosa, bulimia nervosa can actually be treated with some medication. Bulimia Nervosa is often linked to depression; thus the most effective treatment would be to combine antidepressants with psychotherapy.

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6.

# SPORTS NUTRITION

## Eating for On & Off Seasons

Brian Gowan, Hailee Dihel, and Manuel Garcia

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## **Nutrition to Boost Athletic Performance**

The path to a healthy lifestyle can be a confusing and sometimes overwhelming abundance of contradictory information. The desire to achieve and maintain an active and healthy lifestyle may be universal for some, but the way to accomplish those goals can vary for many. Whether we are weekend warriors looking for exercise, outdoor enthusiasts, fitness fanatics, or elite-athletes looking to improve performance on the field, we all need to properly fuel our bodies to reach peak performance and maximize our fitness potential. When our bodies are supplied with the proper nutritional fuel, it is better equipped to meet physical demands, thus enhancing our abilities to reach our fitness goals. However, when combining athletics and performance with nutrition, there isn't a one-size-fits-all method. No matter our age or athletic ability, the fuel that provides that energy and allows us all to perform at optimal levels is nutrition. Not only does nutrition provide us with the energy to perform, but it also allows our body to regenerate and grow after we have broken it down. However, our bodies are unable to complete this repair process unless we have the right amount of sleep. It's this partnership between nutrition and rest that allows our body to function at its highest level. Simply stated, without nutrition, we cannot perform, without rest, we cannot repair.

The following will provide the foundation for the nutritional requirements required by the body to perform at its optimal level. It will also provide and suggest ways to further supplement the body to enhance its basic performance. No set guide improves athletic performance without first incorporating proper nutrition, exercise, and rest. But when the right type of nutrition is paired to each person's need, the demands of the body are more easily met and performance can be attained to function at full capacity. How you push your body's physical limits depends on the goals of each individual and how well you are prepared.

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## **Nutrients for Performance**

Fueling the body for activity begins with proper nutrition. When the body has the right amount of nutrients, it's able to fuel the cells of the body and function at optimal capacity. But what are the necessary nutrients to achieve this state of performance? There are categories of nutrients that define the types of food required for proper nourishment. There are nutrients that our bodies produce, called non-essential nutrients, and nutrients that our bodies require called essential nutrients. What are these nutrients and why are they so important in the growth and performance process?



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## **Macronutrients**

Consist of Carbohydrates, Proteins, and Fats. These categories of nutrients are required in higher amounts and provide the body with sufficient energy in the form of calories.

### ***Carbohydrates***

Not only fuel our cells with the necessary energy *to* perform but also feed our central nervous system so we *can* perform. Per the AMDR(Acceptable Macronutrient Distribution Range), this type of fuel should account for 45-65% of our daily caloric intake, which maximizes our glycogen stores in the liver. But how often do these stores need to be replenished? This depends on how frequent the training. It is recommended to replenish at 6-10g of carbs per kg of bodyweight to fully restore these levels. However, if workouts are more frequent, say every 8 hours, they need to be replenished more often at a rate of 1-1.2g/kg bodyweight. If workouts are less frequent,

it is acceptable to consume the recommended amount of carbohydrates over the individual's regular eating pattern time frame. Replenishment can be further enhanced when carbs are combined with a lean protein source within 2-4 hours of the workout.

## ***Protein***

Provides the building blocks of the body and muscle at the cellular level, making them essential to the growth and repair process. All of the substances in your body are composed of proteins. Those proteins are made from amino acids. Some of the amino acids come from food (essential) while others can be produced in the body (non-essential). We need a combination of both types of amino acids to form the complete protein and the foundation of cellular and muscular growth. However, the protein will not fuel the body unless it is necessary. That primary energy is provided by carbohydrates and fats. The amount of protein needed will depend on the frequency and intensity of the workout. The average person should consume plenty of protein in a well-rounded diet. However, higher intensity workouts require higher protein intake to prevent the loss of lean body mass, especially when weight loss is involved. Protein intake should range between 1.2-2.0g/kg of bodyweight. This should lean to the lower-end when workouts are less than 30 minutes, 5 days a week. Protein increases with the more intense, ore frequent workout that lasts over an hour, 5-7 days/week.



## ***Fats (Healthy)***

Such as Omega-3 fatty-acids assist our system by supporting micronutrient absorption, cellular growth, and repair and by providing added calories as the energy source. When our body becomes fat-adapted, it learns to use fat as the primary energy source, thus sparing the carbs we have stored to be used later. This is prominent in moderate-vigorous endurance athletes and aerobic-type exercises. They can also function as an anti-inflammatory. Inflammation can alter the function of organs and cause pain to the muscles and joints. It can also lead to more serious issues such as cardiovascular disease and immune deficiencies. The Dietary Guidelines recommend 20-35% of the daily caloric intake should come from these healthy fats.

## **Micronutrients**

Consists of vitamins and minerals, to provide the body with the essential components that allow the cells to function properly. Every tissue in the

body is made from cells. When the cells have the proper nutrients to perform their specific function, the body can increase its functional capacity, thus increasing its performance. There are specific micronutrients such as B-vitamins, calcium, and Iron that are essential to promote those functions.

## **B-Complex Vitamins (B1-Thiamine, B2-Riboflavin, B3-Niacin, B5-Pantothenic Acid, B6-Pyroxidine, B7-Biotin, B9-Folate, B12-Cobalamin)**



These water-soluble vitamins are essential to energy metabolism in the body. They not only help the body convert fuel from carbohydrates, fats, and proteins into energy but also utilize the stored energy found in the body. When there is a deficit in these vitamins, the body is not able to function at its optimal level, which makes building muscle and losing weight even harder.

## ***Calcium***

Calcium is critical to fitness due to its ability to aid muscle contraction/relaxation and its component in building bone structure and mass. It also supports the Central Nervous System by building and supporting the messaging center from the brain to the body which allows the body to perform specific functions. Calcium is also necessary for proper cellular function and regulation. By having the proper amount of calcium in the body, it allows specific nutrients into and out of the cell so the body can reach optimal performance.

## ***Iron***

Iron is an element that has many metabolic functions but is specifically critical to blood production. It is found in red blood cells and is not only necessary for red blood cell production, but also for the transport of oxygen from the lungs and to the tissues throughout the body. Hemoglobin is the oxygen-carrying component of that blood. Myoglobin, on the other hand, is found in the muscle cells as opposed to the lungs. It stores the oxygen, releases it, and then transports it to the body as needed. If the cells throughout the body do not have enough oxygen, the tissues that make up the body become oxygen-deprived, a condition called ischemia. As these tissues are further oxygen-deprived and die, organs and systems throughout the body are unable to function properly and these systems eventually fail.

## **Water**

Is important to maintain proper hydration and assure the body functions at its peak ability. The proper fluid balance not only assures the body can utilize energy and nutrients but assists with ridding of the toxins that build up during intense exercise. Hydration can be affected by many factors such as the intensity of the activity, the climate, the duration of the event, and the size/weight of the athlete. The body is approximately 50-70

% water. The Academy of Sports Medicine suggests 16-20oz of water 4hrs before training and another 8-12oz 15 min before workout best satisfies this need. If you see sweaty-salt on your clothes after a workout, that could suggest a loss of sodium. Adding a dash of salt to the water before training may help sustain sodium that is lost. This added mineral can help the cells retain water/hydration and support electrolyte fluid balance in the body. Monitor your hydration level by weighing yourself before and after your workout. For every pound of body weight that is lost after a workout, replenish with 1.5 times the amount of fluids afterward. Remember, the food you eat before and after a workout contributes to your hydration levels. Consuming plenty of fruits and vegetables throughout the day can provide added hydration as well as nutrition.

When the body becomes overheated, it has lost its ability to properly cool. This can also be due to dehydration. The

body cools itself through sweating and evaporative cooling. Meaning, if the body is properly hydrated, it can sweat, thus cooling the body with the outside, ambient air. In a hot and dry climate, the body sweats and evaporates rapidly. The lack of perceived sweat may cause one to think they are not hot enough to sweat until it is too late. In contrast, an extremely hot and humid climate can prevent the body from sweating due to the excessive moisture in the air, hindering the body's ability to properly cool itself. When the body lacks hydration, it's unable to cool and the core body temperature increases, causing heat-related illnesses such as heat cramps, heat exhaustion, and heatstroke.

***If a workout lasts less than an hour, replenish with water.***

***If a workout lasts more than an hour, replenish with a sports drink or electrolyte beverage.***

## ***Sleep***

Is one of the most under-utilized workout tools at our disposal. The body needs time to repair, regenerate, and grow. This can only happen by providing the body with the proper amount of rest. This allows the body time to decrease cortisol

levels and reduce the stress on the body that can hinder mental and physical recovery. It is recommended that 7-8 hours of good, deep sleep per night be achieved.



## **Foods to Fuel Activity**

The common factor for athletes of all levels is to maintain a healthy and nutritious diet. Supplying the body with a well-rounded variety of fruits, vegetables, high-quality carbs (whole grains), lean proteins (meats, fish, poultry, beans) and healthy fats (nuts, seeds, oils) will provide the energy and fuel to support activity at any level. The duration and intensity of exercise will determine how much of these foods are required to sustain the energy needed to maximize individual

performance and maintain muscle mass. But what is the best time to eat these foods to fuel activity?

The right balance of carbs and protein can affect energy levels before a workout. Foods such as bananas, berries, oranges, nuts, and peanut butter provide vitamins, minerals, and water for hydration as well as carbs, proteins, and fats. This can help sustain energy levels throughout the workout. The key is finding the right balance that provides the energy but doesn't leave you feeling hungry or full.

A short but high-intensity workout will utilize glycogen stores from the liver and muscles as the primary energy source. As the workout increases in duration, the body needs to replenish these stores by adding additional carbs. Eating pre-workout protein has been shown to increase muscle performance, growth, and recovery. If competing in a longer and lower intensity workout, fats are the primary fuel for performance. The timing of the meal depends on the timing of the workout. It's better to eat a larger, more complete meal approximately 2-3 hours before the workout or training. The closer to the workout, the smaller the meal or snack should be, while maintaining a light carb and protein balance. Examples of pre-workout meals and snacks are listed below.

### Pre-workout (2 hours+)

- Eggs / toast / avocado / fruit

### Pre-workout (<2 hours)

- Oatmeal with fruit / banana / nuts/ seeds

### **Pre-workout (<1 hour)**

- Yogurt / fruit
- Protein Bar
- Fruits: banana / apple / orange



## **Post-Workout Essentials**

The body has been broken down, energy stores have been utilized and the body needs to be replenished. What is the best



food to fuel the body's repair and recovery? As earlier stated, the body utilizes glycogen stores as energy and they need to be replenished. The proteins in the muscle also get depleted and broken down. To restore these glycogen reserves and repair the muscle breakdown, the food that was utilized and lost as energy is also used to refuel the body and enhance recovery.

The level of muscle tissue breakdown depends on the extent of the exercise/training. More tissue breakdown requires more fuel for repair. The right amount of protein can aid this repair by providing the necessary amino acids to not only repair damaged muscle but build new and stronger muscle. Studies show that approximately 20-40g of protein after a workout provides the necessary building blocks to maximize the body's repair system. The body can best recover when this protein is restored within a two-hour window. It is recommended by the International Society of Sports Nutrition to consume 0.5g of carbs per pound of body weight and approximately 0.14-0.23g per pound of protein within 30 minutes to effectively restore glycogen stores and adequately repair muscle breakdown. These levels can increase with the intensity and/or duration of workouts. Foods to consider include plant-based protein powder, eggs, Greek yogurt (dairy), chicken, tuna, or a protein bar. The amount of energy stores used by the body is also determined by the level of activity. The longer, endurance sports cause the body to use more glycogen than a short-term resistance training session. These carbs need to be replenished as well so they can be utilized for the next workout. These

are best utilized by the body when ingested within 30 minutes after training to maximize this storage. Examples include chocolate milk, fruits, leafy green vegetables, oatmeal, rice, or pasta.

The best way to maximize the benefits of proteins and carbs is to consume them at the same meal. This is especially important if training and exercise are more frequent with fewer days of rest. A ratio of approximately 3:1 carbs-to-protein can stimulate glycogen and protein synthesis and better prepare the body for the next activity.

There are many ways to meet those nutritional requirements to achieve and maintain personal fitness goals. How those requirements are met can impact one's performance and contribute to success or failure, but the choice is determined by the individual. We are not the same. We have different athletic abilities and our nutritional needs and physical demands can vary according to our individual and specific goals. Having a plan and the proper nutritional information only makes it easier to improve performance and be more successful.

## **Activity to Utilize Energy**

We have discussed the types of nutrition to fuel the body to perform at its peak potential, but now that we have the nutritional component established, how do we combine it with physical activity to maximize

the benefit? To obtain a desired level of fitness, the body must be challenged. The demands on the body and breakdown of muscle must be increased so it can rebuild bigger and stronger. This leads to increased muscle size, strength, and endurance. Three exercise types are the foundations for building fitness. The following will briefly describe and explain the function of each.

## ***Aerobic Exercise***

- Incorporates larger muscle groups with repetitive actions to enhance the body's utilization of oxygen and the building of cardiovascular performance.
- Activities include hiking, running, biking, swimming.

## ***Resistance Training***

- Involves the musculoskeletal system by utilizing exercises that involve lifting, pushing, and pulling against resistance. Muscular fitness can be better achieved with heavier weight and fewer repetitions, while muscular endurance can be achieved with lighter weight and increased repetitions.
- Activities include sit-ups, push-ups, pull-ups, and weight training.

## ***Stretching***

- Increases the muscle's ability to flex, extend, and

lengthen. This can assist in the prevention of muscle-based injuries and provide the body with stability and strength.

- Activities include yoga

The **FITT** (*Frequency, Intensity, Time, Type*) acronym can be used to better organize the type of workout for each individual.

The **FIIT Principle** assures that appropriate load-bearing activity can occur to maintain muscle and fitness levels and reach the desired gains.

## **Frequency**

- How often is the workout being performed? Fewer than 5 days/week or greater than 5 days/week?
- ***The Physical Activity Guidelines of America suggest***
  - ***150 hrs/week of aerobic training as a baseline minimum***
  - ***3-6 days/week to achieve and maintain cardio-fitness***
  - ***2-3 days/week to achieve muscular fitness***

## ***Intensity***

### ***Low to Mild Intensity***

- Includes activities that mildly increase cardiac and respiratory rate and can be performed while holding a conversation.
- Activities include walking, cleaning, everyday activities.

### ***Moderate Intensity***

- Activity that increases demand on the body and increases the workload of the heart to 50-70% of its capacity.

### ***Vigorous Intensity***

- Increases the workload by increasing heart rate to 70-85% of its capacity and increasing respiratory rate

### ***Competitive Intensity***

- Activity that increases the workload of the heart to 80-90%

## ***Calculate Your Training Capacity***

- Calculate your maximal heart rate with a simple

equation.

- $(220 - \text{age} = \text{maximal heart rate} / \text{minute})$
- Calculate your heart rate in the form of a percentage.
  - $(220 - \text{age} = \text{max heart rate, then multiplied by the percent you wish to find})$
- **Example:** *What is 70% of my maximal heart rate?*
  - $(220 - \text{age} = \text{max heart rate} \times .80 = 80\% \text{ of your max heart rate in beats/minute})$

## Time

**The Physical Activity Guidelines of America suggests a moderate-to-vigorous exercise for 30 min/day**

- **150 minutes/week of moderate exercise**
- **75 minutes/week of vigorous exercise**
- **2 days/week of all muscle groups**

## Type

- Hike, run, swim, weights

### ***HIIT: High-Intensity Interval***

Strategy to incorporate short-bursts of intense-aerobic

activity followed by brief episodes of rest or lower impact exercise. This efficient use of energy over a short period of time has been shown to increase metabolism by burning more calories, maintaining a higher metabolic rate, increasing fat loss, and efficiently improving oxygen consumption. Workouts generally range from 30-60 minutes and utilize fat as the primary energy source.

For more information on health and nutrition, please visit the following links:

[www.healthline.com/nutrition](http://www.healthline.com/nutrition)

[www.healthline.com/health/fitness-exercise](http://www.healthline.com/health/fitness-exercise)

## *Let's Talk About IV Therapy*



When you hear the term Intravenous (IV) fluid prescription you might automatically think “hospital”. However, in the past few decades, the idea behind the IV fluid prescription has widely been developed to be used outside a hospital setting. Many doctors’ offices, especially those who practice naturopathic medicine very familiar with IV Therapy. Within the past few years, we see IV Therapy become more popular. Anyone who is an active enthusiast or an athlete may benefit and enjoy receiving an IV Therapy Treatment. Do you ever find yourself super dehydrated or extra exhausted after a workout? IV therapy can treat many different symptoms that you may experience.



## Taking Care of Your Body

IV infusions with the right combination of vitamins, minerals, and electrolytes can help deliver effective doses of essential nutrients directly to the cells where they're needed. Do you ever feel like your digestive system gets overly worked? IV therapy is gentle on the digestive system. When you take large doses of magnesium or certain vitamins, it can cause diarrhea, cramps, or other intestinal issues. IV vitamin infusions increase the blood concentration of vitamin C and other powerful antioxidants without the side effects associated with drinking your supplements.

When an athlete is in the recovery stage of their performance, the faster an athlete can re-hydrate, the better off they are. Muscle recovery can be delayed if you're dehydrated. It is important to replenish any lost fluid after a tough workout or performance. However, the effort can be tricky. During hard workouts or races, blood flow to the stomach is redirected to the muscles. When this happens, the reduction in blood flow to the stomach results in a decrease in the ability to digest and absorb nutrients. An IV can bypass the GI tract helping re-hydration happen at a faster rate. This is because all of the nutrients can go directly into the bloodstream. Ever try to drink a gallon of water right after you run a marathon? You might become nauseated and even vomit. When you drink water, you may feel replenished but it's mainly the effect of rehydrating the tissues of your tongue and throat. Your body

actually absorbs water through the large intestine so it may take hours before all the tissues in your body benefit from the fluid you just drank.

*A Colorado Springs-based exercise scientist, Carwyn Sharp Ph.D., has studied the impact of nutrition on recovery in athletes and says oral hydration is sufficient for proper recovery in most cases. But when an athlete is very dehydrated, agrees that IVs can boost recovery.*

## **Nutrients in the IV**

What exactly is in the IV that is being given? Several different options are available when it comes to specific solutions and bags. According to Winona Ball, a Nursing Advisor with over 30 year's experience and a Masters Degree in Health Sciences, the most common choice is normal saline, which consists of sodium chloride and dextrose to form a sugar solution. Dextrose is common among athletes as it is a sugar that is easily digestible in your body. It is a molecule that is taken up into muscles and aids in restoring glycogen and providing energy for the recovery process by helping build new proteins in your body.



Additional nutrients can be added to each bag, regardless of the original solution you choose. It can be as custom as one would like to fit each need. A popular add-in is Vitamin B12, a water-soluble vitamin that supports the body's nerve and blood cells. When a person takes B12, their body will only use what is needed. If your body already has a sufficient amount, it is flushed from your system naturally. Another add-in to help with recovery are amino acids. An amino acid is an organic compound that helps build muscles by forming proteins. Additional amino acids can help assist in recovery especially after high stress or high endurance exercise. The ability to directly administer nutrients and vitamins immediately after competing has become a popular choice in preventing injuries and illnesses among athletes.

## **Benefitting Your Performance**

Every athlete has a sense of competitiveness. Whether you are a professional athlete, high school athlete, or just working out with peers in a group exercise class. We all tend to sometimes push our bodies to the max. We set high goals for ourselves and want to achieve the fastest sprint, the most passes or goals, the fastest time, or the heaviest weights. How much can our bodies really handle without first increasing the nutrients and vitamins to fuel a more intense performance? Our muscles can become fatigued, stretched, and overworked quicker than we may realize. Exercise can lead to a gradual buildup of free radicals. Free radicals can be harmful to the body when they interact with certain types of molecules in your body. Free radicals can cause DNA damage, impairing cellular function or killing cells altogether. Damaged cells open the doorway to potential disease and illness. Here is where antioxidants come into place. Antioxidants are stable molecules that bind to free radicals, stopping potential damage, and assisting in removing free radicals from your body. Amino acids are the building blocks of protein that our bodies require., They can be added to our IV bag to offset the extra strain our muscles and tissues undergo. Below are some of the benefits that athletes can experience if they choose to have an IV solution administered:

- [Reduce recovery time](#)
- [Help with muscle recovery](#)

- Provide fast hydration and rehydration
- Keep our muscles and tissue healthy and balanced
- Help as a pre-exercise/competition boost

## **Risks Associated with IV Therapy**

Of course, you will have risks. There is a risk with anything you do when it comes to having an IV inserted. The line has a direct path into your bloodstream and bypasses your body's main source of protection, the dermis. Although the risk of infection is unlikely, it's important to consult with a licensed medical professional who will perform the therapy to manage this risk and ensure you have a healthy vitamin infusion.

You can also have a risk such as receiving too much of a specific vitamin or mineral, which can increase the risk of other effects to your body. If you are a patient with kidney disease, adding too much potassium too quickly could potentially lead to a heart attack. People with certain heart or blood pressure conditions can also be at risk. In general, excessive levels of any vitamins and minerals can be hard on a person's body and organs.

Overall, IV therapy is a fairly new trend that has become quite popular. Many athletes immediately feel better after receiving a bag of fluids. Although it's not a cure-all, it may be worth the few hundred dollars to keep your body performing at its very best. Would you consider trying IV Therapy to help nourish your body after a hike, run, or basketball game?



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<https://open.maricopa.edu/scgb/?p=57>

For more information on the benefits and risks of IV Therapy check out this blog written by the Staff at the infamous Cedars-Sinai Hospital located in Los Angeles, California.

<https://www.cedars-sinai.org/blog/iv-vitamin-therapy.html>



## **Vegan Choices**

When talking about using a vegan diet we think to ourselves am I getting enough nutrients while I perform. When I first thought about the idea of a vegan diet, I thought the same as most. I quickly learned that you can get all you need for a proper nutritional diet if one chooses to avoid animal-based foods. While researching specifics in regards to a vegetarian diet I learned that you can get the protein you need while you lift weights and that also includes running. When you have daily exercise, you need to eat lots of nutritional meals. If you eat specific greens, that will provide your body energy. Any chance you have to eat a proper diet is great, however, you still need to balance it with swimming and running. An example is weightlifters. You hear of men that can lift extreme weights and then when asked about their diet, are learned they partake in a vegetarian diet. Why are plant-based foods so good for us? What can we obtain from eating a plant-based diet only? Eating proper greens and clean eating can be healthy if you choose the right sources and you can obtain a proper nutritional diet without having a steak.

## **Mental and Physical Fitness**

There are plenty of options when it comes to fulfilling our nutritional requirements. Carbs and fats provide the body

with energy while proteins provide the building blocks for our bodies to repair and keep our organs functioning. Nutrition also affects the brain-body connection which allows us to function at full capacity. Insufficient or improper nutrition decreases the ability of the body to perform and makes us vulnerable to illness and injury. Having a better understanding of how nutrition and fitness work together can optimize health and performance, as well as providing the mental well-being that allows us to push our limits. This can only occur through proper nutrition.

Whichever season we are preparing for, our bodies must be fed the proper fuel to initiate and maximize performance. Nutrition, fitness, and hydration work to benefit everyone. By providing the tools to better understand these concepts, one can develop a program that's tailored to one's specific dietary needs or preferences. The ability to identify nutritional deficiencies may be the key to unlocking new physical goals. It will not only increase year-round performance but can establish and help maintain a lifetime of health and wellness.

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7.

## FOOD SAFETY

Ashley Luzarraga, Kaztenny Rios Amaya,  
and Cynthia Rodriguez Urquidez

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### Food Safety

Foodborne illnesses or food poisoning is an infection caused by contaminated foods it can cause several symptoms such as stomach cramps, fever, nausea, vomiting, or even death. Frequently there is no way to see, smell, or taste harmful bacteria like Salmonella, this brings me to the importance of food handling safety. Cleanliness plays a key factor in food safety as well as separating food to prevent cross-contamination, cooking foods at the correct temperatures, and putting away food by letting it chill and refrigerate promptly. The following listed are basics for food handling safety.

# Basics For Food Handling Safety

## *Shopping*

### Steps to Prevent Food Poisoning



- 1** Wash hands, utensils, and kitchen surfaces often when you cook.



- 2** Keep fresh produce separate from raw meat, chicken, turkey, seafood, and eggs. Use separate cutting boards and plates.



- 3** Cook food to the right internal temperature to kill germs. Use a food thermometer to check.



- 4** Refrigerate perishable food and leftovers within 2 hours (within 1 hour if it's hotter than 90°F outside).

- Purchase refrigerated or frozen items after selecting your non-perishables.
- Don't buy food past "Sell-By", "Use-By" or other expiration dates.
- Don't buy food with mold, major bruises, cuts, food packages with holes, tears, or openings.

- Frozen foods should be solid with no signs of thawing. Refrigerated foods should feel cold to the touch.
- Ensure if safety seals are loose or tampered with. Damaged lids on jars indicate the vacuum is lost and the product may be contaminated.
- Avoid buying cans that are deeply dented, bulging, or rusting, this indicates bacteria can enter the can.
- Put fresh fruits and veggies on top of other foods.
- Buy milk, dairy, deli products toward the end.
- Ensure proper refrigeration of fresh fish, the flesh should be shiny/firm, not separating from the bone, and the odor is fresh and mild rather than overly “fishy”.
- Ensure packaged seafood is well-packed in ice and that packages are sealed tightly and free of dents and tears. Avoid packages containing ice crystals, this may indicate the seafood has previously thawed.
- Choose packaged chicken that looks pink, not gray.
- Check for the Safe Food Handling label on packages of bacon and fresh sausage, this label indicates the meat has undergone safe processing including handling and cooking tips.
- Place raw meat, poultry, and seafood in plastic bags before placing them in your cart, this keeps them from leaking/dripping onto other foods.

## ***Storage***

Hot foods are kept hot and cold foods are kept cold to prevent the growth of the microorganisms that can spoil your food or make you ill. Follow the following:

- Groceries must be stored immediately after grocery shopping.
- The temperature of refrigerated food can go up 8-10°F on a typical trip home from the store.
- Perishable foods must be refrigerated within 2 hours and only 1 hour if it is over 90°F outside.
- Keep perishable foods out of the trunk in summer instead place them in the air-conditioned car.
- The refrigerator should be at 40 °F or below and the freezer at 0 °F or below.
- Fresh poultry, fish, ground meats, and variety meats must be cooked or frozen within 2 days; other beef, veal, lamb, or pork within 3-5 days.
- Perishable food like meat and poultry should be wrapped securely to prevent meat juices from getting onto other food.
- Canned foods are safe indefinitely if not exposed to freezing temperatures or temperatures above 90 °F. High-acid canned food like tomatoes or fruits are best for 12-18 months; low-acid canned food like meats and vegetables for 2 to 5 years.





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*can view it online here:*

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Thawing meat and poultry products at room temperature or partially cooking are examples of practices that can seem convenient to save time but may result in bacterial growth by keeping food in inadequate temperatures where bacteria can multiply much faster. Follow the following for properly thawing, preparing, and cooking food.

## ***Thawing***

- The refrigerator allows slow, safe thawing. Ensure thawing meat and poultry juices do not drip onto other food.
- For faster thawing, place food in a leak-proof plastic bag in cold water. Change the water every 30 minutes.
- Meat and poultry can be thawed in the microwave.
- Meat and poultry must be cooked immediately after thawing.

## ***Preparation***

- Wash hands with warm water and soap for 20 seconds before/after handling food.
- Keep raw meat, poultry, fish, and their juices away from other food to avoid cross-contamination.
- Marinate meat and poultry in a covered dish inside the refrigerator.
- Wash cutting board, utensils, and countertops with hot soapy water after cutting raw meats or sanitize by using a solution of 1 tablespoon of unscented liquid chlorine bleach in 1 gallon of water.

## ***Cooking***

- Cook all raw beef, pork, lamb, and veal steaks, chops, and roasts to a minimum internal temperature of 145 °F.
- Cook all raw ground beef, pork, lamb, and veal to an internal temperature of 160 °F.
- Cook all poultry to an internal temperature of 165 °F.

Assume responsibility in the prevention of foodborne illnesses by assuring food safety when preparing food for ourselves or others as we are the last to handle the food before it's eaten. Take precautions when serving food and putting leftovers away.

## *Serving*

- Keep foods hot with chafing dishes, slow cookers, and warming trays. Keep foods cold by placing dishes in bowls of ice or use small serving trays and replace them often.
- Hot foods should be held at 140 °F or warmer.
- Cold foods should be held at 40 °F or colder.

## *Leftovers*

- Throw any food left out at room temperature for more than 2 hours or 1 hour if the temperature was above 90 °F.
- Place food into containers and immediately put it in the refrigerator or freezer for rapid cooling.
- Use cooked leftovers within 4 days, reheat leftovers to 165 °F.
- Meat and poultry that has been defrosted in the refrigerator may be refrozen before or after cooking, if already thawed using other methods food must be cooked.

Furthermore, it's crucial that in the event of a disaster to take steps for preventing illnesses from unsafe food. After a disaster, make sure to throw away any perishable food that hasn't been refrigerated or frozen due to power outages. Foods that may

have come in contact with floodwater or stormwater, and foods with an unusual odor, color, or texture. Also, when a power outage occurs it is important to keep the doors of the refrigerator/freezer closed as much as possible. A refrigerator can keep food safe for up 4 hours without power if the door is kept shut, whereas a full freezer can keep food safe for 48 hours or 24 hours if only half-full without power if the door is kept shut. Throw out the following foods:

- All perishable foods including meat, poultry, fish, eggs, and leftovers in a refrigerator after 4 hours or more since the power has been off.
- All perishable foods in the freezer if they have thawed.

When in doubt it's better to just throw away food. Food containing ice crystals and feel as cold as if refrigerated can be refrozen or cooked. Check this chart provided by the CDC for a list of what foods should be thrown out and foods that can be refrozen.

Type of food	Contains ice crystals and feels cold as if refrigerated	Thawed and held above 40°F for more than 2 hours
<b>Meat, poultry, seafood</b>		
Meat, poultry, seafood – all types of cuts	Refreeze	Discard
stews, soups	Refreeze	Discard
<b>Dairy</b>		
Milk	Refreeze (some loss of texture)	Discard
Eggs (out of shell) and egg products	Refreeze	Discard
Ice cream, frozen yogurt	Discard	Discard
Cheese (soft and semi-soft)	Refreeze (some loss of texture)	Discard
Hard cheeses	Refreeze	Refreeze
Shredded cheeses	Refreeze	Discard
Cheesecake	Refreeze	Discard
<b>Fruits</b>		
Juices	Refreeze	Refreeze. (discard if mold, yeasty smell, or sliminess develops)
Home or commercially packaged	Refreeze (will change texture and flavor)	Refreeze (discard if mold, yeasty smell, or sliminess develops)
<b>Vegetables</b>		
Juices	Refreeze	Discard after held above 40°F for 6 hours
Home or commercially packaged or blanched	Refreeze (may suffer texture and flavor loss)	Discard after held above 40°F for 6 hours
<b>Breads and pastries</b>		
Breads, rolls, muffins, cakes (without custard fillings)	Refreeze	Refreeze
Cakes, pies, pastries with custard or cheese filling	Refreeze	Discard
Pie crusts, commercial and homemade bread dough	Refreeze (some quality loss may occur)	Refreeze (quality loss is considerable)
<b>Other Foods</b>		
Casseroles: pasta, rice-based	Refreeze	Discard
Flour, cornmeal, nuts	Refreeze	Refreeze
Breakfast items: waffles, pancakes, bagels	Refreeze	Refreeze
Frozen meal, entree, specialty item (pizza, sausage and biscuit, meat pie, convenience foods)	Refreeze	Discard

**By: Ashley Luzarraga**

## Food Poisoning Symptoms

Food poisoning symptoms come in many shapes and sizes. There are many symptoms of food poisoning, and they vary from person to person. Common food poisoning symptoms include; upset stomach, stomach cramps, fever, vomiting, nausea, and diarrhea.

You may be wondering how long it takes for “bad” food to “poison” me. In other words, how long does it take after consuming or drinking contaminated food to ensure the effect of food poisoning? It can take anywhere from a couple of hours or sometimes even days to develop food poisoning symptoms.

However, it is important to know that it is extremely important to stay hydrated once you start experiencing these symptoms such as vomiting, diarrhea, and others due to increased liquids loss. This will help prevent dehydration.



***People with a higher risk of food***

## *poisoning*

Everyone is at risk of having food poisoning. These germs do not discriminate. There are four groups of people who are more prone to have food poisoning. The groups are Adults over 65, children who are younger than five years old, people with weak immune systems, and pregnant women.

However, some people are at higher risk of food poisoning. Adults who are 65 and older have a higher risk of becoming food poisoned. This occurs because the immune system and organs of people who are older than 65 do not recognize and or get rid of these harmful bacteria like their body once did.

Like older people, young children have an immune system that is still developing, meaning it is not yet very strong and prone to have food poisoning. Food poisoning can be very dangerous if not treated adequately, but specifically, with children, food poisoning can be dangerous because they can easily become dehydrated due to diarrhea and vomiting.

In addition to older folks and children, people with weak immune systems are also prone to food poisoning. Causes of a weak immune system can be diabetes, kidney disease, liver disease, alcoholism, STDS/HIVS, recovering from chemotherapy, and many other things that can weaken the immune system. However, when this occurs, they are more prone to food poisoning due to a weakened immune system.

Finally, pregnant women are also more prone to food poisoning. From all germs actually, according to the CDC,

women to fall pregnant are ten times more likely to get a listeria infection compared to the average person (CDC).



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## ***Foods that cause food poisoning***

According to the CDC, seven groups of food are more likely to cause food poisoning. The groups are as follows.

- Chicken, beef, pork, and turkey
  - Raw or undercooked or poorly cooked chicken, beef, pork, and turkey can cause food poisoning. Make sure they are cooked to their ideal temperature. They all vary.
- Fruits and vegetables
  - If fruits and vegetables are not washed properly, they can be contaminated with many germs, which would cause food poisoning.
- Raw milk, raw milk soft cheeses, and other raw milk products



- With Raw milk, raw milk, soft cheeses, and other raw milk products, you have to be very cautious. They can make you very sick if these kinds of milk are unpasteurized, they can contain harmful bacteria. Make sure when consuming these foods to say they “pasteurized.”
- Eggs
  - Make sure eggs are cooked thoroughly, and all the way and do not eat raw batter that contains eggs because the eggs are not yet cooked.
- Seafood and raw shellfish
  - According to the CDC, “cook seafood to 145°F, and heat leftover seafood to 165°F. To avoid foodborne infection, do not eat raw or undercooked fish, shellfish, or food containing raw or undercooked seafood, such as sashimi, some sushi, and ceviche” (CDC).
- Sprouts
  - Make sure to cook your sports thoroughly because they grow in humid conditions.
- Raw flour
  - Flour is raw and has to be cooked like eggs. So like eggs, flour also has to be cooked before consuming. Make sure it is cooked thoroughly before consuming it.



## **Foodborne Germs and Illnesses**

### ***Examples of germs and illnesses***

According to the Centers For Disease Control and Protection (CDC), the following are the symptoms and common food contaminant sources for each illness. The illnesses include staph, clostridium perfringens, salmonella, norovirus, botulism vibrio, campylobacter, E. coli, and Cyclospora.

#### **Staphylococcus aureus (Staph)**

“Symptoms begin 30 minutes – 6 hours after exposure: Nausea, vomiting, stomach cramps. Most people also have diarrhea. Common food sources: Foods that are not cooked after handling, such as sliced meats, puddings, pastries, and sandwiches” (CDC).

## Clostridium perfringens

“Symptoms begin 6 – 24 hours after exposure: Diarrhea, stomach cramps. Vomiting and fever are uncommon. Usually begins suddenly and lasts for less than 24 hours. Common food sources: Beef or poultry, especially large roasts; gravies; dried or precooked foods” (CDC)

## Salmonella

“Symptoms begin 6 hours – 6 days after exposure: Diarrhea, fever, stomach cramps, vomiting. Common food sources: Raw or undercooked chicken, turkey, and meat; eggs; unpasteurized (raw) milk and juice; raw fruits and vegetables

Other sources: Many animals, including backyard poultry, reptiles and amphibians, and rodents (pocket pets)” (CDC)

## Norovirus

“Symptoms begin 12 – 48 hours after exposure: Diarrhea, nausea/stomach pain, vomiting. Common food sources: Contaminated food like leafy greens, fresh fruits, shellfish (such as oysters), or water

Other sources: Infected person; touching contaminated surfaces” (CDC)

## Clostridium botulinum (Botulism)

“Symptoms begin 18 – 36 hours after exposure: Double or

blurred vision, drooping eyelids, slurred speech. Difficulty swallowing, breathing, and dry mouth. Muscle weakness and paralysis. Symptoms start in the head and move down as severity increases. Common food sources: Improperly canned or fermented foods, usually homemade. Prison-made illicit alcohol” (CDC).

## Vibrio

“Symptoms begin 1 – 4 days after exposure: Watery diarrhea, nausea. Stomach cramps, vomiting, fever, chills. Common food sources: Raw or undercooked shellfish, particularly oysters” (CDC)

## Campylobacter

“Symptoms begin 2 – 5 days after exposure: Diarrhea (often bloody), stomach cramps/pain, fever. Common food sources: Raw or undercooked poultry, raw (unpasteurized) milk, and contaminated water” (CDC)

## E. coli (Escherichia coli)

“Symptoms begin 3 – 4 days after exposure: Severe stomach cramps, diarrhea (often bloody), and vomiting. Around 5–10% of people diagnosed with this infection develop a life-threatening complication. Common food sources: Raw or undercooked ground beef, raw (unpasteurized) milk and juice,

raw vegetables (such as lettuce), raw sprouts, contaminated water” (CDC)

## Cyclospora

“Symptoms begin 1 week after exposure: Watery diarrhea, loss of appetite, and weight loss. Stomach cramps/pain, bloating, increased gas, nausea, and fatigue. Common food sources: Raw fruits or vegetables and herbs” (CDC)



**By: Kaztenny Rios Amaya**

## Food poisoning prevention

There are many things about food safety; however, I will mainly focus on food poisoning and chemical safety concerns. Food poisoning can be easily prevented. There are many ways we can prevent it from happening, starting from reheating,

storing food, preparing/handling food, buying food, personal hygiene, environment, and wash dishcloths.

I will go into further details on buying food, preparing/handling, and preventing chemical risks. We all know that one of the best ways to prevent being poisoned is to steer away from eating raw foods, like eggs, meat, and fish, while staying away from unwashed fruits and



vegetables.

To prevent food poisoning, we need to understand the meaning of food poisoning fully. Therefore, when consuming food contaminated with bacteria, viruses, chemicals, parasites, toxins, fungi, etc., will lead to food poisoning.

Many of us never acknowledge that food poisoning can occur in the store while grocery shopping. A major way to prevent food poisoning at the store is to keep in mind that

we still need to separate our foods like fruits from uncooked meats. We should separate foods starting with our grocery cart because the raw meat can leak the water from inside the container to your veggies or fruits, resulting in food contamination, which leads to food poisoning if consumed. We also have to consider that once we touch the juices leaked, our hands and the surfaces we touch, including where the meat has been placed, will now be contaminated. Studies have shown that meat juice was detected on 61% of poultry packages, 34% on shoppers' hands, 41% on grocery bags, 60% on kitchen surfaces, and 51% on food items. ((Chen et al.)) Once we return from the grocery store, we need to always clean our food before storing them in the refrigerator. In this case, we can use a strainer for fruits so that the fruits do not have to come in direct contact with our sink, which may be contaminated. We can clean them with water alone or add some vinegar to the water. When getting ready to prepare a meal, we have to handle and prepare properly. Therefore, you should begin by washing your hands thoroughly with soap and use a clean paper towel to dry. Once they are washed, we need to remember that we need to wash our foods before cutting into them. When cooking vegetables and meats, we need to use different cutting boards and different knives to avoid cross-contamination. Therefore, when cooking, you must constantly wash your hands after handling different foods and using the restroom. A good way to avoid food poisoning is to avoid handling or even cooking meals when feeling sick.

However, our first thought about food safety is food poisoning.



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## Chemical risks

Chemical risks are also a major part. For example, the ink from packaging can relocate into the food. We also have agrochemicals, residues from pesticides, natural toxins, environmental contaminants, metals, packaging, veterinary drugs, etc. Some of the toxic effects of consuming foods that contain chemicals are liver disease, impairment of the nervous system, DNA damage, cancer, kidney damage, even though those are a result of large amounts of ingested chemicals and occurs rarely. The study of adverse effects from consuming chemicals is limited since symptoms, or adverse effects are not demonstrated right away; instead, they develop gradually over



time. However, we have found what certain chemicals can affect our bodies.

- **Bisphenols, such as BPA.** They can act like the hormone estrogen and interfere with puberty and fertility. Bisphenols can also increase body fat, and cause problems with the immune system and nervous system. They are found in the lining of food and soda cans, plastics with the number 3 or 7, and cash register receipts, among other places. They used to be found in plastic baby bottles and sippy cups; while this has been banned, older bottles and cups may still contain them.(McCarthy)
- **Phthalates.** These can also act like hormones, interfering with male genital development, and can increase th



e risk of obesity and cardiovascular disease. They are ubiquitous, found not just in plastic packaging, garden hoses, and inflatable toys, but also in things like nail polish, hairsprays, lotions, and fragrances. (McCarthy)

- **Perfluoroalkyl chemicals (PFCs).** They can lead to low-birthweight babies, as well as problems with the immune system, the thyroid, and fertility. They are commonly found in grease-proof paper, cardboard packaging, and commercial household products such as water-repellent fabric and nonstick pans, among other places. (McCarthy)
- **Perchlorate.** This chemical also interferes with thyroid function and can disrupt early brain development. It's found in some dry food packaging — it's used to decrease static electricity — and sometimes in drinking water. (McCarthy)
- **Artificial food colors.** These have been found to increase symptoms in children who have attention deficit hyperactivity disorder, or ADHD. They are found in all sorts of food products, but especially those marketed for children. (McCarthy)
- **Nitrates and nitrites.** These can interfere with the thyroid, as well as with the blood's ability to deliver oxygen to the body. They can also increase the risk of certain cancers. They are used to preserve food and enhance its color. They are commonly found in processed foods, especially meats. (McCarthy)

**By: Cynthia Rodriguez**

**Safe minimum cooking temperatures information  
please visit:  
[https://www.foodsafety.gov/food-safety-charts/safe-  
minimum-cooking-temperature](https://www.foodsafety.gov/food-safety-charts/safe-minimum-cooking-temperature)**

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8.

## GET MORE FOR YOUR BUCK!

Cook at home

Woodrow Hoover, Macy Ramirez, and  
Francisco Torres

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**\$\$ How do I get more bang  
for my buck? \$\$**

Learning how to save money is part of becoming an adult. Understanding what your individual needs are for either just yourself or others can be a survival tool to help grow as an adult. Using different resources and doing your research is necessary to save money. Below are just a few!

## *Eat at home!*

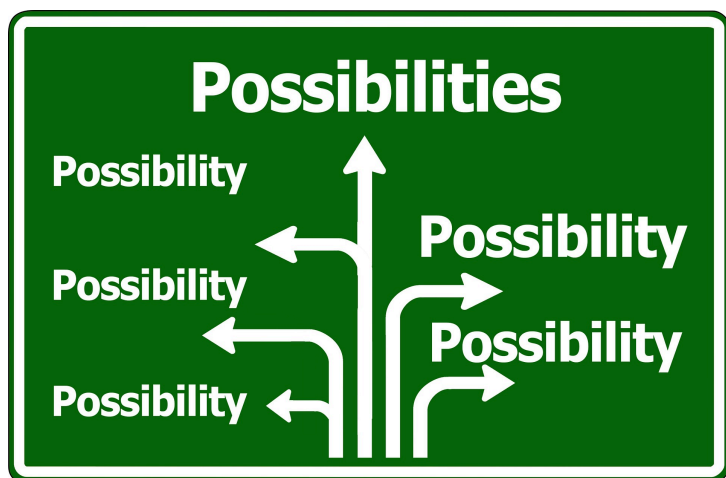


By eating at home, you can plan meals. Cook in bulk, freeze it to make sure you always have food available. There are many resources and recipes from other individuals on the internet who meal prep that can be helpful. It is easier to keep track of calories when you prepare your meals. You have all the information on what you put into your food, therefore knowing exactly what you are putting into your body. The cost of cooking for the whole family can be equivalent to what you might spend at a restaurant just for yourself. Restaurants can seem like an easy way out since others are prepping the food for you, but the costs eventually add up and hurt your bank account. Restaurant food tends to have more preservatives and ingredients such as more sugar, salt, etc. but if you are making your own food, you have control over what goes into your meals!

## *Look for food on sale!*

Review store ads for their weekly deals. Shop at multiple stores as long as they are close to each other. Many stores offer sales where you buy one get one free take advantage of those deals. Make sure to consider shelf life, find out which items can stock up without spoiling, and don't overstock up on produces you might not get a chance to use this time around. Once at check-out, look at the lower bottom of your receipt, where you typically find a percentage of the amount you saved on your purchases. Make it a game to save 30% or more when you grocery shop. Saving money doesn't need to be boring or a chore. Signing up for different apps or mail-in coupons can help send coupons right to your fingertips. With the rise of technology, grocery stores have made their own apps where you can make an account and earn points or even coupons just for using the app.





## ***Try substitutes!***

Be open-minded to different outcomes. A recipe may call for 1-pound of beef, but the meat isn't on sale. Switch it up with a pound of Turkey or Chicken. Finding different ingredients to substitute with may help save money and could even turn out to make the meal healthier. Doing research on what different ingredients can help substitute others will help you get a better understanding and may help you learn more about cooking. Try to find substitutes for your own tastes, for example, if



you prefer sweeter tastes over saltier tastes or vice versa. The possibilities are endless when you learn new and different options.



## ***Make a list!***

Before you head to the grocery store, review what you already do have and necessarily need, create a list, and stick to it! You will be more likely to stick to your budget, and less tempted to buy items that will add up quickly. Make sure to make a point of which items are more necessary than others. If you do need a product yet, you can wait until there is a sale for said product. You can make a list on your phone or on paper if you prefer a

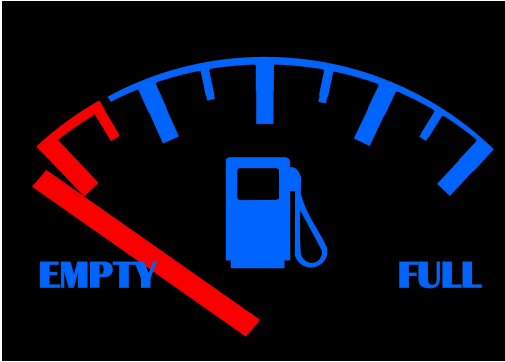
physical copy to help you keep track and remember what you need. It can be easy to sway away from what you actually need at home.



## ***Buy Generic!***

Sometimes, the big-name brand aren't the best option. Try looking for generic or store-branded items to save more money. Just because it's expensive does not make the quality better. Name brands generally have the same ingredients as lesser-known brands. Some consumers may even find that the generic brands taste and perform just as well as big-name brand

products. Most of the time, you are paying for the name and not the quality.



## *Don't go hungry!*

When it's time to head to the grocery store, make sure your stomach is not empty. Statistics show when shopping hungry, you will end up with impulse items, not on your list. This is when the saying “my eyes were bigger than my stomach” comes into play. It is easy when you see the food in front of you to just grab what looks and sounds good which is everything when you are hungry.

[Macy Ramirez](#)

## ***Make Conscious decisions!***

While it may be easier to buy the precooked, seasoned chicken, it is more than likely that the preserved chicken already made costs more than raw chicken you can cook on your own. People tend to have a time is money mentality but in reality, saving time by buying pre-made food costs a lot more than if you were to just cook the chicken in bulk and have it last throughout the week for leftovers. Most of the time the pre-made foods have excess amounts of sodium and preservatives to have the chicken made to last in the fridge or freezer. Also, note whether or not you will completely finish the food and not let it go to waste. Food waste is, unfortunately, very common in America. You wouldn't throw away money so would you throw away food that you paid for? Using the leftovers to add to different recipes can help you save a significant amount of money. It can also be fun as you may have to get creative and try different cooking combinations.

## ***Check to see which Fruits and vegetables are in season!***

Checking the store's weekly ads or simply googling what produce is in season can help you plan ahead of what meals you can cook with the in-season produce you buy. Produce tends to be significantly cheaper when they are in season. For

example, in autumn, apples, pumpkins, and squash are all in surplus therefore grocery stores tend to mark them down or have deals on just those produce. Additionally, since the foods are in season, they will taste significantly better as out of season foods tend to be less flavorful. You will not get the full capacity of flavor you can get from in-season foods.

## ***Buy in Bulk!***

Buying in bulk is another way to save money! Shopping at stores like Costco or Sams club which are large, membership, warehouse stores can be a tool to buy foods you know you will consume for long periods of time, for less money. Buying a large box of granola bars that you know you eat every day as a snack versus buying multiple little boxes of the same granola bars can be significantly cheaper in the price comparison. Not only is it cheaper but it can be less wasteful for the environment as there is less packaging. It can also save you more time as the constant trips to the grocery store may not be needed if you are already stocked up on what you need. This also saves you gas money, a win-win!

## ***Properly store your food!***

As stated earlier, food waste is prevalent in American households. Make sure you are storing your foods properly.

Some produce last longer if refrigerated and some do not. Everyone stores their foods differently so it can be difficult on knowing which way is the right way and which one is wrong. Searching for a scientific answer would be best as it can be proven whether or not storing certain foods differently can add longevity to their lifespan. According to Picincu, apples release a gas called “ethylene” that can overripen other fruits such as bananas, two fruits commonly found together in a fruit bowl. Food research can help you save money!

What Fruits Shouldn't Be Stored Next to Each Other? (n.d.). Retrieved December 12, 2020, from <https://www.livestrong.com/article/523091-what-fruits-shouldnt-be-stored-next-to-each-other/>

[Macy Ramirez](#)



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Woodrow Hoover

Macy Ramirez

Francisco Torres Castro

9.

# DIABETES

Angelica Larraga, Jocelin Flores, and  
Crystal Guzman

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## Introduction

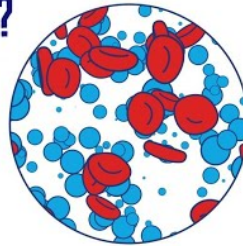
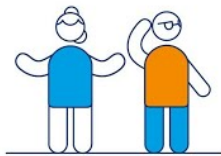
The goal of this chapter is to provide an easy understanding of Diabetes. This disease can cause complications that can lead to death if not managed properly. The chapter will cover the two types of diabetes known as Type 1 and Type 2, and it will elaborate on each one of them. You will have a better understanding of this disease, how it is diagnosed, how it is managed, and what complications result from poorly controlled management.

## What is Diabetes?

The two types of Diabetes this chapter will cover are Type 1 and Type 2. The pathophysiology of them differs from each other but they both result in similar complications. With Type 1 Diabetes, there is no production of insulin from the pancreas which results in high blood sugar levels known as

hyperglycemia. In Type 2 Diabetes there is some production of insulin, however, it is not utilized properly by the body cells resulting in hyperglycemia.

## WHAT IS DIABETES?



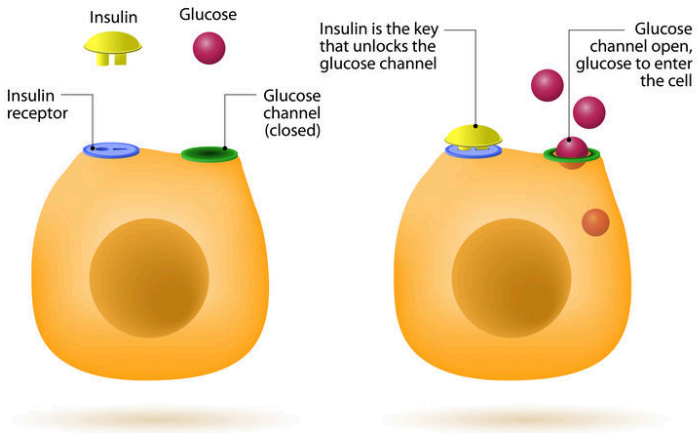
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Now, you may be asking yourself, what is insulin? Insulin is a hormone that is produced by the beta cells of the pancreas and is secreted when there are high blood glucose levels in the body. Insulin regulates blood glucose levels by guiding glucose into cells, specifically the liver, muscle, and adipose tissues.



When there is an excess of glucose, the liver stores it as glycogen for later use.

## HOW DOES INSULIN WORK?



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As mentioned, Type 1 Diabetes is when there is no insulin production, this is known as insulin deficiency and this form of diabetes is considered an autoimmune disease because there

is destruction to the beta cells of the pancreas. This results in insulin dependency because individuals with this type of diabetes will require exogenous insulin to control their glucose levels. Type 2 Diabetes is not considered an autoimmune disease because there is no destruction to the pancreas. The problem with Type 2 Diabetes is insulin resistance, the cells of the body do not respond appropriately to the insulin. This type of Diabetes develops from obesity, sedentary lifestyle, and unhealthy dietary intake and it was commonly seen in older adults over the age of 40 but now it is seen in young children and adolescence due to the increased incidence of obesity in the population. These individuals do not necessarily require insulin but if they do not manage their Diabetes appropriately, they can become insulin-dependent.

### **How do I know if I am at risk for Diabetes?**

There are several modifiable and non-modifiable factors that can increase your risk for diabetes. Non-modifiable risk factors include age, hereditary, gender, and family history. Modifiable risk factors are those that can be altered which include obesity/overweight, high blood pressure, sedentary lifestyle, and smoking.

### **What causes Diabetes?**

The cause for Type 1 diabetes is not quite well known but there may be a relationship between genetics and

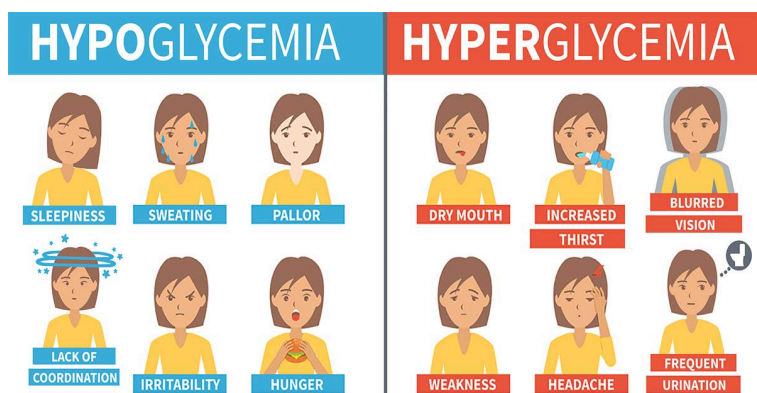
environmental factors that may have triggered the immune system to attack itself, specifically the beta cells of the pancreas.

The cause for Type 2 diabetes is unknown but there is a belief that there is a genetic and environmental predisposition to it. There has also been a link between obesity and type 2 diabetes.

## Clinical Findings

The symptoms for Diabetes type 1 and type 2 are similar and that includes

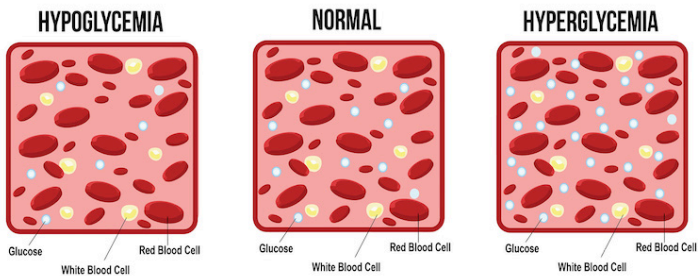
- Increased thirst
- Frequent urination
- Extreme hunger
- Fatigue
- Unexplained weight loss (Type 1 DM)
- Slow-healing sores
- Frequent infections



## Acute Complications

Acute complications of diabetes are conditions called hypoglycemia, Diabetic Ketoacidosis (DKA), and Hyperosmolar Hyperglycemia State (HHS). These are life-threatening conditions and immediate medical intervention is required. In hypoglycemia, there is a low level of blood sugar in the body and this is dangerous because the brain requires glucose for energy. Hypoglycemia can occur with the use of insulin, skipped meals, alcohol, and unplanned exercise without medication adjustment. DKA occurs mostly in Type 1 DM due to the no insulin production in the body. With the lack of insulin, the glucose remains in the bloodstream and the body's natural response is to burn adipose tissue to utilize that stored glucose for energy. The problem with this process is the byproduct that results from the adipose tissue

which is ketones which can turn the body into an acidotic state damaging cells. HHS is when there is a higher concentration of solutes (glucose) in the bloodstream leading to dehydration. This results when blood sugars are greater than 600 mg/dL which causes the body to excrete urine to eliminate the glucose that way. This only increases glucose in the bloodstream due to the excretion of fluids in urine worsening the dehydration status which can be fatal. There are no ketones if any, very minimal, byproducts with this complication making this a common situation of Type 2 DM.



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Author: Jocelin Flores

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## **Diagnostics**

Diagnosis of type 1 diabetes symptoms often appear suddenly and unexpectedly. It can appear through flu-like symptoms for the individual.

Pre-diabetes is when blood sugar levels are higher than normal but not yet high enough to be diagnosed as diabetes. An individual diagnosed with pre-diabetes put them at a higher risk for developing type 2 diabetes and cardiovascular disease. There are no clear symptoms of pre-diabetes so it can be very possible for an individual to have pre-diabetes and not know it. Results that are considered to be pre-diabetes are an A1c of 5.7% to 6.4% and fasting blood glucose of 100 to 125 mg/dl.

### **HgA1c Testing**

hgA1c test measures an individual's average blood sugar for the past two to three months. The pro of this test is that an individual does not have to fast or drink anything. Diabetes is diagnosed at an A1C of greater than or equal to 6.5%. If an individual has a normal A1C it should read less than 5.7%, for pre-diabetes, it is 5.7% to 6.4%, and for diabetes, it is 6.5% or higher.

### **Fasting Plasma Glucose**

Fasting Plasma Glucose is a test that checks for fasting sugar

levels. Having to fast is what helps give doctors a clear look at how the body manages blood sugar levels without the impact of food intake. It is done when they suspect the individual to have type 1 or type 2 diabetes. Diabetes is diagnosed with a fasting blood sugar level of 126 mg/dl or greater. A normal fasting plasma glucose level is less than 100mg/dl and a plasma glucose level of 100 mg/dl to 125 mg/dl is considered pre-diabetes.

## **Random Plasma Glucose Testing**

Random Plasma Glucose Test is a blood test that checks at any time of the day when an individual has diabetes symptoms. It is measuring how much glucose is circulating in an individuals' blood stream. A level that is under 200 mg/ml is acceptable, a level higher than 200 mg/ml with symptoms of diabetes such as blurry vision, excessive urination/ thirst is a signal of diabetes.

## **Nutritional Strategies**

There is no exact or single diet plan for an individual with diabetes. Nutritional strategies for diabetes individuals are going on a diet that consists of rich in whole grains, fruits, vegetables, legumes, and nuts; lower in refined grains, red or processed meats, and sugar-sweetened drink/foods. Also, to exercise which can manage weight and enhance insulin sensitivity, with just a 30-minute walk can go a long way. Avoid



alcoholic beverages, which can cause hypoglycemia, a drop of blood glucose that can lead to fainting, confusion, and clumsiness. Weight loss can aid with blood sugar levels, by just controlling portions and eating healthy are simple ways to start taking the weight off.

## **Medical Management**

### **Insulin**

Insulin helps regulate blood- sugar levels throughout the day and night. Individuals who struggle with type 1 diabetes depend on insulin therapy to help manage their blood glucose levels. Insulin is a stabilizer for individuals who struggle with diabetes.

### **Rapid- Acting Insulin**

A rapid-acting insulin is an insulin that starts to work in minutes and can last a couple of hours. This is usually taken when blood sugars are too high or when eating. Some brand names include Lispro (Humalog), Aspart (Novolog), and Glulisine (Apidra)

### **Short-acting insulin**

This is used to cover insulin needs at mealtime to control blood sugars. Some brand names include Regular(R) or Novolin and Velosulin.

## Intermediate-acting

This insulin is used the least compared to the other ones mentioned. It is mostly used for overnight insulin coverage. A brand name for intermediate insulin is NPH (N).

## Long-acting

This insulin will give you coverage for the whole day to keep blood sugar controlled and not have them unbalanced. Some brand names include Insulin glargine (Basaglar, Lantus, Toujeo), Insulin detemir (Levemir), and Insulin degludec (Tresiba)

## Oral Mediation

This is taken by mouth which helps manage blood sugar levels when individuals still form insulin. This can be combined with insulin which can better improve blood sugar control. These are some of the oral medications individuals with type 2 diabetes use. Sulfonylureas is a medication that lowers blood glucose by causing the pancreas to release more insulin. Biguanides reduce how much glucose the liver is making. This slows down the growth of carbohydrates into sugar and enhances how insulin works in the body. Thiazolidinediones are used to enhance the way insulin works in the body by allowing more glucose to enter the liver, muscles, and fat. Alpha-glucosidase inhibitors lower blood glucose by delaying the breakdown of carbohydrates and reducing glucose

absorptions in the small intestines. Meglitinide lowers blood glucose by getting the pancreas to release more insulin. There are more oral medications offered to individuals by these are the top five offered.

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## Long Term Complications

When left untreated, long-term effects of diabetes include kidney failure, blindness, cardiovascular disease, nerve damage, and amputation. Hyperglycemia (high amounts of sugar in the blood) is a great contributor to those effects.

### **Kidney failure**

The tiny blood vessels in the kidney get clogged with sugar in the blood, causing diabetic kidney disease. Not only is it the number one cause of kidney failure in the United States, but it also keeps kidneys from processing fluids the body needs and keeping the toxins out.

### **Blindness**

The small vessels behind the retina become clogged and can erupt due to the large amounts of sugar in the blood. Diabetic Retinopathy's early symptoms are blurry vision, if left unchecked, can cause blindness.



### **Cardiovascular Disease**

High blood sugar can also damage the vessels and nerves that control the heart. Diabetic people have a higher rate of getting a cardiovascular disease than those who do not have diabetes. According to the American Heart Association, “adults with diabetes are two to four times more likely to die from heart disease than adults without diabetes” and “at least 68 percent of people age 65 or older with diabetes die from some form of heart disease, and 16% die of stroke.”

### **Nerve Damage**

Hyperglycemia damages the blood vessels that are responsible for transporting oxygen to the nerve. Therefore the nerve stops sending pain signals, leaving areas of the body without feeling. Numbed nerves cause significant issues with the feet and wounds. Feet get poor blood circulation, cuts don't get felt, and due to diabetes, the wound will take longer

to heal. That leads to a higher rate of infection and ulcers that lead to the next subject.

### **Amputation**

Due to the nerve damage, poor blood circulation, and slow healing wounds, the infection spreads faster than the body can heal itself. Once that infection gets to the bone, doctors will opt to amputate the limb before the infection continues to spread. The most common body parts amputated due to diabetes-related infections are the toes, feet, and legs.



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## Conclusion

Diabetes is a worldwide issue affecting millions of people. Having two categories, Type 1 being genetic and incurable, and Type 2 a controllable and preventative. Many factors are determining if someone is at high risk of developing Type 2 Diabetes. Please take this mini-test to decide if you are at risk of developing Type 2 Diabetes.

Q: Do you have family members who have diabetes? Y/N

Q: Are you Obese? Y/N

Q: Is your diet consists of high sugar foods? Y/N

Q: Would you describe yourself as inactive or sedentary? Y/  
N

Q: Are you experiencing increased thirst, fatigue, slow healing wounds, and frequent urination? Y/N

Q: Is your race or ethnicity Black, Hispanic, American Indian, or Asian American? Y/N

Q: Are you 35 years or older? Y/N

Q: Do you have high blood pressure? Y/N



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*(This is not a diagnosis, all medical questions and answers should be between you and a medical professional. This test is to bring awareness of Type 2 Diabetes.)*

Angelica Larraga

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## For more information on Diabetes visit any of the following resources

- <https://defeatdiabetes.org/get-healthy/diabetes-support-groups/>
  - <https://www.diabetes.org/>
  - <https://azdhs.gov/>
  - <https://www.cdc.gov/diabetes/library/factsheets.html>
  - <https://www.diabeteseducator.org/living-with-diabetes/Tools-and-Resources>
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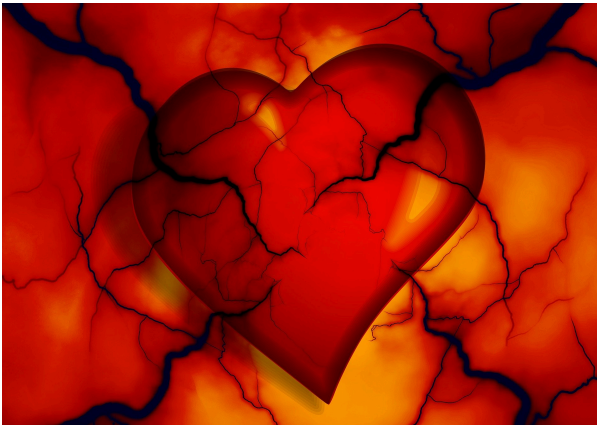
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10.

# HIGH BLOOD PRESSURE

Charmaine Keena, Dennis Douglas, and  
Martin Borboa

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## High Blood Pressure The Silent Killer

High blood pressure “is determined by the amount of blood your heart pumps and the amount of resistance to blood flow in your arteries. The more blood your heart pumps, and the narrower your arteries, the higher your blood pressure (will be)”. (High Blood Pressure (hypertension), 2018, May 12).

**Systolic** and **diastolic** pressure readings provide us with information in regard to the arterial resistance blood flow and the amount of blood pumped by the heart.

- ***Systolic blood pressure*** readings are the number on top (numerator) and indicate the amount of pressure exerted in the arteries when the heart contracts.
- ***Diastolic blood pressure*** readings are the second number (denominator) and inform us how much arterial resistance the heart must pump against every time it completes a contraction.

A physician uses a combination of these two readings to determine if a person is at risk for high blood pressure. Managing and monitoring your blood pressure is the best way to break the silence of this chronic disease that is estimated to affect nearly 85 million U.S adults or about one-third of the population.

High blood pressure is often known as ***the silent killer***. The reputation of being a silent killer is due to the often-asymptomatic profiles that patients may

#### High Blood Pressure Tip #1

Measure your blood pressure often and consult with your physician to accurately discover your

average blood  
pressure range.  
\*Everyone is  
different.

experience. Typically, medical attention is warranted after symptoms become severe. Symptoms may include, but are not limited to, headaches, shortness of breath, or nose bleeds. These signs and symptoms are not exclusive to high blood pressure, and they usually do not

occur until high blood pressure has reached a severe or life-threatening stage.

It is a common occurrence for a person to go through their daily duties and not know the internal battle between blood flow, pressure, arteries, heart, and resistance. This lack of symptoms can be a substantial reason as to why only about 1 in 4 adults (24%) who suffer from this chronic disease have it under control. People who take this risk are tapping at the door of a host of health threats that will bring plentiful noise and daily reminders.

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## Health Threats



According to the Centers for Disease Control (CDC), nearly half of adults in the United States (108 million, or 45%) have hypertension (Facts About Hypertension, 2020, September 08). Some of the most common risk factors for high blood pressure are seen in people with diabetes and gout, African Americans (particularly those who live in the southeastern U.S.), the middle-aged, and the elderly. More than half of all Americans age 60 and older have high blood pressure. People with a family history of high blood pressure or those who consume a high salt diet are at risk. Additional risk factors include obesity, heavy alcohol consumption, and depression. Other factors such as smoking and the lack of physical exercise immensely contribute to high blood pressure.

Interestingly, high blood pressure tends to run in the family genes and is more likely to affect men than women. Age and race also play a role. In the United States, African Americans are twice as likely as Whites to have high blood pressure. After

age 65, black women have the highest incidence of high blood pressure (High Blood Pressure/Hypertension, n.d.).

## High Blood Pressure Tip #2

You can check your blood pressure, free of charge, at:

- Doctor's Office
- Medical Office
- Pharmacy
- Grocery Store
- Local Market
- Pharmacy

Because high blood pressure and elevated blood pressure often have no symptoms, it is essential to regularly check your blood pressure (Manage High Blood Pressure, 2020, February 24). You can measure your blood pressure at home with a home blood pressure monitor, or you can visit your doctor or nurse to have your blood pressure checked.

## What Causes High Blood Pressure?



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The exact cause of high blood pressure is unknown. However, hypertension is dangerous because it hardens the arteries and can lead to heart failure, stroke, and even death.

Some known causes of high blood pressure are:

- Kidney disease
- Long-term kidney infections
- Glomerulonephritis, an inflammation of the tiny filters in the kidneys (glomeruli). The glomeruli remove excess fluid, electrolytes, and waste from your bloodstream and pass them into your urine.

Additional causes of high blood pressure are:

- Diabetes
- Lupus
- Hormone problems such as an underactive thyroid, an overactive thyroid, Cushing's syndrome, acromegaly, and increased levels of the hormone aldosterone (hyperaldosteronism).
- Scleroderma, which is a condition that causes thickened skin, and sometimes problems with organs and blood vessels, can also contribute to high blood pressure.



Certain medications and drugs can cause high blood pressure.



Medications such as the contraceptive pill, steroids, and non-steroidal anti-inflammatory drugs (NSAIDs) – such as ibuprofen and naproxen can raise blood pressure. Additionally, cough and cold remedies and antidepressants like venlafaxine can influence blood pressure. Recreational drugs, such as cocaine and amphetamines, also impair blood pressure.

According to Doctor Suzanne R. Steinbaum, a member of the American Heart Association, as many as 95% of high blood pressure cases in the U.S., the underlying cause can't be found (The Facts About High Blood Pressure, n.d.). This type of high blood pressure is called “essential hypertension.”

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## Management and Treatment

The National High Blood Pressure Education Program reports several options for managing and treating high blood pressure (2004, August). It includes following a special diet, lowering sodium intake, and making lifestyle changes to reduce high blood pressure risk. The recommended modifications can also lower your blood pressure if it

### High Blood Pressure Tip #3

Following a heart-healthy

eating plan such as The Dietary Approaches to Stop Hypertension (DASH) can help to lower your blood pressure. The diet emphasizes:

- Fresh fruits and vegetables
- Whole grains
- Low-fat dairy products
- Low in saturated

is in the elevated, Stage 1 or Stage 2 ranges. The Dietary Approaches to Stop Hypertension (DASH) diet is a heart-healthy eating plan with a proven record of helping people lower blood pressure (Dash Eating Plan, n.d.). The diet emphasizes eating fruits, vegetables, whole grains, and low-fat dairy products. Fruits and vegetables such as potatoes, spinach, and bananas, are rich in potassium, an essential mineral that helps prevent and control high blood pressure. The DASH diet is also low in saturated and total fats and sodium.

The U.S. Department of Health and Human Services (HHS) and the U.S. Department of Agriculture (USDA) recommend sodium intake for people 51+ years of age and people of any age who are black or have hypertension, diabetes, or chronic kidney disease is 1,500 mg per day. People who do not meet

any of these attributes should aim for 2,300 mg per day or less (2015, December). Removing added salt from your meals is the easiest and most visible way to reduce your sodium intake. Pay special attention to the hidden salts found in processed foods such as canned soup, frozen dinners, and some beverages and dessert foods.

- and total fats
- Low sodium

Did you know half cup of instant pudding has 350 mg of sodium, and tomato juice can contain as much as 520 mg?

That's almost 23% of your daily intake!

(McCullough, 2020)

Being overweight or obese increases your risk for high blood pressure. Calculating body mass index (BMI) is a tool for determining whether your weight is within a healthy range. If you are overweight or obese, losing even ten pounds of body weight will lower your blood pressure. Exercise and increasing daily activity are great ways to lose weight and lower your blood pressure when combined with a healthy diet. Exercise

may be intimidating at first, so start small and strive for 30 minutes of physical activity a day.

Excessive alcohol use is a modifiable risk factor that can reduce high blood pressure. Alcohol can raise your blood pressure so consume in moderation.

#### Alcohol in moderation means...

- Two drinks per day for men aged 65 or younger
- One drink per day for women aged 65 or younger
- One drink per day for men and women 65+ years of age (National High Blood Pressure Education Program, 2004, Table 5)

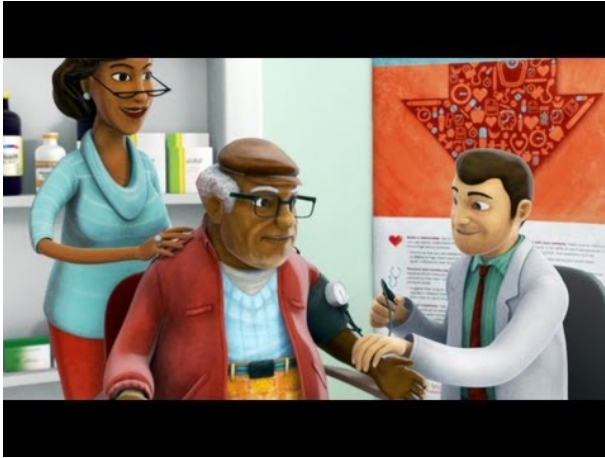


**DON'T SMOKE**

Smoking also raises your blood pressure, and tobacco damages blood vessels, which speeds up the hardening

of arteries and increases high blood pressure risk. Quitting smoking will not only help lower blood pressure but will also lower the risk of heart disease.

Reducing stress levels and obtaining an adequate amount of sleep daily is beneficial to overall health and reduce high blood pressure risk. Stress increases the release of hormones that temporarily increase blood pressure, causing the heart to beat faster and blood vessels to narrow, which may lead to damaged arteries (Stress and high blood pressure: What's the connection?, 2019). Practicing healthy coping techniques, such as deep breathing, meditation, muscle relaxation, and yoga, can help manage stress and blood pressure levels. Getting the adequate amount of restorative sleep the body needs to keep the heart and blood vessels healthy is also vital for lowering stress levels.



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When dietary and lifestyle modifications do not significantly reduce high blood pressure, medication is a viable treatment option. It is common for people to take medicine to help lower blood pressure. There are several different types of medications that work differently, and sometimes more than one medication is prescribed, to help lower blood pressure (Blood Pressure Medicines, 2020).

- Diuretics, or “water pills,” help the kidneys eliminate extra water, which decreases the amount of water and salt in the body and decreases blood volume.

- Other medications act as inhibitors or blockers, which relax the blood vessels or cause the heart to beat with less force.
- Some medications block nerve impulses that tighten blood vessels or control nerve impulses from the brain to relax blood vessels.

It is critical to communicate with your doctor about any side effects and take the medications as prescribed. Blood pressure medications are part of a treatment plan, and lifestyle changes may still be necessary.

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**Measuring**

## Your Blood Pressure

Blood pressure is measured using a blood pressure cuff wrapped around the top part of the arm with the lower end of the cuff placed about 1 inch above the bend of the elbow. The Mayo Clinic recommends, to sit down with both feet flat on the floor with the desired arm gently resting on a table that is level with the heart during the test (n.d.). The cuff inflates and squeezes the arm, and the blood flow through the artery momentarily stops. After the cuff briefly tightens around the arm, it will slowly release the air in the cuff to restore blood flow. As the cuff deflates, the blood flow and pulse are recorded. The entire process takes approximately one minute, and the results are immediate.

In order to understand the numbers given by a blood pressure device, one must understand the units it is measured in (millimeters per mercury, mm/hg) and what these numbers represent. As you recall in the introduction...

- ***Systolic pressure*** is the first number and is exerted in the arteries when the heart contracts and sends the blood back into the blood vessels.
- ***Diastolic pressure*** is the second number and is the pressure in the arteries between contractions, or rather when the heart relaxes.

An easy way to remember the difference between systolic and



diastolic blood pressure is systolic measures when your heart beats (contracts) and diastolic measures when the heart rests in between the heartbeats (contractions).

It is normal for your blood pressure to fluctuate during the day based on your activities (High Blood Pressure Symptoms and Causes, 2020, May 19). But the more consistently your blood pressure is elevated, the more at risk you are for hypertension.

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## Blood Pressure Ranges



A blood pressure that is in the normal range will show systolic blood pressure that is less than 120 mm Hg and a diastolic blood pressure that is less than 80 mm Hg. An elevated blood pressure range will show systolic blood pressure between 120- and 129-mm Hg and diastolic blood pressure less than 80 mm

Hg. Stage 1 Hypertension will appear as having a systolic blood pressure of 130–139 mm Hg or diastolic blood pressure of 80–89 mm Hg. In contrast, Stage 2 hypertension will appear when systolic blood pressure is 140 mm Hg or above, or your diastolic blood pressure is 90 mm Hg or above (Blood Pressure Test, (n.d.).

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## Watch Kendra Scott's Story



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## Test Your Knowledge



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## Know Your High Blood Pressure Risk

Calculate your high blood pressure risk by utilizing the American College of Cardiology's risk estimator. Click on Atherosclerotic Cardiovascular Disease (ASCVD) Risk Estimator.

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## For More Information on High Blood Pressure (Hypertension)

- American Heart Association (AHA)
- Centers for Disease Control and Prevention (CDC)
- Mayo Clinic > High Blood Pressure
- MedlinePlus > High Blood Pressure
- National Heart, Lung, and Blood Institute (NHLBI)

11.

## HIGH CHOLESTEROL

### Putting the squeeze on blood flow

Harmony Latham, Heriberto Ramos Castro,  
and Claudia Palacios

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High cholesterol levels are one of the leading causes of coronary heart disease around the world. Statistics show that each year, there are more than one million individuals that will suffer from heart disease. Cholesterol levels can be controlled, although genetics play a major role in determining the cholesterol level in an individual. A high cholesterol diagnosis carries an increased risk of heart attack or stroke and limits blood flow. Typically, high cholesterol itself is asymptomatic. Eventually, high cholesterol within the body will lead to developing deposits within arteries. When these deposits grow it makes it difficult for blood to flow through the arteries. If the deposits break loose from the wall, they can form a clot that causes heart attacks or strokes. Having routine blood tests can show whether your cholesterol levels are healthy. To help level the cholesterol in a healthy range, people may need heart-healthy lifestyle changes or medicine.



## So what is Cholesterol?

Cholesterol is a substance found in the blood. The body needs cholesterol to build healthy cells, but a high level can increase the risk of heart disease. Having high cholesterol levels in the blood can lead to the development of fatty deposits in your blood vessels. The body does need cholesterol “in order to make hormones, vitamin D, and digestive fluids” (MedlinePlus, 2020). Cholesterol also helps your organs function properly. It can have positive and negative effects on the body.

## What can it do to us?

The negative effects are present when the cholesterol levels are high. The most common cause of high cholesterol is an



“unhealthy lifestyle, led by poor eating habits, lack of physical activities, and/or smoking” (MedlinePlus, 2020). High levels are a risk factor for heart disease which can be life threatening. A variety of things can raise the risk of high cholesterol such as age, heredity, and weight. “Too much cholesterol puts you at risk for heart disease and stroke” (CDC, 2020). Which is important to maintain routine blood work and live a healthy life.

Many people think that working out and losing weight one can lower cholesterol levels, but this statement is not entirely true. The body needs its’ healthy cells to reduce the risk of heart disease. A healthy way to reduce the high levels of cholesterol is by eating fruits and vegetables, and avoiding foods high in fat as in butter or meat. If someone has too much cholesterol in the blood, it can “combine with other substances in the blood to form plaque” (American Heart Association, 2020). Plaque will stick to each other and adhere to the walls of the arteries. The buildup plaque is known as atherosclerosis. Atherosclerosis is where the “coronary arteries become narrow or even blocked which restricts adequate blood flow” (American Heart Association, 2020). Typically, the blood flow is restricted to the heart muscle and causes a heart attack. People don’t know that they’re own blood is carried throughout the body via lipoproteins. There are two types of cholesterol: the “low-density lipoprotein (LDL) which can be called the bad cholesterol and the high-density lipoprotein (HDL) which is called the good cholesterol” (Blood

Cholesterol, 2020). By having a HDL cholesterol it can lower the risk of heart attacks, strokes, or other health conditions.

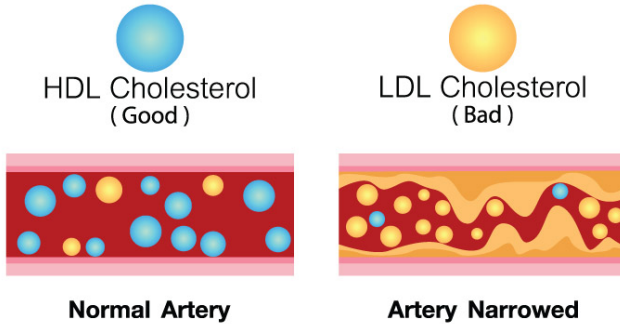


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# The 2 types of Cholesterol – Explained

## Cholesterol - Arteries



Cholesterol in artery, health risk , vector design

- *Low Density Lipoprotein- Transports cholesterol from the liver to the tissues of the body. LDL cholesterol is therefore considered the “bad” cholesterol.*
- *High Density Lipoprotein- It is sometimes called the “good” cholesterol because it carries cholesterol from other parts of your body back to your liver. Your liver then removes the cholesterol from your body.*

## Prevent it, so you don't have to treat it!

In a world full of quick, easy, convenient and fried foods it can be challenging to choose the healthy choices. However, when presented with the issue of cholesterol levels and how they affect every aspect of our well being it is important to start a healthy lifestyle and pursue one for the longevity of life. As always, when dealing with what could be complex medical issues we need to follow the advice of our medical and nutritional professionals. Although many can agree that when choosing a healthy cholesterol lifestyle we should strive to live better.



A healthy cholesterol conscious diet has to “focus on fat” and choose foods that are fresh and high in unsaturated fats. Most of the natural and raw foods will fall into this category, almost never will processed foods be appropriate for

maintaining a healthy lifestyle (Harvard Health Publishing, 2020). It is also important to choose “whole grains” to regulate blood sugar and give the illusion of fullness longer (Harvard Health Publishing, 2020). Making healthy choices is a necessary part of a cholesterol healthy lifestyle.

Finally if a healthy diet and exercise are not enough your medical provider will be able to prescribe medication to assist in lowering the bad cholesterol in your body. These typically are “statin drugs,” however, if you are not able to take statin drugs others are available (Harvard Health Publishing, 2020). By following a cholesterol healthy lifestyle one can minimize the risk of a heart attack.



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## The Nitty Gritty Takeaway

For every 10% drop in cholesterol levels a person can expect a 20-30% decrease risk of a heart attack (Harvard Health

Publishing, 2020). Remembering that choosing a healthy lifestyle for cholesterol benefits will also increase general health and wellness. You may see better sleep patterns, better skin tone, increased energy levels and so much more when a healthy lifestyle is chosen. The body “produces all of the cholesterol it needs” so do not feel pressured to assist the body by consuming extra cholesterol (CDC, 2020). By eating simply and choosing the correct unsaturated fats and mitigating the LDL concentration you will be able to lower “your risk of heart disease and stroke” (CDC, 2020).

## **Check these out for further Cholesterol fun facts – References**

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# DISORDERED EATING

Ashlynn Weaver, Kasey Safa, and Mandy Carter

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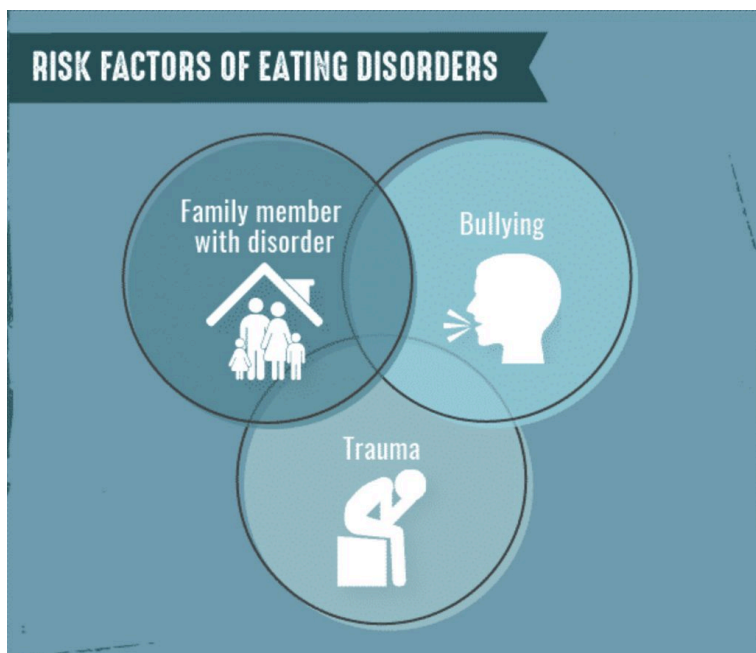
## **Disordered Eating**

“Eating disorders are serious but treatable mental and physical illnesses that can affect people of all genders, ages, races, religions, ethnicities, sexual orientations, body shapes, and weights. National surveys estimate that 20 million women and 10 million men in America will have an eating disorder at some point in their lives” (National Eating Disorders Association, 2018). Numerous factors can contribute to disordered eating. One big factor is body image, which is defined as a person’s perception, feelings about, and critique of his or her body’s appearance and functioning (Thompson, 2020). Body image greatly impacts eating behaviors and exercise habits, which can lead directly to the development of eating disorders. Other factors that can contribute to disordered eating include genetics, personality, and the environment (Thompson, 2020). Genetics comes into play and has shown through multiple studies that those with familial ties to eating disorders are more likely to develop one



themselves than a person with no family history. An individual's personality plays a role as well. When people are already perfectionists or impulsive, this can become amplified through basic needs to control one's life. This includes eating, body image, and exercise. The most influential on an individual's risk could very well be their environment. Someone's environment includes factors such as family, friends, media, sociocultural factors, and countless others. Everything around people affects them in one way or another, whether it be positive or negative.

What eating disorders do these risk factors lead to? There are actually more types of eating disorders than one may think. These include Anorexia Nervosa, Bulimia Nervosa, Binge Eating Disorder, Orthorexia, Other Specified Feeding or Eating Disorder (OSFED), Avoidant Restrictive Food Intake Disorder (ARFID), Pica, Rumination Disorder, Unspecified Feeding or Eating Disorder, Laxative Abuse, and Compulsive Exercise (National Eating Disorders Association, 2018). Eating disorders have the highest mortality rate of any mental illness. It is imperative to recognize them to prevent, identify, and treat them effectively (National Eating Disorders Association, 2018). It is beneficial for all individuals to understand these mental illnesses, with a focus specifically on the most common eating disorders. These include Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder.



Risk Factors of Eating Disorders. (2020, October 5). In 1063059257 810004124 C. Renzoni (Ed.). Retrieved November 17, 2020, from <https://www.therecoveryvillage.com/wp-content/uploads/2019/02/risk-factors-for-eating-disorders.png>

### **What is Anorexia Nervosa?**

Anorexia Nervosa is commonly defined as an eating disorder that negatively affects an individual through abnormally low body weight, as well as an intense fear of gaining weight. Many people coping with this mental illness may even have a warped view of their own weight, believing that they are larger than they really are, which is indicative of body dysmorphia (Staff, 2018).

## Health Effects

Anywhere “between 0.9% and 2.0% of females and 0.1% to 0.3% of males will develop anorexia”(National Eating Disorders, 2018) in their lifetime and, it is considered one of the deadliest psychiatric disorders. People who suffer from anorexia can suffer from a variety of long-term health complications such as amenorrhea, infertility, bone density loss, and at its most severe, sudden death from ventricular arrhythmias.

## Characteristics

Individuals who are living with this disorder can exhibit symptoms, such as:

- Extreme or unhealthy weight loss
- Dizziness and fainting from lack of energy and nutrients
- Thinning hair or hair loss
- Chills or intolerance to cold
- Irregular menstruation flow

If left untreated, it can develop to more permanent consequences, such as:

- Amenorrhea
- Osteoporosis
- Heart issues (mitral valve prolapse, ventricular arrhythmias)
- Gastrointestinal problems

- Electrolyte Imbalance

However, eating disorders are not exclusive to physical well-being but are psychological as well. Traumatic experiences from friends, family, and even society can impact a person's behavior and relationship to their body and their food.

### **Treatment**

There are numerous ways for a person to recover from Anorexia Nervosa. For each person, that experience may be unique. Since it is a psychological disorder in nature that has detrimental physical effects, many people can help guide the individual looking for a happier and healthier lifestyle.

A way to start the journey would be to speak to a psychologist to learn more about the nature of the behaviors and feelings that an individual may be experiencing. They can help to identify the underlying issues and develop a treatment plan, working through some of the destructive thoughts with more positive ones. By focusing on overall health and well-being, rather than weight, an individual can conquer Anorexia Nervosa without fear of relapse (APA 2020).

Another way for people to gain motivation and support in their journey is by finding groups that support body positivity and realistic healthy standards. It is essential to find groups that aren't focused on subjective concepts on what is considered the perfect body. Through Facebook, Blogs, YouTube, Instagram, and many other social media platforms, not only can people find motivation from other strong individuals who

are wanting to help others that are struggling. They can also find support from admirers and use their platform to raise awareness of a balanced, happy, healthy lifestyle.



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## **What is Bulimia Nervosa?**

Bulimia Nervosa is an eating disorder and severe illness that is life-threatening like all other eating disorders.

### **Characteristics**

Bulimia is characterized by the cyclical rotation of the behaviors bingeing and purging. Bingeing is the act of eating large amounts of food during a discrete period of time while feeling a lack of control of your actions and self. This moment of bingeing is usually then followed by intense feelings of regret, disgust in one's self, and then the need to get rid of it. Thus, it is followed by the act of purging. Purging is recurrent inappropriate compensatory behavior, usually to prevent weight gain. The most common form of purging is self-induced vomiting. Other forms of purging include abuse of laxatives, other diuretics, periods of fasting, and excessive exercise. These are the criteria they use to diagnose bulimia

nervosa with the DSM-IV. Diagnosis also involves the behaviors occurring on average once a week for at least three months (National Eating Disorders Association, 2018).

### **Symptoms**

A few warning signs and symptoms to look out for yourself or loved ones include but are not limited to (National Eating Disorders Association, 2018)

- In general, behaviors and attitudes indicate that weight loss, dieting, and control of food are becoming primary concerns
- Evidence of binge eating, including the disappearance of large amounts of food in short periods or lots of empty wrappers and containers indicating consumption of large amounts of food
- Evidence of purging behaviors, including frequent trips to the bathroom after meals, signs and/or smells of vomiting, presence of wrappers or packages of laxatives or diuretics
- Disappears after eating, often to the bathroom
- Fear of eating in public or with others
- Has calluses on the back of the hands and knuckles from self-induced vomiting
- Withdraws from usual friends and activities
- Bodyweight is typically within the normal weight range; may be overweight
- Dental problems, such as enamel erosion, cavities, and

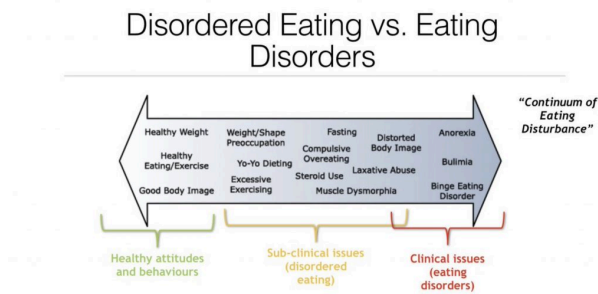
tooth sensitivity

- Menstrual irregularities — missing periods or only having a period while on hormonal contraceptives (this is not considered a “true” period)
- Difficulties concentrating
- Fainting/syncope

## **Treatment**

There is a variety of different treatment settings and care provided for recovery from bulimia nervosa and other eating disorders. Treatment depends on the severity of illness and personal needs. There is intensive outpatient care for those who don't need daily monitoring and can continue to function effectively in everyday life while still being able to focus on recovery. Another way to obtain treatment is through partial hospitalization programs. The person would still reside at home but would go to treatment every day due to impaired ability to function and the need for daily monitoring of behaviors. The next step in treatment settings would be residential. The patient would no longer be residing at home, is considered medically stable but is too mentally impaired to respond to other less intensive treatment programs. The final level of treatment setting is inpatient programs. In these cases, the person is deemed medically and psychiatrically unstable and lives in a facility with constant monitoring and care (National Eating Disorders Association, 2018). On top of getting treatment in a certain setting, many people get help

through different forms of psychotherapy. Psychotherapy can help to form acceptance, modify behaviors, alter belief systems, and find support from within and from others to recover from an eating disorder, and specifically bulimia (National Eating Disorders Association, 2018).



Female Coaching Network. (2018, January 10). Disordered Eating Continuum. Retrieved November 17, 2020, from <https://pbs.twimg.com/media/DTNNzMnW4AE2FNF?format=jpg&name=large>

## What is Binge Eating Disorder?

Binge eating disorder is a severe, life-threatening, and treatable eating disorder. It is one of the newest eating



disorders to be recognized in the DSM-5. Further, it is the most common eating disorder in the United States affecting 3.5% of women and 2.0% of men over the course of their lifetime (National Eating Disorders Association, 2018).

### **Characteristics**

First and foremost, binge-eating disorder consists of recurrent episodes of binge eating. Binge eating is the consumption of a large amount of food in a short period of time, usually accompanied by a feeling of loss of self-control. (Thompson, 2020) Further, the binge eating episode is associated with at least three patterns (National Eating Disorders Association, 2018):

1. Eating more rapidly than normal
2. Eating until uncomfortably full
3. Eating large amounts when not feeling hungry
4. Eating alone due to embarrassment about the amount consumed
5. Feeling disgusted with oneself, depressed, or guilty after the binge

In addition, to obtain a medical diagnosis, the binge eating must have occurred at least two days a week for six months. (Norris, 2019)

When binge eating occurs, the individual will experience extreme distress. The majority of people with BED tend to be overweight due to the positive calorie intake. This can, in

turn, lead to low self-esteem, avoidance of social situations, depression, and negative thoughts related to the self. (Thompson, 2020) It is not associated with the compensations present in bulimia, such as forcing oneself to vomit or using laxatives to promote voiding (National Eating Disorders Association, 2018).

### **Treatment**

The primary goal of treatment for people with binge-eating disorders is to work towards the establishment of a regular, healthy eating pattern. (Norris, 2019) Overall, BED has a greater rate of remission than other eating disorders. People struggling with this disorder respond more positively to cognitive behavioral therapy. In seeking help, it is important to remember that BED is not a choice, it has a neurological and biological basis, and that past trauma may have a role in the development of the eating pattern. (Pryor, 2018)

Appropriate treatment for this disorder is not about weight loss. In fact, when interventions are aimed at weight loss, the patient shows a lower rate of overall weight loss, more rapid weight regain, and higher resistance to future treatment. (Pryor, 2018) Instead, the focus of treatment should be as follows (Pryor, 2018):

1. Development of skills to interrupt binge eating
2. Understand how weight stigma contributes to the development of a binge eating disorder
3. Understanding how weight stigma leads to unhealthy

- efforts to change one's body to make one feel worthy
4. Establishment of a healthy and enjoyable relationship with food and eating through nutritional rehabilitation

### **Nutritional Solutions**

In terms of nutrition, the successful treatment of binge eating disorder comes as a result of making sustainable lifestyle changes. Of the individuals who have successfully made it to remission, long-term, positive results were found in individuals who (Norris, 2019):

1. Made meal plans
2. Maintained a balanced diet of three regular meals
3. Avoided high sugar and other binge foods
4. Wrote a food intake log
5. Avoided alcohol and drugs
6. Began regular exercise regimens

In designing a meal plan for the treatment of a binge eating disorder, it may be wise to enlist the aid of a physician. It is inadvisable to reduce caloric intake by an extreme amount (500-1000 calories) without being monitored by a doctor. Also, the meal plan must contain all the components of a healthful diet. (Thompson, 2020) A healthful diet provides the proper combination of energy and nutrients and is adequate, moderate, nutrient-dense, balanced, and varied. This eating pattern can aid in weight loss in concert with

exercise, which can lead to better overall health for the individual in terms of risk for hypertension, type 2 diabetes, and cardiovascular disease. (Thompson, 2020)

### **Importance of Healthful Eating**

All eating disorders are harmful to the body and mind. A large portion of eating disorders is regarding mental health, but focusing on how it affects the body is important. There are specific health risks for those suffering from Anorexia Nervosa, Bulimia Nervosa, and Binge Eating Disorder respectively. Anorexia Nervosa sends the body into starvation which leads to deficiencies in energy and nutrients that are required for the body to function properly. The body tries to use stored fat and tissues to preserve brain and vital body functions but will eventually lead to heart failure and death due to electrolyte imbalances (Thompson, 2020). Bulimia Nervosa may also lead to heart failure and death due to electrolyte imbalances due to excessive vomiting. It also creates gastrointestinal problems like esophageal ruptures and constipation due to chronic bingeing and purging (Thompson, 2020). Binge Eating Disorder directly leads to weight gain and likely obesity. Obesity is positively correlated with health consequences such as CVD, type 2 diabetes, and cancer (Thompson, 2020). Overall, it is of vital importance to prevent, identify, and treat eating disorders effectively to maintain good mental health and healthful eating habits to prevent disease and to keep our bodies and minds functioning properly.



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<https://open.maricopa.edu/scgb/?p=69>

### **Links for Local and Online Resources**

WD Recovery and Wellness Center, 7330 N 16th St, Suit B101, Phoenix: <https://wdrecoverycenters.com/>

The Mandel Center, 8120 E. Cactus Rd. Suite 310, Scottsdale: <http://www.mandelcenter.com/>

Doorways, 4747 N. 7th Street, Suite 450, Phoenix: <https://www.doorwaysarizona.com/>

Healthy Futures, 8065 N. 85th Way, Scottsdale: <https://healthyfuturesaz.com/>

NEDA Student Life Resources:  
<https://www.nationaleatingdisorders.org/blog-tags/student-life>

NEDA Helpline Information:  
<https://www.nationaleatingdisorders.org/help-support/contact-helpline>

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13.

# OBESITY

Madison Cook and Tyler Steven Thompson

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“Obese” has become a word wrapped in negative connotations due to societal pressures, changing diet culture, and the fast food industry continuously promoting economic growth at the expense of people’s health. Between the discrepancies in energy intake and expenditure, plus food lacking proper nutrition our community is growing their waistbands and damaging their mental health.

Our body thrives off of six essential nutrients: vitamins, minerals, proteins, fats, water, and carbohydrates. The combination of these help our bodies run smoothly however too much or too little of these can cause more harm than good. An excess in fat can cause one to become obese, ultimately leading to a slew of other issues such as cardiovascular disease, diabetes, and many others.



### **BIOLOGY BEHIND OBESITY**

The biology behind obesity lies in the digestive process. Our digestion is an essential body system allowing our bodies to absorb the necessary nutrients it needs to thrive. To take you on a brief tour, the food we eat starts its digestion process in the mouth with chemical digestion through salivary amylase and lingual lipase plus mechanical digestion through the teeth. The bolus (a ball of chewed food) travels through the esophagus to the stomach further chemically digesting the food. The food then travels through the small intestines where most of the nutrient absorption occurs. Most processed fast foods are high in sugar, salt, and fat and low in fiber. The sugar and fat content promote weight gain and the low fiber doesn't allow for the food to take its time during digestion allowing for appropriate nutrient uptake. Once passed through the small intestines the food makes its way to the large intestines where water reabsorption occurs. The food is then sent to the rectum to be expelled. A process essential to overall health.



Fat is a crucial part of our diet with high-fat foods including avocados, cheese, fish and nuts. It “provides more than half of the body’s energy needs” by further breaking down into fatty acids which travel through the blood and are ultimately captured by cells.<sup>1</sup>

Fat not needed for immediate energy sources are bundled up into triglycerides and stored in fat cells. Because fat cells have unlimited capacity, we retain all our dietary fat that isn’t burned through adequate energy expenditure. So, the fat that is consumed through a McDonalds lunch will most likely be stored rather than used right away due to its excess as well as its pairing with too much sugar and salts. “According to the Centers for Disease Control and Prevention (CDC), Americans are eating more calories on average than they did in the 1970s.” And by 2006 Americans were spending 46% on away-from-home food.<sup>2</sup> The sedentary lifestyle of today’s society has also greatly contributed to the rise in obesity. The

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1. Gebel, Erika. “How the Body Uses Carbohydrates, Proteins, and Fats.” Diabetes Forecast, [www.diabetesforecast.org/2011/mar/how-the-body-uses-carbohydrates-proteins-and-fats.html](http://www.diabetesforecast.org/2011/mar/how-the-body-uses-carbohydrates-proteins-and-fats.html). Enter your footnote content here.
  2. Publishing, Harvard Health. “Why People Become Overweight.” Harvard Health, 2009, [www.health.harvard.edu/staying-healthy/why-people-become-overweight](http://www.health.harvard.edu/staying-healthy/why-people-become-overweight). Enter your footnote content here.

lack of energy expenditure coupled with the excess calorie intake promotes the ballooning of waistbands.



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## **WHAT COULD HAPPEN**

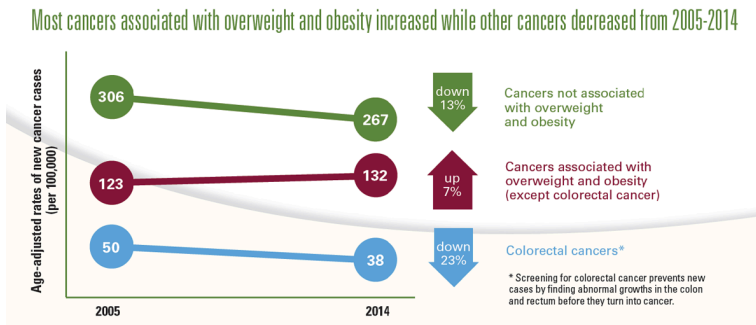
The rising numbers on the scale don't come without health risks. Obesity increases the risk of: "mortality, high blood pressure, high LDL cholesterol, low HDL cholesterol, or high triglycerides, type II diabetes, coronary heart diseases, stroke, gallbladder disease, osteoarthritis, sleep apnea, many types of cancer, low quality of life, mental illness and body pain with difficulty of physical functions" states the Centers for Disease Control.<sup>3</sup> These health conditions are also commonly seen

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3. "Adult Obesity Causes & Consequences." Centers for Disease Control and Prevention, Centers for Disease Control and Prevention, 17 Sept. 2020, [www.cdc.gov/obesity/adult/causes.html](https://www.cdc.gov/obesity/adult/causes.html). Enter your footnote content here.

together in obese patients. For example, the high LDL cholesterol within one's body can lead to diabetes or heart attack due to the arterial plaque buildup.

Refer to the graph below for distinctions between health conditions in those with normal weight compared to those who are obese.<sup>4</sup>



Joint pain and diminishing mental health are two extremely common side effects of obesity. Despite the fact that muscle weighs more than fat, obesity greatly affects our muscular and skeletal systems. The adipose tissue, commonly known as fat, accumulates all around our bodies when there is a lack of proper nutrition and exercise. Common places of buildup are

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4. Ndumele, Chiadi E., et al. "Obesity and Subtypes of Incident Cardiovascular Disease." *Journal of the American Heart Association*, 28 July 2016, [www.ahajournals.org/doi/10.1161/JAHA.116.003921](http://www.ahajournals.org/doi/10.1161/JAHA.116.003921). Enter your footnote content here.

the stomach, legs, butt, arms, etc. The extra weight can put a lot of pressure on the joints leading to not only chronic pain but a further sedentary lifestyle. This chronic pain as well as societal pressures and stigmas around the obese community can lead to declining mental health.



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### **Common Diseases at Risk**

Throughout history, there had been many epidemics. From the Black Plague to the most recent Covid-19, epidemics have been spreading for centuries. However, the real epidemic that has been spreading the last five decades, not contagiously but individually, is obesity. The reason I say this is because in the last fifty years, society (especially in America) has increased from an overall 15% in 1970 to 40.3% for men and 39.7% for women between the ages of 20-39. This isn't contagious, though, as I said before; every individual has eaten their way into obesity by themselves. Although each person has the ability to reverse obesity, the diseases that follow obesity can be

challenging to address. According to the Centers for Disease Control and Prevention (CDC), the leading causes of death in the US are heart disease (655,381), cancer (599,274), accidents (unintentional injuries, 167,127), chronic lower respiratory diseases (159,486), stroke (147,810), Alzheimer's disease (122,019), diabetes (84,946), influenza and pneumonia (59,120), Nephritis, nephrotic syndrome and nephrosis (51,386), and suicide (48,344). Three out of ten of these leading causes correlate with obesity and are heart disease (number 1), stroke (number 5), and diabetes (number 7). Although obesity can cause three of ten causes of death, there are other diseases that can derive from obesity that can make living more challenging than what it can be. As we read throughout this section, we will learn together the common diseases linked to obesity.

### Type 2 Diabetes

Although there are two types of diabetes, a person can develop type 2 diabetes overtime due to a poor diet. Type 1 diabetes is more genetic and often develops in children between the ages of 10 to 14 years of age. Type 2 diabetes often occurs in people who are overweight and obese (80% – 90%) caused by insulin insensitivity. Insulin insensitivity, or insulin resistance, is when a condition which the body becomes less sensitive to a given amount of insulin which then results in insulin having a biological effect that is less than expected. Another cause would be because the pancreas secretes the

sufficient amount of insulin the body needs or the pancreas just stops insulin secretion altogether.

A common misconception is that you can develop type 2 diabetes by consuming an overabundance of sugars, even though that is technically true, the reality is that consuming an overabundance of carbohydrates also causes development. Carbohydrates break down in the body into sugars, glucose, which releases into the blood. The pancreas then secretes insulin to regulate glucose levels in the blood to control blood sugar. People who are obese tend to overeat quite frequently, which is why they're obese in the first place. Most likely, people who have obesity eat an excess amount of fast food and junk food, basically foods with have an excess amounts in carbohydrates, fats or lipids, sugars, and sodium.

Consuming a surplus amount of carbohydrates and sugars causes the blood sugars to rise which causes the pancreas to react by releasing an abundance of insulin, however, overtime the excessive production becomes insufficient this resulting the lack of insulin secretion. Once the pancreas stops secreting insulin, there's no going back. Once a person develops type 2 diabetes then they'll have it for life.

On a positive note, there are ways to prevent type 2 diabetes. Type 2 diabetes is incurable, however prediabetes can be turned around. Prediabetes is when a person most likely has a condition called impaired fasting glucose, which is the fasting blood glucose levels are higher than normal but not high enough to lead to a diagnosis of type 2 diabetes. When

diagnosed with prediabetes, it is obviously strongly encouraged to change the diet they're consuming or it will continue into type 2 diabetes. Also when diagnosed with prediabetes, ways to prevent type 2 diabetes diagnosis is to reduce the bad carbohydrates, sugars, and increase physical activity.

### Cardiovascular Disease (CVD)

Cardiovascular disease is something that you would not want to have. CVD usually starts with an underlying condition called atherosclerosis, a disease in which arterial walls accumulate deposits of lipids and scar tissue, which build up to a point at which they impair blood flow. CVD is a term used pertains to abnormal condition that involves dysfunction of the heart and blood vessels. What happens first is the cells that line the insides of all the arteries become damaged; this process is usually caused by smoking nicotine or the excessive blood glucose in people with badly controlled diabetes. What happens next is the injury of the cells attracts immune cells and triggers vessel [i]inflammation. Inflamed vessels then become weak and allow lipids, mainly cholesterol, to seep through the layers of vessel walls and then become oxidized. Once the immune cells absorb the oxidized lipids, they also accumulate as foam cells, which are then joined by calcium, protein fibers, and other debris to become trapped in thick deposits referred to as plaque. The examples below shows the plaque builds up. Although there are many forms of CVD, the three most

common forms include coronary heart disease, hypertension, and stroke.

### Hypertension

Hypertension, also known as high blood pressure, is when the force of your blood pushing against the walls of your blood vessels (blood pressure) is consistently too high. When your heart pumps blood into the arteries, it's performing the first force: which it is called systolic pressure and should be 120mm Hg or less. The second force is going to be diastolic pressure and is created as the heart rests between beats; diastolic pressure should be 80mm Hg or less. Once plaque starts building up in your arteries, your blood pressure begins to increase and eventually you'll be facing Hypertension Stage 1 (130-139mm Hg systolic and 80-89mm Hg diastolic). When an individual is obese, especially morbidly obese, they have a high risk of have either stage 1, 2, or 3 hypertension; considering what they eat, when they eat, and how much they eat especially with a severe lack of physical activity. When you have stage 1 hypertension then you still have a good chance bringing your blood pressure down only if you take proper precautions like committing to a diet plan and becoming more active. Once a person hits stage 3 hypertension, then it becomes more severe by having a great risk for having a stroke or heart attack and can lead to death.

### Stroke

A stroke is at greater risk once your blood pressure reaches more than 180mm Hg systolic and 120 Hg diastolic. This is



when you're in a hypertension crisis and in need of medical attention right away. There are signs to having a stroke such as blurred vision, sudden numbness, and trouble speaking, so you have a chance to save yourself from death. However, the consequences for having a stroke can be troubling as you can paralysis on the left side of the body, vision problems, and memory loss.

### Coronary Heart Disease or Coronary Artery Disease

Like hypertension, coronary heart disease is caused by plaque build up in the arteries, the coronary arteries to be exact, which are the arteries that lead to the heart. When the coronary arteries are built up with plaque, as we learned earlier, it'll restrict the blood flow, although this time it restricts the blood flow to the heart. When this happens, it can result to a heart attack and death. Just like a stroke, though, if you get medical attention in time then you can survive a heart attack. Just like a stroke, surviving a heart attack has its consequences as well; you'll have to change your diet immediately to lower your blood pressure, keep a constant eye on your blood pressure and heart rate, and stay away from anything exciting that might trigger another attack because once you have a heart attack, you're prone to have another one or two. Coronary heart disease can also lead to something more tragic than a heart attack, it can also lead to heart failure as well. Heart failure is when your heart cannot pump enough blood and oxygen throughout the body to help support your organs; heart failure doesn't necessarily mean your heart just stops.

As we learned, obesity is never good. Several negative factors derive from obesity such as insecurity, mobility, and the diseases at risk. Type 2 diabetes is one of the most common diseases at risk from being obese. This is due to high carbohydrate and sugar consumption, which overworks the pancreas to secrete enough insulin that the body needs to help regulate glucose in the blood. Cardiovascular Disease (CVD) is also one of the most common risk factors from being obese as well. When we consume an overabundance of carbohydrates, lipids, and cholesterol then it causes a build up of plaque in the arteries when seeped through the layers and restricts the blood flow causing high blood pressure. Hypertension (high blood pressure) is then caused and once the systolic reaches 180mm Hg or higher, along with the diastolic pressure reaching 120mm Hg or higher, then the body is at risk for a stroke. Coronary heart disease (coronary artery disease) is the same, but it's when the arteries leading to the heart become closed in, restricting blood flow to the heart causing either a heart attack or heart failure.

### **COMPARE AND CONTRAST**

Obesity is not only an issue in the United States but worldwide. “Globally, 13% of adults aged 18 years and older were obese in 2016.” As stated by World Data.<sup>5</sup> Recorded in

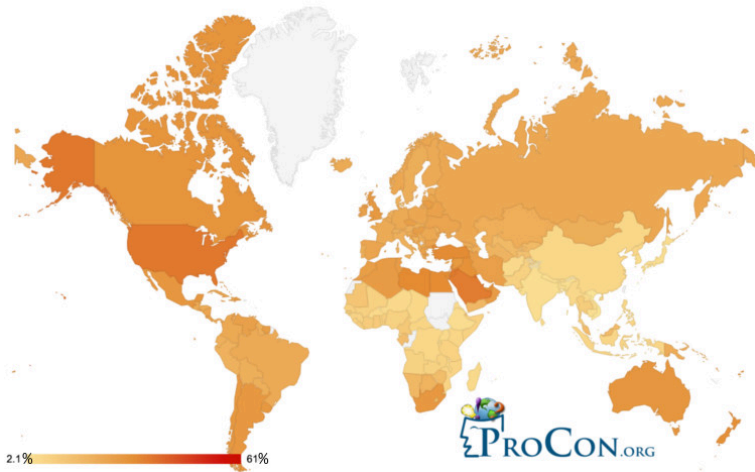
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5. Ritchie, Hannah, and Max Roser. “Obesity.” Our World in Data, 11

2016, Nauru, the Cook Islands, and Palau ranked top three countries for percent of adult population that is obese.

Refer to the graph below. Yellow to Red color changes indicate the percentage of adult populations that are obese.<sup>6</sup>

## 2016 Global Obesity Levels



Developed countries and third world countries have something in common that leads to this obesity epidemic: their diet. Although very different, the diets between these

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Aug. 2017, [ourworldindata.org/obesity](http://ourworldindata.org/obesity). Enter your footnote content here.

6. "Global Obesity Levels - Obesity - ProCon.org." Obesity, 20 Apr. 2020, [obesity.procon.org/global-obesity-levels/](http://obesity.procon.org/global-obesity-levels/). Enter your footnote content here.

two worlds promote extreme weight gain. In the U.S. there are fast food restaurants on every other corner enticing each passerby to devour far beyond what is healthy. In countries such as Nauru and Palau the average income is much lower than a more developed country. The economics play a role in diet and food consumption in these areas where fresh fruit and vegetables are too expensive compared to meat, fish, rice, and potatoes.

### **Your Turn; A Healthy Diet and Lifestyle for Obesity**

Obesity is tough to battle; once you become obese I understand it can be hard to turn it around for the better. Someone who becomes obese may lose hope to become healthy and fit or just doesn't try because it can become too difficult. The bad news is if one doesn't do anything to change, they're at risk for plenty of problems in the future (see section four); however, the good news is that the body is always willing to adapt for the better. Even if someone who is obese is diagnosed with any diseases such as CVD, type 2 diabetes, heart disease, hypothyroidism, etc, they can still rehabilitate their body and mind for a better and healthier future. The only issue with this is that it's going to take some discipline and will power to do so, along with quite a bit of time, but it can definitely be done. Having contracted a disease because of obesity will be a challenge for it as well, but with a proper diet and a strategic exercise plan, even with a disease it can also be done. I am going to go over a diet plan, what to eat, what not

to eat, and some exercise plans to help recover from obesity and to get on the right track.

### The Diet

Obesity usually comes from eating an abundance of unhealthy foods with improper nutrients, causing the arteries to clog and adipose cells to continuously form throughout the body by which it makes it hard to move around as much. When eating fast food and junk food consistently, you are most likely putting saturated fats, trans fats, low-density lipoproteins (LDL, bad cholesterol), refined sugars, and high fructose corn syrup into your digestive track, which then gets absorbed into the body. The only thing is, by consuming these improper nutrients, there isn't anything the body can really do with them but to store them into fatty tissue. The body constantly needs proper nutrients to function properly for life. Of course telling someone about it is easy, but the hard part is actually doing it. The body tends to become addicted to sugars and carbohydrates, the brain releases a chemical called dopamine when sugar is consumed and causes addiction. Dopamine is when neurons in the brain signal when something positive is happening and can get quite addicting. I believe that someone who has obesity can't just cut his or her calorie count dramatically. Once the body is used to consuming 3,000 to 6,000 calories a day, it'll have sudden drawbacks when cut down to 1,800 to 2,200 calories a day, but the idea is to lower it slowly but surely. Also tricking the mind into what you eat is a great way to consume food when hungry

or when the appetite is triggered. How can we trick the mind into doing so? Substitutions are always a great way to break unhealthy eating habits; however we will get to that shortly, for now let's venture to see what not to eat.

### The Diet: What Not to Eat

As we learned before, consuming saturated fats, trans fats, LDLs, refined sugars, and high fructose corn syrup can further damage the body. When you get hungry and go out for lunch, let's say a burger joint, you're most likely will get a huge meal. When your hungry, just the smell of food will trigger hunger causing your eyes to be bigger than your stomach. With that being said, you're most likely going to get a double cheeseburger with French fries and a large soda. Sometimes the burger restaurant will have specialty burgers on the menu as well.

Let's say for example I am obese and I get hungry, I go to a burger restaurant and see they have a double bacon cheeseburger with Portobello mushrooms. The advertisement that they have makes it look so delicious and the more I look at it in line the more I want it. So once it's my turn in line and I do decide to order such burger, then I order large French fries because you can't have a burger without fries; plus I was going to get a medium fries, but getting the large fries is only a dollar more so it's a better value. I then will need something to wash it down with so I order a large drink and I get me a Lemon-lime soda. That right there is most likely a 2,000-calorie meal or more that I hypothetically just consumed which is the daily-

recommended amount. Not to mention that there is no proper nutrients in that meal as well. The sodium content in the burger and the fries are sky high, which is not good for blood pressure, and the lemon-lime soda I consumed probably has at least 32 grams of sugar alone, which is not good for my insulin levels. The French fries and burger also has an abundance of saturated fats along with trans fats from the meat and the grease the fries were fried in; not to mention the fats from the sauce used on the burger as well.

Fast food isn't always the enemy either; junk food does as much damage. There are numerous of items you can get from the grocery store that can damage your body from frozen foods, potato chips, to desserts. Let's use another example: again I am obese, I go to the grocery store to do some shopping. I go and get some protein and I pick out some ground beef with 75% fat; I then go to the bread isle and pick up some white bread. After that I go down to the canned section to pick up some canned vegetables. I also pick up some canned tomato sauce and spaghetti pasta. After that I go down the chip isle and pick up a couple of bags of chips, original and hot. I then grab some American cheese and some processed lunchmeat along with some shredded cheddar cheese and bacon. From there I go down the soda isle and pick up a couple of 12 packs, cola and lemon-lime soda. After that I go down the snack isle and pick up a few boxes of snack cakes, which reminds me I need cereal. So I go to the cereal isle and pick up a couple of boxes of cereal, there I see some pop tarts and

sandwich cookies so I think to myself, “Eh, what the heck?” Lastly with the cereal and cookies I’ll need some milk so I grab a gallon of whole white milk.

That grocery list to me is a bit scary and a tad dangerous, especially for obesity. The amount of sugar in that list from the snack cakes, cookies, cereal, white bread, pasta, and soda is a ticket to type 2 diabetes and weight gain. Not to mention the fat from the ground beef, potato chips, lunchmeat, milk, and cheeses are very high. The sodium levels from the canned vegetables, lunch meats, potato chips, and cheeses are to the extreme; the sodium levels and the fats combined are also a one-way ticket to CVD and blocked arteries too, especially with being obese. So how can we fix this fast food and junk food habit for the better? How can we shop and eat so someone with obesity can lose the weight and lower their risk for chronic diseases? Let’s dive into it!





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### The Diet: What to Eat

As I said before, we need to trick our minds to eat our favorite foods but as healthier options. Substitutions are an excellent way to do this. I'm not talking about drinking diet soda instead of regular soda, but more of subbing out foods with improper nutrition with foods with proper nutrients. For example, going by the grocery list I made in the example above, instead of getting snack cakes and cookies, switch it out with fruit. It's completely normal to have sugar cravings after eating a meal, this is called appetite, but your body isn't necessarily craving snack cakes and pastries; your body is craving sugar after a meal, we just go for snack cakes and pastries because it's an obvious form of sugar that will satisfy your cravings. Try eating a banana or some yogurt with blueberries instead and watch your cravings indeed are satisfied. Substituting fruit

with sugary snacks will ultimately reduce your refined sugar and high fructose corn syrup intake, along with carbohydrates as well. By eliminating these unwanted sugars, blood glucose will be reduced and the pancreas will not secrete as much insulin as it once did. When sweetening teas and other items, try using honey. Honey is a natural sweetener that offers better benefits than refined sugar.

For fats, try substituting butter with a bit of olive oil. Olive oil is the best kind of oil to consume because it's high in monounsaturated fats. I would also substitute mayonnaise, cream cheese, and sour cream with plain Greek yogurt as well; plain Greek yogurt is a great source of calcium and protein, by substituting mayonnaise, cream cheese, and sour cream with this, you reduce your lipid intake drastically. Also try to limit cheese to little to none. I will admit cheese tastes delicious, however the fat content in cheese is rather high. When using cheese, try to stick with white cheeses because yellow cheeses has a higher fat content to it. Instead of frying food, start baking or broiling foods, this will help decrease over-consuming unnecessary fats. Also with choosing protein, go for the leaner meats such as chicken, turkey, fish (salmon and tuna), and lean ground beef that is 90% lean. Try to limit processed foods such as frozen foods and lunchmeats little to none. With lunchmeat, I would recommend taking a rotisserie chicken or baked chicken and shred it into little pieces for a sandwich. Doing this will reduce unwanted chemical consumption along with excess sodium consumption.

When eating carbohydrates, consuming white bread and other carbohydrates with enriched ingredients with low fiber content. It's best to eat foods with fiber because it'll help make you feel full after eating and prevents you from overeating. When shopping for bread, look for items that have fiber between 3-5 grams per slice. Also limit other breads like baguette, sourdough, etc. Be careful with foods with starch like potatoes and corn; instead you can eat sweet potatoes or even moderate these foods.

With spicing up your foods, try to limit the amount of salt you use. Sub out garlic salt for garlic powder. I even recommend using the brand Mrs. Dash because it has no sodium. It's ok to have some salt, but not too much.

### Physical Activity

With someone with obesity, it can be quite challenging to perform any physical activity. Mobility is reduced when obese because the blood flow is restricted to the heart causing their heart rate to go up and get them out of breath fast and tired. It's important to start with small steps and consistently work your way up. No one expects someone with obesity to run a mile at first. I would recommend walking around the park for 10-30 minutes at a time. Also do a bit of body building exercises with light to no weights, it's important to get the body moving and build up the habit. If you have access to a pool then that is fantastic, I would defiantly recommend to do some aerobics in the pool or even just swim around, swimming works every muscle in the body; swimming will also strengthen

the legs and will help people who are obese build muscle to walk around easier. You can also make working out fun like for example, buy a dancing game you can move to; even if you don't stand and dance, you can still dance while sitting down to get your body moving. Do this for about thirty days to build a routine, if you can extend the time of the exercises then do so, but be careful to not strain yourself.

Once you build a routine and your body is ready, it's time to start extending the speed and time of cardio. I don't expect you to run or even power walk just yet, but try to walk a little faster to get the heart rate up. Don't over extend your heart rate though, if it reaches up to 175-180 then slow it down a bit and take a breath, once its down again then keep going. Try going for a longer distance or time, if you're use to walking for 30 minutes, try walking for 45 minutes. I recommend not doing anything less than you did before for example, once you hit a 45-minute walk then don't go back to 30 minutes, keep pushing for the 45 minutes. Eventually you'll start building stamina and start dropping the fat.

I have to note though that this will not be an easy task. It's going to take a lot of work and dedication to drop the weight because your body is not used to moving around. What should help is to think of a motivation to lose it. Whether you want to prevent any future chronic diseases, want to be healthy in general, want to live longer, or just want to look good and be more confident; having that motivation will help you keep going. Also treat every workout like it's your first work out,

but try to push yourself a bit farther. I say this because you would think that the hardest part is to start but in reality the hardest part is to keep it going and staying motivated. Also go on a different route when walking everyday and do different exercises for different body parts, this will keep it from being boring and discouraging. When you're about to go exercise, stay away from saying "I have to go exercise" and say things like "I get to exercise today" and "I get to make myself more healthier today than yesterday." By doing this you wire your brain to making exercising a positive rather than a negative, which will also keep you from being discouraged. Lastly, appreciate yourself more. I know its hard to be confident while being obese, but try to appreciate what kind of person you are and love yourself more. Think to yourself, once I lose this weight, I will look good sure, but I'm still the same good person as I once was. I deserve to live longer and to be healthy; my body deserves to feel great.

### Example Diet Plan for a Week

#### **Monday**

Breakfast: Two eggs, two pieces of wheat toast, a bowl of oatmeal with blueberries, and a banana.

Snack: A granola bar.

Lunch: Tuna sandwich (Tuna, plain Greek yogurt, mustard, and relish) and a serving size of chips (I recommend sun chips or baked chips).

Snack: Peanut butter and honey sandwich.

Dinner: Baked chicken, desired vegetables (broccoli,

asparagus, etc), and a cup of quinoa. Add a salad with vinaigrette dressing.

Dessert: Banana.

## **Tuesday**

Breakfast: Two eggs, a bowl of oatmeal with blueberries, and a banana.

Snack: Yogurt with granola or berries.

Lunch: Baked Chicken salad with an oil or vinaigrette dressing and a whole-wheat roll.

Snack: Serving size of trail mix.

Dinner: Baked salmon, side of desired vegetables, and a baked potato (try using olive oil, plain Greek yogurt, and pepper).

Dessert: Banana.

## **Wednesday**

Breakfast: Veggie omelette (2 eggs, desired veggies such as tomato, spinach, onion, etc) and a banana.

Snack: Carrots and peanut butter.

Lunch: Rotisserie chicken sandwich and a serving size of chips.

Snack: A bowl of grapes.

Dinner: Shredded baked (or crock pot) chicken tacos (chicken, pico de gallo, plain Greek yogurt, and if desired Monterey Jack cheese with corn tortillas; limit to three tacos), Spanish brown rice with quinoa, and whole black beans.

Dessert: Peanut and butter sandwich and a glass of milk.

## **Thursday**

Breakfast: 2 eggs, 2 pieces of toast, bowl of oatmeal with berries, and a banana.

Snack: Serving size of chips.

Lunch: Turkey wrap (turkey, romaine lettuce, tomato, and onion; try adding an avocado as well!) and a kale salad.

Snack: carrots and celery with peanut butter.

Dinner: Lean burger (Whole wheat bun, 90% lean ground beef or turkey, romaine lettuce, tomato, onion, and mustard with ketchup), and baked fries.

Dessert: Banana.

### **Friday**

Breakfast: 2 eggs, bowl of oatmeal, and a banana.

Snack: Whey protein isolate shake (you should be exercising).

Lunch: Salmon power bowl (1 cup quinoa, mixed vegetables, 5 oz salmon, garnished with sprouts; feel free to use a low calorie and low sodium soy ginger glaze).

Snack: Hummus with carrots and celery.

Dinner: Grilled chicken sandwich (Tenderized chicken breast, sautéed on a skillet with a serving size of olive oil, romaine lettuce, tomato, and plain Greek yogurt and a whole wheat bun) and a kale salad.

Dessert: Peanut butter and banana sandwich.

### **Saturday**

Breakfast: 2 eggs, bowl of oatmeal, and a banana.

Snack: Whey protein isolate.

Lunch: Bean burger (Bean burger, Whole wheat bun,

avocado, tomato, romaine lettuce, and plain Greek yogurt infused with a type of salsa) and baked fries.

Snack: Hummus with celery and carrots.

Dinner: Turkey dinner (baked turkey), baked potato, asparagus or broccoli, and a whole-wheat roll.

Dessert: Yogurt with blueberries or granola.

### **Sunday**

Breakfast: Breakfast omelette and a banana.

Snack: Smoothie (spinach, kale, desired berries, banana, and oats).

Lunch: Baked chicken, kale, and spinach salad.

Snack: Carrots and peanut butter.

Dinner: Spaghetti squash and meatballs (ground turkey, organic tomato sauce; cooked in the crock pot on high for 4 hours. Spaghetti squash brushed with olive oil and spices; baked at 400 degrees for 45 minutes to an hour).

Dessert: Banana.

It's important to have fun with your diet and exercise regime so that it can become a sustainable lifestyle. The goal for the sample diet is to eat 4-6 times a day in order to build up your metabolism. Switching out soda for sparkling water or tea, sometimes juice, is a great way to start limiting the sugar in ones diet.

Drinking a glass of water right when you wake up is a healthy start to the day to rehydrate your body and organs. Drinking water before and during meals can help curb satiety



as dehydration can lead us to think we are hungry rather than in need of a glass of water. For dessert, switching from sugary processed foods to fruits like berries or bananas for example can satisfy your sweet tooth while incorporating natural sugars into your diet. All in all a healthy diet can look different for each person however balance and a healthy relationship with food are most important. With this in mind, review and extract what stands out to you and good luck!



We Can! (Way's to Enhance Children's Activity & Nutrition) is a national movement created by the NIH dedicated to helping set a foundation for a healthy diet and lifestyle in children. The following link highlights programs

and resources across the country and within each state.: <https://www.nhlbi.nih.gov/health/educational/wecan/community/find-a-program.htm>

Authors: Maddie Cook and Tyler Thompson

14.

## CALCIUM

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Calcium

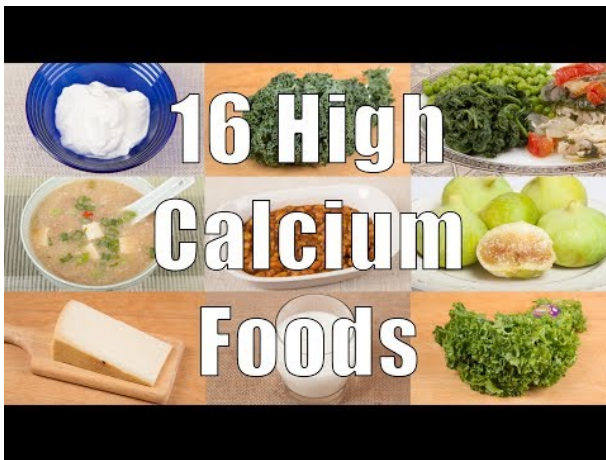
plays an important role for the human body. From helping with healthy teeth and bones to blood circulation and neuro communication. People need calcium to prevent possible disease that can occur from low intake of calcium. The kinds of diseases that may occur are osteoporosis, tooth decay, heart problems, and seizures. Osteoporosis is a disease that causes the bones to become fragile and more porous which can make them easier to break. To prevent these types of diseases a healthy diet containing a well balanced intake of calcium from the following: dark leafy greens, salmon, tuna, cheese, yogurt, & eggs. Dark leafy greens such as kale, arugula, and collard greens help with bone integrity. Salmon and Tuna provides

vitamin D to the body which is needed to absorb calcium within the body. This is why vitamin D is added within milk and other dairy products. Mozzarella is a cheese with the highest calcium content within cheeses and because cheese is made from milk that is why it is a good source of calcium. Yogurt has more calcium than milk because of how it's prepared, a person can get 42% of their daily intake of calcium needs from one eight ounce serving. Eggs can be rich in Vitamin D which is needed to provide good bone health, Also the egg white does not contain Vitamin D just the yolk of the egg.

Calcium is more important for women than in men, especially for women that are pregnant and over 50. Not only does calcium help strengthen girls bones and teeth but when she is carrying a child; it is said that the calcium consumed helps strengthen the baby's growing bones and teeth, boosts muscle, and even helps with their heart and nerves. Calcium is a key component for the help and process of children growing to their true potential. Babies and young kids absolutely need calcium and vitamin D to prevent diseases like rickets. Women are at higher risk in developing osteoporosis than men, this tends to happen right after menopause which then reduces estrogen levels. It's important to get the right amount of calcium because too much can cause gas, constipation, bloating, and may even cause kidney stones. Lacking too much calcium can result in muscle cramps and aches. Too much

calcium can start to interfere with the heart and brain function which can be threatening to the body.

Certain kinds of people such as vegans and lactose intolerant people sometime have to take supplements in order to maintain their calcium levels since their diet is low on calcium intake. You should not consume calcium supplements unless prescribed or recommended by a doctor. Vegans need to consume dark leafy greens, oats, rice, and unsweetened soy in order to reach their daily intake. Lactose intolerant people need to consume fortified orange juice, soy, fish, vegetables like broccoli and kale. Supplements of calcium are not the best option in reaching the amount of daily calcium intake. These supplements can cause unwanted side effects such as heart disease, strokes, and prostate cancer.



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By: Sisqo Yates

15.

## NOURISHING YOUR BODY WITH FRUITS & VEGETABLES

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### **Fruits & Vegetables**

#### Fruits

and Vegetables play an essential role when it comes to nourishing our bodies. They're packed with many vitamins and minerals that help support our bodies by providing critical nutrients. Maintaining a diet that's rich in fruits and vegetables can help with reducing the risk of heart disease and strokes, lowers blood pressure, prevents cancer, lowers the risk of digestive and eye problems, and even promotes healthy weight loss. Fruits and Vegetables also contribute to fiber, healthy fats, and phytochemicals, which are also essential for a well-nourished body. These nutrients all work together and affect your overall health, how your body communicates with your brain, muscle growth and function, wound healing, skin health, mood, energy, and appetite.

Fruits and Vegetables are packed with fiber, folate,

potassium, vitamin C, and vitamin A. Nutrients that, when combined, perhaps provide hundreds of benefits. Getting fiber from vegetables may lower your risk of heart disease, help reduce blood cholesterol levels, and assist with weight loss. Fiber is very important for your digestive system; it's crucial for proper bowel function and reducing constipation. As for weight loss, the fiber in fruits and vegetables will keep you full longer and have very few calories. Folate or also known as folic acid, aids the body in producing and maintaining new cells. Women who are pregnant or considering pregnancy are recommended to take folic acid to prevent neural tube defects, spina bifida, and anencephaly during fetal development. Potassium may help reduce blood pressure, prevent osteoporosis and kidney stones, and protect against the risk of a stroke. Vitamin C helps your body with wound healing, eye disease, and even wrinkles. Vitamin A keeps your skin and eyes healthy.

So how many fruits and vegetables should we consume daily? How much we consume depends on our age, gender, and physical activity. The average recommendation for adults is 1- 3 cups of fruits and vegetables daily. They can be consumed raw, cooked, or juice and can be fresh, frozen, or canned.



Daily Vegetable Recommendation		
Children	2-3 yrs.	1 cup
	4-8 yrs.	1½ cups
Girls	9-13 yrs.	2 cups
	14-18 yrs.	2½ cups
Boys	9-13 yrs.	2½ cups
	14-18 yrs.	3 cups
Women	19-30 yrs.	2½ cups
	31-50 yrs.	2½ cups
	51+ yrs.	2 cups
Men	19-30 yrs.	3 cups
	31-50 yrs.	3 cups
	51+ yrs.	2½ cups

Daily Fruit Recommendation		
Children	2-3 yrs.	1 cup
	4-8 yrs.	1 to 1½ cups
Girls	9-13 yrs.	1½ cups
	14-18 yrs.	1½ cups
Boys	9-13 yrs.	1½ cups
	14-18 yrs.	2 cups
Women	19-30 yrs.	2 cups
	31-50 yrs.	1½ cups
	51+ yrs.	1½ cups
Men	19-30 yrs.	2 cups
	31-50 yrs.	2 cups
	51+ yrs.	2 cups

There are at least nine different families of fruits and vegetables, and based on their nutrient content, they're separated into various subgroups. Vegetables are separated into five subgroups; dark-green vegetables, red and orange vegetables, beans and peas, starchy vegetables, and other vegetables. Dark-green vegetables like broccoli, collard greens,

kale, spinach, and romaine lettuce are great vitamins and low calories. Dark green vegetables are associated with vitamin A and C, potassium, magnesium, folate, and fiber. Red and orange vegetables like carrots, pumpkin, red peppers, tomatoes, and sweet potatoes are also known to be excellent in fiber, potassium, and vitamin A. Beans and peas like chickpeas, lentils, black beans, soybeans, and black beans are a great source of fiber, folate, and minerals. Starchy vegetables are a great source of carbohydrates and fiber; however, they also have higher calories, so limited intake is recommended. Starchy vegetables include corn, green beans, potatoes, and green lima beans. Other vegetables include cauliflower, avocados, cucumbers, zucchini, and mushrooms, and due to the variety, their nutritional benefits vary.

### **Tips for eating more fruits and vegetables:**

- Meal prep your veggies – you will be less tempted to eat unhealthy fast food. The convenience will make it easier to reach for some veggies versus junk food.
- Keep visible – keeping fruits and vegetables visible will encourage everyone in the household to eat more fruits and vegetables.
- Keep it interesting and explore! – Variety and color are key. Try new recipes and try new vegetables.
- Frozen is better than no fruits and vegetables – frozen vegetables are easy to make when you're in a hurry and don't go bad so fast.

- Make it fun! – Adding seasonings and sauces to vegetables within reason makes it easier and tastier to eat. Dipping fruit in dark chocolate or using chile seasoning is another popular way to make fruit fun and yummy!

# DRINK UP: NUTRITION SAMPLE CHAPTER

Good Hydration

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You may have heard the rule that you should be drinking eight glasses per day of water to be well hydrated. Let's look at how you can tell if you are adequately hydrated, what beverages and foods can contribute to hydration, and are there any benefits to your health besides being hydrated? Research has shown that most men and women in the U.S. do not adequately hydrate.

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## How Much Water is Enough?

Watch the short video below and answer the questions that follow the video.



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PART II

# PSYCHOLOGY CHAPTERS



## COPING WITH STRESS

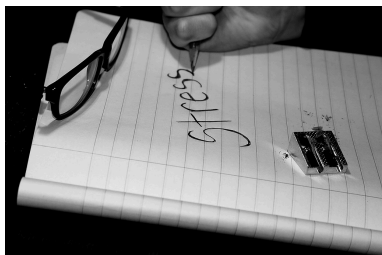
Jasmine Alyasiri, Sandy Borbolla Reyes,  
Franco Toscano, and Angelica Yescas

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### **Coping With Stress In College**

This chapter will highlight the critical topic of stress within the college environment. You will be introduced to the impact stress poses on students from a psychological viewpoint. Understanding the underlying cause of stress can be of aid to college students as they will recognize when they or fellow peers are undergoing stress. As a result, they will be able to determine appropriate coping mechanisms. It is rather evident that stress is a fairly common battle faced amongst many college students. While some may already have their own coping mechanisms, others may just now be dealing with stress more than ever before due to the new environment. On-campus resources will also be provided within the chapter to help fellow college students, like yourself, navigate stress.

## What is Stress? Do Multiple Types of Stress Exist?



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To better understand how stress affects your average college student, it is vital to comprehend its definition. Amongst researchers, the definition tends to vary due to its vague nature. Notably, we commonly use the term to

express the mental state as one becomes overwhelmed. A more fitting interpretation of the term could be described as the mental state in which results from an individual perceiving an event to be detrimental—resulting in the feeling that the demand is extraneous and cannot be met. Lack of self-efficacy is also considered to be one of the many stressors within a college environment. As a college student, you may be feeling overwhelmed with the amount of workload. You may then doubt your ability to complete specific assignments, which then emerges to what we commonly refer to as stress. Stress falls within three categories. These categories include eustress, moderate, and distress. Positive stress or eustress is quite normal and short term. It encourages us to perform to the best of our ability when faced with what we may consider to be a

threat. From an academic perspective, eustress motivates students to prepare for an exam to receive a satisfying score. Moderate stress is the healthy balance of both positive and negative stress. Mild stress is known to improve cognitive function, allowing us to be more alert and productive. On the other hand, distress relates to the surpassing of the healthy optimal level. Students who reach the peak level tend to notice a decline in academic performance as they burn out and are unable to concentrate. Undergoing constant stress can take a toll on your physical and mental health. If ignored, excessive stress can turn into an anxiety disorder of some sort. According to a study conducted in 2018, the American College Health Association reported that while 63.4% of college students had encountered overwhelming anxiety, only 22.1% were diagnosed or professionally treated. This is why it is essential to comprehend how to manage stress within a college environment before it substantially impacts your overall health and well-being. Not to worry, such topics will be discussed further within the chapter.

## **Causes and Symptoms of Stress**

Most things that put high demands on your body, both physically and mentally, can cause stress. Modern-day stress is driven more by psychological stressors.

Some students have conceptualized stress in ways that emphasize the physiological responses that occur when faced with demanding or threatening situations. Students are constantly impacted by their surroundings, which may increase their risk of becoming stressed. Physiological reactions that occur when faced with demanding situations can also occur in response to things that might not be as stressful to other people. All students perceive stress differently, so students tend to experience distinct stressful triggers. These triggers include intellectual (exams and other academic requirements), financial (allowance and logistical needs), physical (course load and deadlines), and social (teacher, family and personal relationships) stresses they encounter as they study.

Students undergo different stressors, and they all have different ways to cope with stress. A stressor would likely be viewed as a challenge for gain or personal growth. Students may see it negatively or positively, but their attitude and perceptions play a huge factor in stress. It can dictate whether or not a problem is worthy of being considered a stressor. For instance, if a student gets a zero on a test due to an absence, the student can either have a positive mentality and decide to communicate with the teacher the next morning or overthink the situation and get a bad grade. Students are additionally required to submit their assignments by a certain deadline which forces them to manage their time wisely. The ability to properly manage time and successfully turn in assignments

within deadlines will benefit an individual. Students also might study endlessly for an upcoming exam and get frustrated by their less than stellar test scores, causing them to lose motivation in their work-study. This will then result in them finding ways to cope with their problems.

Research suggests that students who are transitioning from high school to a college or university are two times more likely to face a dramatic elevation of stress levels. In the college environment, stress primarily resides from the unrealistic expectation to balance social, financial, and personal responsibilities all while maintaining the students' desired academic performance. While attempting to balance such factors, disturbed sleep patterns emerge causing physical and mental exhaustion which can be detrimental to one's health. That being said, it is rather important for incoming college students to be educated on how to avoid distress and how to recognize when they are encountering universal symptoms of stress.

More specifically, financial stability is significant for many individuals, especially students. Students are constantly trying to figure out how to cover tuition. Some students might even have financial responsibilities within their household. In many cases, these students manage to work a part-time job to manage their financial obligations. Students who struggle to manage their time for school and work deal with stress. It may even be more stressful once a student loses track and lacks time

management skills. This may cause emotional problems such as depression, anxiety, anger, etc..

The sooner a student finds a way to cope with stress, the healthier they will be. Although stress might seem like it has many negatives, there are some circumstances where it may even be beneficial. Being stressed can serve as motivation to improve the quality of that individual's life. Figuring out your symptoms can help you deal with ways to cope with stress before health problems increase. Here are some signs you may be undergoing stress.

### **Common Symptoms of Stress:**

- Chest pain
- Increase in heart rate
- Tension headaches
- Stomach aches
- Fatigue
- Difficulty concentrating
- Difficulty sleeping
- Irritability

## **Impact of Stress on College Students**

Emily Hooker and Sarah Pressman insinuate that as a student in college, many strive for three things: maintain good grades,



have an active social life, and to stay healthy. Although this may be true, in reality, the demands of being in college do not always allow for these three goals to be met. This creates instances of stress. In a study conducted in 2014, results demonstrated that individuals within the age of 18-20 had a 28.5% binge drinking rate, and individuals within the age of 21-25 had a 43.3% binge-drinking rate. College campuses — which mainly teach people between the ages of 18-25 — are infamous for substance abuse ranging from drugs to binge drinking. This form of coping is detrimental for college students physically and academically. Substance abuse can further deteriorate health with the added negative side-effects stress causes. For instance, stress lowers the strength of the immune system; it compromises one's ability to fight off germs that are frequently exposed to a college student when walking around campus. Academically, stress can also worsen grades. According to the 2010 American College Health Association, the National College Health Assessment concludes that 25 % of students reported that stress impacted their academics by lowering their grades or increasing the difficulty level to finish a course. The impact of stress on a college student should not be taken lightly as it can lead to destructive behaviors and disorders. For this reason, healthy coping mechanisms and the promotion of positive self-efficacy should be practiced.

## Coping Mechanisms and Community Resources

To prevent stress from consuming your well-being in college, it is vital to determine what coping mechanism is best effective for you. In 1984, Lazarus and Folkman established two fundamental types of coping, problem-focused coping, and emotion-

focused coping. Meaning, there are two ways an individual can go about coping. Problem-focused coping identifies the underlying source of stress, and from there, an attempt can be made to manage the stressor. Essentially, it is the initiative taken to rid the source of stress. This may be in the form of managing your time, taking extra time to study for a stressful exam, asking your professor questions for clarity, making a to-do list, asking for support when needed, taking a stress management college course, etc. In contrast, emotion-focused coping manipulates the negative feelings produced by stress into a more positive connotation. Exercise, meditation, writing out your feelings, forgiving, and allowing yourself to take a mental health day, talking amongst peers/therapists, are



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all examples of turning stress into productivity. The most crucial step is recognizing that something needs to be done in correspondence to excessive stress levels. Many students tend to keep all of their emotions bottled up because they don't necessarily know how to cope. However, it is essential to understand that colleges tend to have numerous mental health-related resources for students to utilize. Listed below are five community resources that you can resort to during stressful times while in college. Do not be afraid to ask for help when needed! Mental health matters.

- **Stress Resources:** PVCC offers a stress management course (CPD102AH) to help college students navigate stress, whether it may be academic-related or not.
- **Counseling:** If you are continually undergoing distress, Counselors are available as well. You can request an appointment with a PVCC counselor. You may also stop by the student services (KSC) building in Room KSC1220. Office hours on Monday through Thursday are from 8 am-6 pm. While office hours on Friday are from 8 am-4 pm.
- **Stress Management Counseling:** Deer Valley Counseling has offices in Phoenix and Tempe, Arizona. They provide the general public with information regarding stress management skills. If you wish to speak to a counselor about learning how to cope with stress, you can call 602-750-8051 for more information. The office

answers phone calls on Monday-Sunday from 7 am to 8 pm. To learn more about Deer Valley Counseling.

- **Crisis Text Line:** If it ever gets to the point where the amount of stress is too much for you to handle and you find yourself to be in a state of crisis, text HOME to 741741. They provide free confidential support 24/7 for individuals in need of someone to talk to via a platform most individuals feel more comfortable interacting with (texting).
- **National Suicide Prevention Lifeline:** Like the Crisis Text Line, the National Suicide Prevention Lifeline is a mental health service that aims to prevent individuals from undergoing distress to harm themselves. If you wish to speak to someone verbally, call 1-800-273-8255.



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## Conclusion

As demonstrated in the chapter, stress evidently plays a vital role in our daily lives. Whether we experience eustress,

moderate stress, or distress, the fact remains that it is relatively easy to fall within distress within the foreign environment that is college. That being said, it is essential to recognize the symptoms and coping strategies to prevent harm to your overall well-being. For any individual to succeed in college, mental health must be prioritized.

Attributions

17.

# COPING WITH MENTAL ILLNESS

Andjela Calic, Garet Haugebak, Spencer Ponce, and Sergio Lopez

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College students are faced with multiple obstacles they must overcome when it comes to mental illness. Mental illnesses or mental disorders often change and impact one's mood, behavior, and thinking processes on a daily basis. Some of the most common illnesses affecting college students include depression, anxiety, ADHD, and many different kinds of eating disorders. All of these illnesses are treatable, can be diagnosed by a medical professional, and include accessible help through multiple platforms. Someone suffering from these illnesses can obtain guidance and relief through therapeutic counseling, medication, and even by talking to a good friend.

# Depression

## What is it?

Depression can come in many different forms. This is especially true for teenagers and people in their early twenties. Research has shown that people in those age ranges are 16% more likely to get depression than any other age group. You may ask how depression impacts college students? In fact, the majority of college students are in that age range making it more likely for depression to occur. Also since the majority of college students are locked away in their rooms doing schoolwork or at work trying to afford college. They are more likely to become lonely and distant which is a big factor leading to depression. How does one know they have depression? Well, you can either self-diagnose by viewing your mood and day and comparing it to symptoms or you can see a therapist or doctor.





## What are some ways to get help with depression?

-There is the 24/7 suicide hotline which is a number to call when one is feeling depressed or suicidal where people will talk to you and guide you on what to do. The number is 800-273-8255.

-On campus at PVCC one can go to the college police for direct help. Also if it is an emergency you can call them at 480-784-0911 or non-emergency at 602-787-7900.

- Going to see a therapist can help by talking through your depression and trying to find the source.

- If you are looking for a medicine route to a fix there are many different forms of anti-depressant medications. In order to get a prescription one must see a psychiatrist and for follow-ups to make sure the dosage is correct.

## Anxiety

### What is it?

Anxiety is the body's response to stress and stress-related experiences. Fortunately, anxiety is something that's experienced by everyone in their lifetimes. For many people, the sentiments of worry come and go, but for others, it may last weeks, months, and even years, thus affecting day-to-day

life and activities. When these feelings of anxiousness begin to interfere with daily life, it is possible that there's an anxiety disorder involved. When feeling anxious, the body goes on high alert and activates the flight or fight response which is also accompanied by feelings of fear or dread about what's to come. Other symptoms include restlessness, increased heart rate, difficulty falling and staying asleep, and more. Not all people experience anxiety and its symptoms identically, therefore it's important to understand the numerous different symptoms.



## What are the common symptoms?

The symptoms of anxiety are not limited to restlessness, increased heart rate, difficulty falling, and staying asleep. Symptoms also include:

- Rapid breathing
- Increased heavy sweating

- Trembling or muscle twitching
- Difficulty focusing on things other than what is causing the worry
- A strong desire to avoid things that can spark feelings of anxiousness
- Performing certain behaviors repeatedly
- Anxiety surrounding a particular life event in the past (also indicative in PTSD)
- Digestive issues

## **Why are students faced with anxiety? What are the types of anxiety disorders?**

Anxiety is prevalent in college students for multiple reasons. Students in college are in the process of a major life transition. Not to mention the stress the academic environment instills and the difficulties of juggling extracurricular activities, having a part-time or full-time job, and managing large amounts of coursework. Despite these realities, doctors don't have a complete understanding of what causes anxiety disorders. Currently, it is believed that anxiety is caused due to traumatic past experiences, genetics, and underlying health issues. There are several forms of anxiety disorders; these include, but are not limited to:

- Agoraphobia, which is a fear of places that makes an

individual feel trapped or powerless.

- Generalized anxiety disorder, where one experiences constant worry even during ordinary activities. This is also accompanied by physical symptoms such as headaches.
- Obsessive-Compulsive disorder, which is the continual experience of unwanted or intrusive thoughts and worries that cause anxiety.
- Post-traumatic stress disorder, which occurs after an individual experiences a traumatic life event. Symptoms include trouble sleeping, disturbing dreams, and flashbacks of the event.

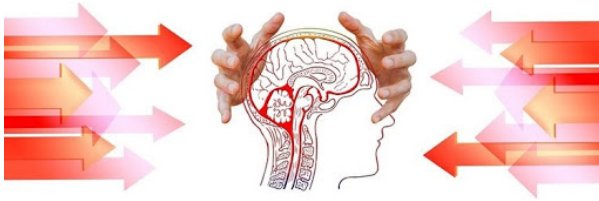
## How is anxiety treated?

If you or someone you know is struggling with anxiety and believe that help is needed, it's best to visit a psychologist to be diagnosed with the condition. If it is severe, it may need to be treated with medication that can be obtained through a psychiatrist. If medication isn't required anxiety can be treated with talk therapy alone. Sometimes it's tough to find the right therapist, but you'll know they're right for you if you feel comfortable discussing your anxiety with them. If therapy is not an option, there are at-home treatments and other coping mechanisms for this disorder. The Anxiety and Depression Association of America (ADAA) provides a directory of support groups for individuals battling with anxiety and other

mental health issues. The Mayo Clinic Anxiety Disorders page provides helpful tips for coping with anxiety, such as discovering possible triggers of stress, and learning how to manage your time wisely.

## ADHD

Attention deficit hyperactivity disorder or commonly referred to as ADHD is a neurodevelopmental disorder where individuals act impulsively and find it hard to focus and complete tasks. Individuals may also find difficulty “fitting in” when it comes to social situations. This is usually due to a lack of patience or always being in a constant state of motion.



## Types of ADHD

There are only three types of ADHD and they are as follows:

- Predominantly inattentive (ADHD-PI or ADHD-I).
  - Characterized as being easily distracted and having trouble focusing on tasks.

- Predominantly hyperactive-impulsive (ADHD-PH or ADHD-HI).
  - Characterized as talking nonstop and fidgeting while also being impatient. Oftentimes interrupt and have a lack of social understanding when it comes to social cues and non-verbal communication.
- Combined type (ADHD-C).
  - Characterized as having both (ADHD-PI) and (ADHD-PH).

## ADHD In Students

About half of adolescents with ADHD have some history of social rejection compared to roughly 10-15% of adolescents who don't have ADHD. Having trouble with social skills can make it hard for people with ADHD to ask for help when it comes to school as they often fall behind because they cannot pay attention. Students with ADHD also are at an increased risk to abuse substances such as alcohol and cannabis. With this increased rate of substance abuse getting treatment becomes even more difficult.

## Causes and Symptoms

Even though ADHD is one of the most studied and diagnosed mental disorders in adolescents there is no concrete evidence

stating what causes it. It is believed that genetics plays a key role in having ADHD though as most children who have it inherit it from their parents. It is also theorized that social factors and environment play key roles in developing ADHD as well. As for symptoms, the most common ones are

- Difficulty paying close attention.
- Trouble focusing and completing tasks.
- Shortened attention span and very easily distracted.
- Difficulty with structured skill work such as studying and lectures.
- Inability to sit still or wait.

## Treatment

As for getting help with ADHD, there are many options. Counseling is seen as the less controversial option as totally removing the negative outcomes of ADHD is almost impossible. Medication is also used as a treatment in conjunction with counseling or by themselves. Some common types of medication for ADHD are; stimulants, atomoxetine, and even antidepressants

## Eating Disorders

Eating disorders are a form of mental illness where one forms an unhealthy relationship with food and eating behaviors, whether that means too much or too little. Eating disorders affect all people, regardless of age, gender, ethnicity, orientation, or any other defining category. Eating disorders can be typically seen through one's infatuation with food and food consumption or obsessing over body weights, shapes, and sizes. Fortunately, despite eating disorders being so common and affecting anyone, they are treatable.



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### Common Eating Disorders

Although there are many kinds of eating disorders, there are a few that are seen most frequently. They consist of:



- Anorexia nervosa – Consists of one severely restricting their diet, constantly exercising and even using laxatives or vomiting in an effort to lose weight. They typically always see themselves as overweight.
- Bulimia nervosa – typically involves one eating large quantities of food, only to feel guilt over these binge-eating episodes. As a result, one quickly tries to get rid of the food through excessive use of laxatives or vomiting, or any other method to try and compensate for the food consumption.
- Binge-eating disorder – Extremely common, especially in the U.S. Involves long periods of overeating followed by lack of exercise to balance out the food consumption. Usually leads to obesity.

## Causes and Symptoms

Eating disorders can be caused by a majority of factors, most notably psychological and biological factors. Eating disorders can stem from outside influences, such as societal pressures, typically leading to depression and anxiety. However, they can also be passed down genetically, and are typically found to run in families.

## Treatment

While eating disorders can stem from, or cause other mental

illnesses such as anxiety and depression, they are completely treatable. Some common forms of treatment include psychotherapy, medications, medical care/monitoring, and nutritional counseling.



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*<https://open.maricopa.edu/scgb/?p=108>*

In conclusion, mental illnesses are quite serious and can affect others in a variety of different ways, such as the few described above. Whether that be shown in one's behavior, actions, or day to day life experiences, mental illnesses can cause drastic effects to those affected by them. While this may seem daunting, it is important to know that many others face similar situations, and treatment is readily available. Regardless of the mental illness, one may face, such as depression, anxiety, ADHD, or eating disorders, treatment is easy to find, and available to all.

## Community Resources

Paradise Valley Community College resource page with mental health websites:

<https://www.paradisevalley.edu/students/counseling/mental-health-websites>

The Anxiety and Depression Association of America (ADAA) provides a directory of various support groups for individuals battling with anxiety and other mental health issues, such as depression and eating disorders.

The Mayo Clinic Anxiety Disorders page provides helpful tips for coping with anxiety, such as discovering possible triggers of stress, and learning how to manage time wisely. The site also shows various treatment options for each anxiety disorder, and what one can expect to hear from their doctor.

The Mayo Clinic Eating Disorder Treatment Options page provides helpful treatment options, and information for those looking for different ways and options to manage eating disorders such as bulimia, anorexia, binge-eating disorder, or any other eating disorder.

The National Suicide Hotline can be reached at the number 800-273-8255, has workers readily available twenty-four hours a day, seven days a week. These workers are available to anybody who needs somebody to talk to when contemplating suicide, or just needing assistance.

PVCC Campus Police can help regarding any issues one may face on the Paradise Valley Community College campus.

The emergency number is 480-784-0911, and the non-emergency number is 602-787-7900.

Attributions

18.

# LIVING WITH LEARNING DISABILITIES

Christine Colville, Kylee Mahedy, Ryan  
Mitchell, and Anthony Gutierrez

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## Living with Learning Disabilities



This chapter will discuss a broad spectrum of situations that

come up with learning disabilities. A learning disability involves the brain's process and how it causes difficulties comprehending or processing information and may be caused by several different factors. We will also be discussing ways of treatment for kids and adults that have been diagnosed with a learning disability.

## Types of Learning Disabilities

- **Dyslexia**, also known as reading disorder, is characterized by troubles reading despite average intelligence. Problems may include difficulties in spelling words, reading quickly, writing words, “sounding out” words in one’s head, pronouncing words when reading aloud, and understanding what one reads. Dyslexia can be inherited through family genetics or developed later in life through a brain injury, stroke, or dementia. Dysgraphia is similar to dyslexia but specifically applies to the ability to write and spell.
- **Auditory Processing Disorder (APD)** is an umbrella term for various disorders that affect how the brain processes auditory information. Those with APD usually have a typical structure and function of the outer, middle, and inner ear (peripheral hearing). However, they cannot process the information they hear in the same way as others do, which leads to difficulties in recognizing and interpreting sounds, especially the

sounds composing speech.

- **Nonverbal Learning Disorder (NVLD)** is a disorder characterized by visual-spatial, motor, and social skills difficulties. NVLD may include problems drawing, writing, telling time using analog clocks, performing arithmetic, and using social skills. Tasks that require motor coordination, such as tying shoes, may also be impaired. NVLD is another umbrella term for a range of disorders that typically affect only one or two of these skill sets.
- **Autism** is a condition related to brain development that affects how a person perceives and socializes with others. Autism is held on a spectrum, meaning that if you have Autism, there is a broad category that falls into, and no two cases are the same, therefore why it is called the Autism Spectrum. Autism can cause problems in a typical day to day social interaction and communication for people who fall on the spectrum. Autism spectrum disorder diagnosis also includes several different conditions that used to be diagnosed separately, such as autistic disorder, pervasive developmental disorder, and Asperger syndrome. These conditions are examples that can be under the category of autism spectrum disorders.

## What is the outcome of putting a label on a child?



Diagnosis is necessary for a child that might have a learning disability. This topic can be controversial because labeling can harm a child through their whole life and their parents. When it comes to labeling a child, you do not think the worst when you are at the doctor. The problems come with starting school, having to tell the teachers about your child's disability. Parents also worry about their child's relationships with other kids and in a safe environment. For instance, race, in-group/out-group status, and, if present, the nature of a disability has been shown to impact evaluations of exclusionary acts. This exclusion is a big reason why labeling can affect a social relationship regarding a learning



disability—other parents’ problems and what they believe. According to research from the Illinois news bureau, they found that less than half of parents make a care plan for their child with a disability. This could be for multiple reasons for disbelief or shock of what is happening. Other causes can be that the parents do not know what to do and have to suffer from the anxiety associated with having a disability.

## Tools For Those With Learning Disabilities

While learning disabilities can not be cured, there is a wide range of tools and resources available for children and adults with learning disabilities. Standard means that may help those with learning disabilities are highlighters and other ways to color coordinate information. Organization has been proven to be helpful for those struggling with learning disabilities. Some more technologically advanced tools include speech recognition systems. These systems identify spoken words and transform them into written text. Computers have been programmed to convert text into audio. These computers help those with reading and writing disabilities. Additionally, some calculators read numbers aloud for those with mathematical disabilities, and word prediction software helps the average person and those with spelling disabilities. The use of tools

and resources may help you or someone you know get the assistance you need to perform learning tasks confidently with independence.



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*<https://open.maricopa.edu/scgb/?p=120>*

## PVCC Resources:

Disability Resources and Services: Call 602-787-7171 to schedule an appointment or email [dl-pvc-disability@paradisevalley.edu](mailto:dl-pvc-disability@paradisevalley.edu) with any questions. The Disability Resources and Services provides information and services to students with any documented disability attending classes at PVCC, including learning disabilities.

Counseling: Appointments will be conducted via telephone due to COVID-19 for the time; call 602-787-6540 to schedule an appointment. PVCC counselors are here to help through personal, career, academic, and social situations. Counselors can provide strategies and resources to help build confidence

and create an educational path that works for whatever you are struggling with.

## Outside Resources:

All sites listed below offer a broad array of options regarding tools and resources that can help adults and children living with learning disabilities and provide information for those merely wishing to educate themselves on learning disabilities.

**LDRFA (Learning Disability Resources Foundation):** The Learning Disability Resources Foundation is a non-profit organization that helps those affected by learning disabilities. This is not only including the individual with a learning disability but also parents and educators. However, their programs are not exclusive to children, and they work with teens and adults. LDRFA has a special focus on low-income households whom they work to advocate for. Along with advocacy, they provide technology access to those with learning disabilities and those who educate them. There is no cost or fee to access the services they supply.

**NCLD (National Center for Learning Disabilities):** The National Center for Learning Disabilities works to improve local and national policies on learning disabilities that reduce barriers for those struggling and increase access for all. The NCLD also publishes reports and additional resources to help with the understanding of attention and learning difficulties. Additionally, they supply several scholarships and awards for those learning issues.

LDA (Learning Disabilities Association): The Learning Disabilities Association primarily works towards research. LDA works to identify the causes of learning disabilities and encourage research efforts into recognizing difficulties.

RSF (Raising Special Kids): A label can have such a significant effect on a child throughout their life, and it can be hard to cope with it. Luckily, we have resources to guide children and future students in the right direction. A non-profit organization called “Raising Special Kids” is a very great place for every type of solution for families and children. They deal with the full range of disabilities from birth to the age of 26. If you want to find more information on this organization, click on <https://raisingspecialkids.org/> to access more information about what they do.

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19.

# FRIENDSHIPS

Edgar Cardona, Tyler Carreon, Eli Garrison,  
and Mateo Lopez

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## Intro

This chapter will be covering how to create and maintain healthy friendships. It will define friendship as well as explain what to expect, how to make friends and where to find them, the give-and-take aspects of supportive friendship, what contributes to a friendship's success, and the changes having friends will make in your life and health. This chapter also touches on how self-confidence and authenticity affect your ability to connect with others. Finally, this chapter will provide resources and suggestions for help finding like-minded people on campus.

## Definition of Friendship

What is friendship? Many people view the term friendship as being in close relations with someone or knowing them

on a deeper level than just base material. Friendship is about that desire you feel to interact with another person, it's about knowing and supporting another's experiences, thoughts, and goals. Also feeling that sense of belonging, connection, Having the same interests, hobbies, ideas, culture, etc., anything that can connect you to someone else.



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Sometimes though, friendships are tougher to create than others. Some people can just instantly connect with one another and build a relationship right off the bat, while others require more time and effort to start. When people share the same interest like a hobby or goals can lead to a strong connection which leads to a friendship. Although those are not the only reasons why people make friendships. Life experiences, same stages of life, similar background information, cultures, etc... are also factors that would

typically create a strong friendship. Although not only because you shared these same situations means that you would create a fast and strong friendship, it normally takes time to get really deep. But don't lose hope! If you like someone or want to get to know them it is still possible, all you have to do is put in that time to want to make it work. Some of the strongest relationships are from being around the longest, so don't feel like you need to have the best relationship with someone right out the bat. It will come with both time and effort, with those almost any person you meet has the potential to become a good friend.

## How to Make Friends

As rookie and veteran college students begin to arrive and settle on campus, one of the first thoughts on their minds is making connections with other individuals. Many college freshmen leave the comfort and familiarity of their high school and people they've known for many years, and making new friends in a strange place can be intimidating. Many factors might play into it such as homesickness, not knowing who you are, being more introverted, and having little to no confidence. Remember, everyone has troubles like these in some way. Luckily, colleges have many opportunities for students to meet new people and create those much-needed new connections.



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Experiences such as joining a sports team or attending a sporting event, joining clubs and other on-campus organizations, rooming with others, and even being more active and open in the classroom can help. But there are other ways too. There are many tips to get you started on your friendship journey and one of the first ones is realizing your fear is in your head. Realizing that meeting new people shouldn't be seen as a negative experience, but one to be excited for. Most people aren't worried about you making a bad impression, they're just trying to make a good one themselves, so be positive and get out there. Another tip is to be open. Don't hide who you are as a person from people and don't judge others for who they are either. Treat others the way you'd want to be treated and everything else will fall into place. Everyone has flaws and everyone has parts of themselves they'd



rather hide, that's part of being human. Always be willing and open to new things and meeting new people, and the rest will just come together. Trust that making friends can be easy and fun!

## **The Benefits and Consequences of Friendships**

When it comes to success and happiness in life, it is without question that social interaction plays a great role in it. Arguably one of the most important social relationships one can have could be that of friendship. Human beings, being the social creatures they are, require social interaction and thus form friendships naturally to fulfill that need. Friendships—while a key part of having a healthy and happy life—require a great deal of commitment to maintain and create them, can be extremely varied, and run the risk of becoming soured or detrimental. So is it worth the risk?



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First and foremost, what one has to identify are the benefits of having friendships with others. Becoming a friend of another person can become an outlet of expression that was inaccessible prior. Having a friend means having an intimate relationship in which one can confide in another with their worries, thoughts, and ideals. While the way this is expressed can vary slightly by gender, where men share information more freely, provide solutions, or focuses more on activities instead of arguing about problems or emotions meanwhile women tend to focus on sharing weaknesses, emotions, or problems, it is still present regardless of sex. Friendships provide numerous mental benefits. According to Mayo Clinic, friendships can increase one’s sense of belonging and purpose, boost one’s happiness, reduce stress, help with coping with trauma, and encourage positive life choices. This is not free, however, with

being a friend to another individual being quite demanding and calling for a significant amount of maintenance.

On the other hand, what is demanded of a person as a friend is numerous, and the inability to fulfill these conditions usually leads to either quick falling out in the relationship, or the friendship wearing away over time. As a friend, one takes on a bevy of responsibility. Some of these responsibilities are a willingness to listen to other's problems, positive reassurance to the friend, guiding them on the right path, and having time available for spending time with them. One of the most important factors of maintaining or even creating friendships is physical closeness.



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Being near someone physically is pivotal in creating and maintaining friendships and romantic relationships where physical nearness is a significant factor in the development of

relationships and can serve as a very effective means of furthering these relationships. With proximity being both literal and metaphorical. It is hard to truly support and bond with your friends if they aren't close enough to see them often. proximity gives us the opportunity to get to know a person more deeply, it could result in a friendship or intimate relationship. Proximity is not all about geographic distance, is about functional distance or the frequency with which we cross paths with others. which effectively says that the higher the number of times we interact with people, the higher the chance of befriending them and/or becoming better friends with them goes up. The correlation between physical proximity and better quality friendships is significant.



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So, friends who are attending other schools, already in their careers, or are long-distance are fine, but try to make some

friends at your own school and in your classes so you have a support network that can be there when you need them.

## Conclusion

In summary, friendships are complicated but not impossible. To receive you must first give. Keep that golden rule in mind and keep yourself open-hearted and open-minded and before you know it you will have supportive friendships. You can't expect others to be perfect friends just as they can't expect the same from you, everyone has bad days so support them through it. Remember, part of life is having both good and bad experiences. Learn from your mistakes, don't dwell on regrets that aren't directly impacting your day today, and trust that even if the friendships you wanted aren't a part of your life now they're somewhere down the road waiting for you to make that leap and put yourself out there.



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## Community Resources

- **PVCC Clubs Page:** Your one-stop shop for sniffing out other students with similar interests. An exhaustive list of all school-sponsored clubs (or your first step to starting your own), a blurb explaining each club’s purpose, and how to sign up. Find it all here.

- **PVCC Events Calendar:** The calendar that tracks every event by PVCC, be it guest speakers, admission deadlines, club meetings, or performances by your very own student artists. Consider adding it to your school email's calendar for efficiency if you find yourself checking it often. Find this gem [here](#).
- **PVCC Athletics Page:** If you're a competitive person, want to try something new, or if you already have a penchant for physical activity then this is the page for you. Includes all sports, how to join, current news and archives, and a place to follow the Puma athletics department on Twitter! Find out more about all that good stuff [here](#).
- **PVCC Campus Life Page:** The central hub for all PVCC campus information. You can get to the pages for activities like athletics, performing arts, dining, the library, and many more. Find it [here](#).
- **PVCC Counseling Page:** If you need a little push in the right direction or just someone to talk to, here's where you find it. These wonderful people do not provide therapy but that doesn't mean they can't help with some of the social, personal, or career hesitations you may have. Don't be afraid to ask for help when you need it. Reach out to them [here](#).

# COPING WITH LOSS

Maddie Morris, Rhianna Hernandez, Katya Romero, and Faith Danford

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Loss is a significant but devastating part of life. Loss is defined as harm or distress that comes from losing someone or something. It can be challenging when a person is in college since it is already a confusing and transitional part of life



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where one is trying to essentially figure out the rest of their life and who they want to be. While there are many types of loss, such as death, loss of friendships, the end of a relationship, and more, it is typical to go through the same stages of loss or grief to help cope. It is also crucial to utilize the resources offered at your college when going through hard times like loss. No matter what someone may be going through, it is imperative that you take the steps needed to heal and be able to move on.



## Stages of Loss

Everyone goes through at least one type of loss at some point in their life. When experiencing a form of loss, a majority of people will go through certain stages to help them cope. These five stages of loss/grief were first introduced by a Swiss-American psychiatrist in 1969 with her book, *On Death and Dying*. Keep in mind that not everyone will experience all five stages, and not everyone will go through the phases in the same order.

The stages of grief are as follows:

- Denial- This stage is usually a temporary defense mechanism. A common phrase people say at this stage is, “This is not happening to me.”
- Anger- Anger usually comes after the realization that denial cannot persist. People in this stage often ask themselves, “who is to blame.”
- Bargaining- This stage is where people end up trying to negotiate for more time, usually pleading to a higher power. Common phrases are, “I will do anything for...” and “I will not do this anymore for...”
- Depression- The depression stage is when individuals recognize the current situation but become overwhelmed with sadness. Most people will say, “I miss my loved one; why go on?”
- Acceptance- This is the last stage people tend to go

through. This is where people will accept the inevitable future.

Although these stages are generally associated with the loss of a loved one, it can be applied to any type of loss. It could include the loss of a job, the end of a relationship, or any other life-altering change.

## Types of Loss



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As someone goes through their life, especially navigating their way through college, they may be faced with a sudden loss of some sort. As a college student, there are many losses one can go through,

the loss of a loved one, a pet, a scholarship, a job, or housing. Paradise Valley Community College offers a variety of resources that can help support their students as they make their way through the hardships they may be facing. They provide free counseling, the guidance of generous and caring advisors, a plethora of scholarships, and a fantastic tutoring program for those struggling with school. As college students, we are most likely to go through the death of a loved one or the passing of a pet. These kinds of losses are heart-wrenching and

can take years to truly accept this loss and move on. It is important to remember that people cope differently depending on their loss and their mental state through the process. Regardless of the struggle a person is going through, they are all valid, and the way someone copes is reasonable, too.

## Coping Strategies

Going through a loss can cause a huge emotional impact on a student's everyday life. Whether it is a loss of someone close to you or a personal loss, it can affect you just as intensely. Grief is the number one reaction to loss. You can experience anxiety, headaches, chronic fatigue, changes in appetite, frustration, and many more struggles. It is normal to encounter these feelings after a dramatic life change, but learning how to handle them can benefit your life. Strategies that can help you through this process include breathing exercises, taking steps to find support, and taking care of yourself. It can be hard to focus on yourself during a time like this, but it is so crucial that you do not neglect your own needs. You can engage in activities that allow you to feel happiness, create a routine that provides structure, eat right and drink lots of water, and surround yourself with a positive environment. You also have the choice to seek therapy or even group therapy if needed. Regardless of how you choose to cope, taking steps towards a goal is the best thing anyone can do.

## Local Resources

Some resources provided may help you through these emotions during school at PVCC listed below:

- **Mental Health Support:** The counselors at PVCC provide a safe environment for students who can feel heard and share their personal stories with no judgment. They are there to help you through your personal, academic, and career issues. While they do not conduct therapy, they do help you learn more about yourself and identify coping strategies to emerge with enhanced self-confidence and a clear path. Although the website provides useful information, there's another option to seek one-on-one help through the KSC building, Room: KSC1220.
- **Financial Aid Help:** Some students can experience the loss of a scholarship, money, and housing. PVCC provides financial aid to eligible students to help pay for their educational expenses, including tuition, program and course fees, books, and living expenses. Their knowledgeable and friendly staff can provide information and guidance to students and families on understanding what aid is available, how to apply, and how to remain eligible for support throughout your educational career.
- **Tutoring Help:** As a student, it is critical to stay on top

of your classes and feel successful with your education. However, some internal problems can affect our lives and can cause us to fall behind. PVCC provides tutoring for those who need extra help and strive to pass their classes. Paradise Valley Community College offers many different types of tutoring for specific needs and provides an easy way to make appointments with specific tutors.

- **The Crisis Text Line:** The Crisis Text Line is a free 24/7 support for those in a crisis. All you have to do is text 741741 from anywhere in the US to get in contact with a trained Crisis Counselor. Their number one priority is to protect personal data. The Electronic Privacy Information Center called them “a model steward of personal data” in 2018. Users can feel comfortable talking about their problems with trusted counselors. They have so many positive reviews that show how they saved millions of lives.
- **Food Help:** Loss of money can affect a student tremendously. With no money, you cannot provide yourself with food, which is a universal struggle students go through. The College and University Food Bank Alliance (CUFBA) makes it their mission to end college student’s hunger. They are a professional organization of campus-based programs focused on alleviating food insecurity, starvation, and poverty among college students in the United States.



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## Conclusion

Whether you have lost a loved one, a job, a valued relationship, or a pet, the stages of loss are a very real and crucial process to go through to find peace, as well as helpful and healthy coping strategies. If you are struggling, it is advised that you seek help from any of the resources available listed above. No matter the significance of the loss, you are not alone, and assistance is accessible all around you. Just take that first step to find it.

Attributions

21.

# SEXUAL HEALTH

Ally Arroyo, Daniela Vasquez, Andi Luca,  
and Kailyn Sanato

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## Sexual Health



## What is sexual health?

Most would believe that sexual health only has to do with the transmission of diseases or merely having a dysfunction; however, this is untrue. Sexual health is the physical, emotional, mental, and social well-being concerning sexuality. When talking about sexual health, people usually feel embarrassed and ashamed because they focus more on the connotation of the word sex. It is taboo for many to discuss, but this makes sexual health so much more important. Sexual health can be an umbrella covering plenty of issues such as sexuality, gender, relationships, sexually transmitted diseases, and many more. In this chapter, we will be discussing and learning more about the benefits of being more knowledgeable of one's sexual health and how to determine if one is, in fact, sexually healthy. This section will also cover the physical and emotional effects of sexual abuse and sexually transmitted diseases.

## Are you practicing sexually healthy habits?

For one to consider themselves sexually healthy, they must first be able to approach the topic respectfully. A sexually healthy person is someone who can experience sexual pleasure, are satisfied, and are intimate when they feel like having these types of experiences. However, this is not the only way. There



is a whole aspect of sexual health that is commonly ignored because of its taboo nature. A sexually healthy person must also openly communicate with others, such as their partners and their local medical providers whenever it is needed. Someone is also considered sexually healthy with the relationship they have with themselves.

Most sexual acts are between two people; however, for one to feel comfortable with doing such acts, they must first feel comfortable with themselves. Accepting one's body and having a sense of self, can help people create a safe environment for them to unapologetically express themselves. This directly connects to someone's self-esteem and self-worth. These ideas are essential when talking about sexual health. It allows a person to know what they want from their partner and ensure that safe sex is practiced, without any coercion or violence.

Furthermore, to be sexually healthy it is essential to know that when talking about sex, it is nothing to be ashamed of. When participating in sexual activities with yourself or others, it is critical to keep in mind that it is normal to experience pleasure. When practicing safe and healthy sex, there can be a lot of positive benefits that come from it. Some health benefits associated with sex include the release of stress, lower levels of depression, improvements in cardiovascular health, closeness to a partner, a greater understanding of self, and increased self-confidence. When participating in sexual acts with someone, it can positively boost your self-esteem and bring confidence to your everyday tasks. Having safe and consensual sex allows

one to be more aware of their mind and body. There should be no shame in that. Since it is an activity that almost everyone around the world participates in, we must all stay safe while enjoying these activities.

## STIs



Being knowledgeable and taking responsibility are also vastly important parts of being sexually healthy. One must go into any type of sexual activity with the knowledge of the consequences and take any, if not all, precautions to be safe during these activities. Precautions such as using protection during sex, researching birth control options, and, most notably, talking with your partner and healthcare providers. All in all, safe sex is healthy sex. When discussing protection, most people think about the transmission of sexually transmitted infections (STIs) or sexually transmitted diseases (STDs). STIs can be bacteria, parasites, and viruses. The transmission of STIs is a hugely important global health priority because of its effects on any person. Along with devastating physical effects, STIs can cause psychological effects such as; frustration, anxiety, fear of rejection, anger,

the feeling of isolation, guilt, and, most importantly, a sense of disgust in themselves or contamination. These adverse psychological effects could potentially be more important than the physical impact of STIs.

## Sexual Abuse



Personality Disorder



Panic Attack



Anxiety



Sleep Disorder



Depressive



Social Anxiety Disorder

Sexual abuse can be defined as unwanted sexual activity where perpetrators use force and violence with victims who do not consent. Sexual abuse is a critical topic when talking about sexual health. It's an issue that can happen to anyone regardless of their age, gender, race, or sexual orientation.

While in college, there have been multiple studies that show that women from the ages of 18 – 26 are the most targeted victims. Though sexual abuse can happen to anyone, there have been studies that say one in every five women will be targeted for sexual abuse while in college or other higher levels

of schooling. Those who are sexually abused are known to have effects such as a change of personality and psychological trauma that can last a lifetime. Other detrimental effects include depression, anxiety, post-traumatic stress disorder, loss of self-confidence or self-esteem, addiction, and suicide. Unfortunately, during this age, many victims of sexual assault do not report the incident and suffer from these personality changes. Sexual abuse is also difficult to prove because of the lack of witnesses. Because of this, there are many reasons why someone may not come forward to report their abuse or even share their experience with close friends or family members. Many victims believe that they cannot take action and speak up about their sexual abuse simply because there is no proof. Even when some do try to take action and speak up, they are often ignored. It has been shown that one reason why someone might not speak up is self-blame. This causes the victim to ask questions about what they did wrong and can lead to them blaming themselves for what happened. When being a victim of sexual abuse, one can often feel lonely and disengaged from everyday life. In turn, this makes the idea of speaking up intimidating and distressing. Not to mention, there is also the fact that someone may not report sexual abuse because they simply did not know it was abuse. There have been reported cases of 60.4% of women that have experienced an incident of rape and didn't realize it even though it fit the definition.

Rape is an unwanted sexual experience obtained through force or a sexual experience they did not consent to because they were incapacitated. This fact is important to bring to light because it suggests that the awareness of rape is not widely known and could hinder the data to finding the true occurrence rate of these types of experiences. So when reporting sexual abuse, it is important to remember that it takes an enormous amount of courage to do so, and it is the first step in the right direction. While reporting your experience, it is crucial to be persistent and never stop looking for an ally until your voice is heard. Luckily here at PVCC, your voice will always be heard, and you're able to find the help you need from staff, educators, campus officers, and other students. Remember, you deserve justice, strength, or simply peace of mind for what you've been through.

## Conclusion: The Importance of Addressing Sexual Health On College Campuses



For many students, college is a time to learn about themselves and their relationships, including their sexual relationships. This means that sexual health is a super important topic that should be openly discussed in college for the health of all students. Students should make sure that they are communicating with their partners and asking questions such as, “Are we monogamous?”, “Are you willing to get tested?”, and “How do you feel about contraceptives?” in order to practice safe sex. Students should also take all precautions to stay safe and healthy during any sexual activity. Lastly, students should feel comfortable enough to talk to those around them for the best possible comfort and advice. This comfortability needs to be present at home with family and friends or on campus with counselors willing to help. This connects to the fact that most sexual abuse, harassment, and assault occurs on college campuses and is only increasing.

These acts must be addressed on college campuses for students who find themselves or others in these horrific situations. There is a severe lack of awareness and education on sexual abuse, assault and, harassment on campuses that lead to many college students being unaware of the available services and resources that their college might offer, such as contacting their counseling advisors. Being a college student proves itself to be an already difficult task and anyone can imagine how much harder it would be for them to have to deal with any troubles in their sexual health alone.

#### Resources

- Counseling: Paradise Valley Community College has free access to personal counseling that will help you with college. However, the counselors are not permitted to do therapy, but they assist students in how they can cope with stress and learning more about themselves. All appointments conducted through a phone call, just dial 602-787-6540 or email [counseling@paradisevalley.edu](mailto:counseling@paradisevalley.edu)
- Back to Planned Parenthood Arizona, Inc.: Planned Parenthood Arizona, Inc. is the biggest sexual health organization in the state of Arizona. It educates every individual about their sexual health and promotes healthy sexual habits. To book an appointment, call 1-800-230-7526.
- National Sexual Assault Hotline: RAINN or Rape, Abuse, Incest National Network is an anti-sexual

violence organization and it controls the National Sexual Assault Hotline. If you need assistance, call 800-656-HOPE (4673). The hotline is available 24/7 and you can chat them through [online.rainn.org](https://online.rainn.org)

- **Bikers Against Child Abuse (B.A.C.A):** This group is passionate about creating a safer environment for abused children. They pride themselves on being advocates to end child abuse and give children their life back. To see what they're all about or to contact B.A.C.A visit their home page.
- **National Sexual Violence Resource Center:** The National Sexual Violence Center is a website that has a number of resources for specific groups such as sexual assault survivors, friends, family, advocates, educators, and media, press. You can also find help, get involved, and donate through the website.





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Attributions

# FINDING A CAREER PATH

Jenna Perlow, Sarkis Hermez, Natalia  
Acevedo, and Donovan Oneal

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## Outline Your Career Goals

When beginning your journey to finding a career path, you must first outline your career goals. Having set goals can help you know you are on the right track, whether it be the amount of money you make or the experiences you have with the job. A few examples of career goals are to increase knowledge, increase earnings, be more active in the workplace, or obtain a higher position. These are just a few of the nonspecific ones, but they are your personal goals and you can customize them to your interest.

When designing your career goals you also have to make sure you will be motivated to fulfill them. Your motivation to achieve your goals can either be intrinsic, extrinsic, or both.



Intrinsic

motivation brings personal satisfaction. You are motivated because you are bettering yourself. Extrinsic motivation is to receive something from others. You are motivated through a reward or punishment. Motivation plays a huge role in your career path, without it we lose satisfaction and commitment to our career.

There are many different goals to set for yourself, they can be big or small and should be personal to you. Your goals should cater to your personality, values, and interests. Depending on your personality it may be harder to achieve some goals over others so make sure you set challenging goals that are in your comfort zone. Values also come into play when setting goals because you have to make sure you are not bending your beliefs to accomplish your goals. Finally, make sure you are interested in your goals, if you are not interested in them then either it should not be a goal or you are heading in the wrong direction.

# Discovering Your Personality

### What's Your Personality Type?

Use the questions on the outside of the chart to determine the four letters of your Myers-Briggs type. For each pair of letters, choose the side that seems most natural to you, even if you don't agree with every description.

**1. Are you outwardly or inwardly focused? If you:**

• Consider the outside  
• Value interacting  
• Like to be the first to start  
• Want to be the center of attention

**Then you prefer**  
**E**  
Extroversion

**2. How do you prefer to take in information? If you:**

• Are interested in the way things are  
• Like to see things in action  
• Prefer to learn by doing  
• Like to see things in a practical application

**Then you prefer**  
**S**  
Sensing

**3. How do you prefer to make decisions? If you:**

• Make decisions in an impersonal way, using logic and reasoning  
• Value fairness, balance  
• Like to make choices and put out the best in people  
• Can be described as even, impartial

**Then you prefer**  
**T**  
Thinking

**4. How do you prefer to live your outer life? If you:**

• Prefer to have your options open  
• Like to see and deal with the possibilities  
• Like to improvise and make things up as you go  
• Are spontaneous, enjoy surprises and new situations

**Then you prefer**  
**P**  
Perceiving

**I**  
Introversion

**N**  
Intuition

**J**  
Judging

**F**  
Feeling

<b>ISTJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ISFJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>INFJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>INTJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.
<b>ISTP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ISFP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>INFP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>INTP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.
<b>ESTP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ESFP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ENFP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ENTP</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.
<b>ESTJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ESFJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ENFJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.	<b>ENTJ</b> Practical, organized, logical, and systematic. They are good at following rules and procedures. They are often seen as the "straight shooters" of the Myers-Briggs types.

Picking a career is a major part of everyone's life. Personality plays a huge factor in deciding what career is right for each individual's lifestyle. A lot of studies have shown that people who hold characteristics and tasks related to their personalities are more productive, happier, and more successful. People shouldn't waste their time and money going into a career that makes them feel unhappy and unmotivated to go into their job every day. For example, extroverts tend to usually work in a job involving communication and sales. On the other hand, introverts usually stick to working in environments with computers and technology. If an extrovert was to have an office job sitting behind a computer all day, they wouldn't be as motivated or as productive, because they are so unsatisfied with their environment and their career. Whether we're choosing a job, a partner, or even a home, our personalities lead people in the right direction and shape the paths that our lives

take. There are four reasons why your personality should fit your career: better culture fit, better job performance, higher job satisfaction, and it's easier to identify your strengths and weaknesses. You can find out a lot about your personality by simply doing self-reflection, taking personality tests, and understanding what different personality traits mean. A helpful resource in finding the appropriate career for your personality is the Myers-Briggs Type Indicator. It's a test on how people perceive the world and make decisions. Knowing your personality type can give you important information about yourself, like what motivates you the most or when you're most efficient and productive.

## Identifying Your Core Values

When it comes to finding a career, many pay attention to the amount of money they will make. Neglecting how their job can make them truly feel. Although money is a strong motivation, you will not feel true fulfillment out of money. To feel fulfilled in a work environment, you have to do what makes you happy. This means taking a look at your core values. Core Values are the fundamental beliefs of a person. Thus, these principles dictate our behavior and can help us decipher between right and wrong. When you define your personal values, you discover what's truly important to you. You can find what is important to you in a few, easy steps: 1. Write

down your values 2. Consider the people you most admire 3. Consider your experiences 4. Categorize values into related groups 5. Identify the central theme 6. Choose your top core values. Your values can be a few simple words such as growth, intelligence, friendship, teamwork, happiness, etc. It is best to find a career path that fits your criteria. If we overlook these values, our mental, emotional, and physical state can be put at risk.

## Taking Note of Your Interests

This step varies widely from person to person. You most likely will have various interests that simultaneously provide you with contrasting career options. Investigate your past volunteer experiences, favorite pastimes as well as any other interests that can help you identify specific fields or specialties that you enjoy. A common exercise people practice to help with their personal career search consists of constructing a list of ventures, hobbies, projects, and/or occupations that you enjoy. This may help you focus on specific careers within your search.

Now that you have examined your hobbies, interests, and pastimes as well as created a list of such things you may begin your job search. It is recommended that you first look for “seasonal” or “short-term” positions and opportunities when exploring new occupations. Remember that volunteering is

another great way to explore new career paths. Your unmediated encounters and experiences will help you recognize the field or occupation that best suits you. If you happen to be a student or are currently employed, consider taking certification or a course that is required by one of your fields of interest. Participation in such activities will help you determine whether the career is one that you would enjoy or not.

Keep in mind that finding out what you don't enjoy is just as productive as finding out what you do. Discovering that one or more of your fields of interest is not best suited for you is most certainly not a setback, but instead a step forward. Do not be afraid to put yourself out there and get involved.



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<https://open.maricopa.edu/scgb/?p=319>

## Conclusion

In conclusion, when finding the right career path, you need to outline your career goals, discover your personality, identify your core values, and take note of your interests. Doing so will

help you achieve more satisfaction within your career and live a happier life. Finding the right career path for yourself is a huge decision to make and there are many resources to help when deciding on different pathways.

## Community Resources

Career Services Center: <https://www.paradisevalley.edu/students/career-services>

Degrees and Certificates: <https://www.paradisevalley.edu/degrees-certificates>

Employer Connections and Resources:  
<https://www.paradisevalley.edu/students/career-services/employers>

Attributions



23.

# DISTRACTED DRIVING

Summer Johnson, Cody Berlin, and Joshua Altmann

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## Intro

Distracted driving caused more than 2,800 deaths in 2018, and this number only continues to rise. This chapter will explore the psychological problems attached to distracted driving, including things such as texting and driving, the effects that substances may have when used on the road, and the generational differences in attention span. Furthermore, these three topics will briefly dive into how the brain multitasks, our states of consciousness (more specifically, how they affect the way we drive), and lastly lifespan development.

## Texting and Driving



The first issue that will be discussed in this chapter is the use of phones while behind the wheel. It's general knowledge that texting and driving is very dangerous, hence why it's illegal in forty-eight states. However, is there anything in Psychology that could describe why it is that we can't text and drive simultaneously? In fact, there is. According to Frances Freidrich from the University of Utah, cognitive distractions cause a lack of awareness of what's in front of us. There have also been studies using eye-tracking devices that have proven the fact that when we are texting while driving, this slows our reaction time and thus can cause many accidents. Although humans tend to be good multitaskers, our brains are not meant to be actively focused on more than one thing at once, so focusing more on one thing slows down how fast we can react while doing the other.

## Substance Use While Driving

The next large



est cause of distracted driving is drug and substance usage. How do these substances affect our driving? The most used drug taken before someone drives is alcohol. Alcohol is considered a depressant, which can cause sleep, motor disturbances, memory loss, and death. Another common drug that can easily impair driving is a hallucinogen like marijuana or LSD. These can cause perceptual changes either mild or intense depending on the type, strain, and method of ingestion. Stimulants such as cocaine, amphetamines, and methamphetamines (also known as meth) cause increased alertness, euphoria, agitation, paranoia, sometimes hallucinations, heightened sensitivity to physical stimulus, and death. Finally, opiates like opium, heroin, fentanyl, morphine, etc. can all cause pain relief,

euphoria, sleepiness, and death. These effects are harmful to the user and those around them because they are less aware of their surroundings while driving. Peer pressure and parties are dangerous activities for young adults and specifically teenagers, and it is even more necessary for people to know the effects of these drugs as they grow up so they can learn to avoid them.



## Generational Differences that Affect Driving

The last major topic discussed in this chapter is how generational differences may actually affect how we drive. When adults drive, they most likely have been driving for a while and don't have to pay quite as much conscious attention to the road in order to get to their destination unharmed. However, most teenagers don't have this ability yet and we

are also more likely to be driving with friends (which can obviously be distracting) or doing any number of things that could be keeping our attention off the road in front of us. According to Chapter twelve of our PSY 101 textbook, “Social roles are defined by culturally shared knowledge. That is, nearly everyone in a given culture knows what behavior is expected of a person in a given role.” This being said, it can be assumed that a teenager driving with friends would act much differently from a teenager driving with their parent, or even a parent driving with an infant in the backseat. Teenagers are more likely to be talking, changing playlists on their phone, or just overall making bad decisions when trying to entertain their friends in the car. All of these distractions can be incredibly dangerous, especially for teenagers who are less-experienced behind the wheel.



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You can view it online here:

<https://open.maricopa.edu/scgb/?p=94>

## Concluding Thoughts

We think it's important to leave with some helpful tips to avoid accidents and overall distractions while driving. It's a good idea to put your phone away and on Do Not Disturb while driving, or if you need it for things such as GPS, keep it out of your reach so that it causes fewer interruptions in your driving. Don't do drugs, especially before you drive, and if you know that you will be or already are, have a designated driver or take an Uber. Taking simple safety precautions as well as being aware of yourself and your surroundings while driving can dramatically reduce car accidents, and lead to a much happier, safer experience on the road.

### **Below are some helpful community resources:**

- **CARE and Conduct Office-** The CARE and Conduct Office at PVCC is a great place for students to learn about making ethical choices to help their education. They can help students who are having issues inside and outside the classroom and whether it's behavioral or lack of resources. Their webpage can be found [here](#).
- **SAMHSA National Helpline-** Also known as Treatment Referral Routing Service is a confidential, free, 24-hour-

a-day, 365-day-a-year, information service, in English and Spanish, for individuals and family members facing mental and/or substance use disorders. This service provides referrals to local treatment facilities, support groups, and community-based organizations. Callers can also order free publications and other information. More information can be found [here](#).

- EndDD- EndDD is dedicated to ending texting and driving and saving lives through advocacy, education, and action. They have given talks and presentations to thousands across the country. Learn more about the dangers of distracted driving from them. Their webpage can be found [here](#).
- Stop and Go Driving School- There are several different courses offered here like defensive driving, traffic survival school, and driver's education. With their certified instructors anyone can learn driving. More information can be found [here](#).
- Public Safety Office (PVCC)- The public safety office at PVCC gives helpful guidelines and information about how to stay safe on campus and protect yourself from dangerous situations. Their phone number is 602-787-7900.

## Attributions

24.

# SUBSTANCE ABUSE

Juliana Black, Ashley Regan, and Jianing Zhang

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## Introduction

Substance abuse is a complex disease that heavily impacts a large variety of people. It can simply be stated as excessive use of psychoactive substances, which include alcohol, prescription drugs, and illegal drugs. The dependency can lead to a variety of consequences, but the most concerning side effect is the potential for emotional, physical, and social harm. If you are suffering from substance abuse, please seek help immediately. You are not alone, it can and will get better. Addiction is a lifelong disease that requires active, committed treatment.



## **What is substance abuse? What does it look like? Who does it affect?**

Substance abuse impacts everyone- age, race, and status simply play no factor in this heavy dependency. The typical age range for substance use is 15- 65 years old. There are several factors that can determine one's resilience for turning directly to a substance when hardship presents itself. College students tend to use stimulants and depressants, such as alcohol, marijuana, prescription medications, and caffeine. Internal and external stressors can increase the likeliness of a true dependency resulting from frequent use. Students, young and vulnerable adults, turn to easily accessible substances that offer no judgment to cope with the extreme stress new experiences can bring on. This can ultimately lead to physical and psychological pain- deteriorating the mind and body of the user. Any recreational drug use has detrimental effects. The brain of a college student which is not nearly fully developed faces permanent damages.



A syringe, four small glass bottles with clear liquid, and pills are scattered on a ground

## Drugs & Effects

### Drug Class: Opiates

- **Examples**-Heroin, Morphine, Fentanyl, Opium, Oxycodone, Vicodin, and certain prescription pain relievers
- **Physical Effects**-Decreases pain, pupil dilation, gut motility, and respiratory function
- **Psychological Effects**- Doses can cause: pain relief, euphoria, and sleepiness
- *High doses can result in death due to decreased respiratory function*
- *Addictive in certain cases*

## Drug Class: Stimulates

- **Examples-** Cocaine, Adderall, MDMA (such as molly), Methamphetamines, Amphetamines, Caffeine
- **Physical Effects-** Increased heart rate, blood pressure, and body temp.
- **Psychological Effects-** High doses can: increase agitation, paranoia, anxiety & may cause hallucinations and seizures & Low doses can: increase alertness, cause mild sensation of euphoria, decrease appetite
- *If a user takes a high dose of MDMA brain toxicity and death can occur*
- *Addictive in certain cases*

## Drug Class: Depressants

- **Examples-** Alcohol, Benzodiazepines (such as xanax), Barbiturates
- **Physical Effects-** Decreased heart rate, blood pressure, and respiratory functions
- **Psychological Effects-** High doses can: Induce sleep, cause disturbance of motor functions, and memory loss & Low doses can: Increase relaxation & decrease inhibitions
- *High doses can cause death*
- *Addictive in certain cases*

## Drug Class: Hallucinogens

- **Examples-** LSD, DMT, Peyote, dissociative anesthetics (such as PSP & ketamine), marijuana
- **Physical Effects-** Increased heart rate and blood pressure that can dissipate over time
- **Psychological Effects-** Doses can cause: Mild to extreme perceptual changes
- *Variability in effects is based on drug strain, the method of ingestion, and individual differences*
- *Addictive in certain cases*



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<https://open.maricopa.edu/scgb/?p=124>

## Side Effects of Substance Abuse

Drugs can cause large amounts of dopamine, which is a neurotransmitter that helps people regulate mood, motivation, and a sense of pleasure. Drugs can change the way the brain works and interfere with people's ability to choose,

leading to a strong desire for drugs. Over time, this behavior may turn into substance dependence or drug addiction. Addiction can impair cognitive control and inhibitory control of behavior. Substance abuse can lead to numerous physical, social, and emotional harms. The long-term effects of substance abuse will vary depending on the drug being abused. Common effects of drug abuse include liver disease, hepatitis, HIV, trauma, cancer, heart attack, seizures, and even death. Drug use can also lead to unemployment, divorce, domestic abuse, and bad relationships with loved ones. For students who use drugs, this may result in lower grades, lower attendance, and lower academic performance.

Two hands float in a black background and hover over the sides of a pill bottle. Pills are scattered in front of the bottle.

Two hands float in a black background and hover over the sides of a pill bottle. Pills are scattered in front of the bottle.

## The Psychology Behind Addiction

If an addictive drug is used repeatedly, the user may develop a codependent relationship with the effects that the substance can elicit. Certain substances evoke the dopamine transmitters in the brain which then stimulates its “reward systems”. This process can lead to a build-up of tolerance and dependence on

a particular drug. Once dependent on a drug, repeated use is most likely to occur because of the user's desire to achieve the pleasurable "high" of the drug and get away from the "lows" of withdrawal symptoms. However, if the subject removes the withdrawal symptoms there is still no guarantee a relapse won't happen. A theory suggests that relapse occurs because it is the brain's conditioned response to craving the drug.

## **What kind of treatment is available to those suffering from substance abuse?**

Treatment for such a disease is such an incredibly difficult piece to ask for. Taking responsibility for what you have been suffering from is the first step to recovery. Acceptance that there is a problem. Recovery takes a physical and mental toll on the body. You are going through intense, dangerous detox, slowly straying away from the constant use. Withdrawal symptoms must be closely monitored to ensure the safety of your body so you can proceed with healing. Rehab centers are an excellent choice.

Step two is more therapeutic. The gathering of a dependable support system is essential, including outside sources (therapy, narcotics anonymous, alcoholics anonymous, al-anon/ Alateen) and close family/ friends necessary for

emotional support and stability. The total cost you can expect will vary. Medical rehab centers are equipped to treat the harsh side effects of withdrawal and can provide a safety net for patients. Therapy is also effective in actively fighting the urge to revert to old addiction habits. Communicating openly with a stranger about issues that may be faced is how you continuously choose to fight your sickness. For many college students, high costs can be detrimental to the future they are working so hard to build. Expensive treatment may not be the most practical resources for students. However, there are local resources that are open to helping those that need it. Paradise Valley Community College deeply cares for the well-being of all students. They have several resources you can easily access by reaching out to the staff such as social workers and more than qualified therapists. The community is here for you.



Medical equipment surround a paper on a clipboard titled “substance abuse”

## Conclusion

Substance abuse is a complex illness that users choose to fight on a daily basis. Individuals make the choice to actively fight the urge to use. Utilizing the community or personal resources that are available, and properly educating yourself about substance abuse is crucial to recovery. Though it is a long, continuous road, it is possible to heal from addiction and lead an ordinary life.

### Helpful local resources:

- **PVCC Counseling:** The counselors can help you make correct and positive decisions and resolve all questions and challenges to prevent crises including drug dependence. The service is free, voluntary, and confidential.
- **Arizona Behavioral Counseling and Education Inc.:** This Company offers a variety of drug abuse recovery programs. The duration and intensity of these procedures range from 18 hours to 90 hours.
- **TERROS Substance Abuse Prevention:** TERROS is a community-based behavioral health organization that can help people recover from drug abuse, mental illness, and other behavioral health problems. Drug abuse prevention education for teenagers and families.



- **Family Service Agency:** Family service agencies provide home treatment, relapse prevention, medication, and psychiatric evaluation. They provide individual, group, and intensive drug abuse treatments.
- **The Haven :** The Haven provides women (and their families) with gender-specific substance use services in a safe, supportive environment without judgment and stigma.

## Attributions

25.

# HEALTHY SLEEP HABITS

Micah Altes, Jel De Jesus, Brandon Tanji,  
and Matthew Lomsdalen

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## Intro

This chapter will cover the topic of creating and enforcing healthy sleeping habits. Topics will include how your behaviors throughout the day and how they affect your sleep, why we sleep, and go over healthy habits to include in your

nightly routine. This chapter will target students who want to learn about the beneficial habits of sleeping and balancing academic achievement and good health.

## How much sleep do you really need?

The National Sleep guidelines serve as a standard to the majority of the population but the amount of sleep needed can vary from person to person. Most college students need around 7-9 hours of sleep to work and maintain a healthy lifestyle. Unfortunately, most students get around 6-6.9 hours of sleep which can lead to a physical effect on the brain and body, fatigue, and lowered mental acuity.

## Common issues for not enough sleep

College students have a lot of stress to deal with juggling between their responsibilities, social lives, academic studies, and sometimes extracurricular activities. In the end, this greatly affects the student's sleeping patterns and builds up common issues why students find it hard to get enough sleep.

According to the studies, college students with sleep difficulties commonly either have anxiety, a busy mind, discomfort, or due to the noise of the environment. These issues affect people differently but there are treatments and remedies to overcome these obstacles. Consequences of sleep loss entail impaired brain development due to sleep deprivation cool, poor coordination, and increased negative feelings including suicide.

## Methods that can help you sleep better

There are many remedies to improve sleep. Since a lot of college students find it hard to set the right amount of time to sleep, a helpful tip that can help students get the proper amount of rest is setting alarms of when to go to sleep, getting exercise throughout the day, and turning off screens 30 minutes before bedtime. As a college student, the rest needs to be a priority not only to benefit the brain but also to the person's body. Meditation and focusing on breathing is a way to ease and calm yourself. Most of the time, students are under pressure, and taking a break and breather is just what you need to fall asleep. Developing a pre-bedtime ritual such as hygiene routines, listening to music, or even just turning off the lights can prepare your mind to sleep. It is good to find a routine

for yourself that will signify to your body that it is time for bedtime. A good night's sleep can also be gained through a good day. It is good to end your night with a clear mind, away from distractions such as unsolved problems, or finding comfort from your pillow.

## 20- Minute Power Nap

College students are infamous for pulling dusk until dawn affairs when large papers are expected or finals are not too far off, yet relinquishing rest has outcomes. Truth be told, not getting enough shuteye may take as a very remarkable cost for an undergraduate's scholarly presentation as drinking excessively.

According to [sleep.org](http://sleep.org), a nap will never absolutely supplant a decent night's rest, yet it very well may be a lifesaver to college students who stayed outdoors at the library while they study, or to the individuals who drive to their classes and do not have the opportunity to return home in the middle of them. Resting for around 20 minutes is ideal for a fast jolt of energy, and logging an entire hour and a half permits time for Rapid Eye Movement (REM) rest (during which the brain will enable a memorable understudy of what the individual has studied).

## Maintaining good sleep hygiene.

Having good sleep hygiene is the most straightforward answer to getting better sleep. Strong sleep hygiene means having a strong rest-ready environment, a steady sleep schedule, a relaxing pre-bed routine, and building healthy habits throughout the day that contribute towards better sleep. Making steps towards more restful sleep involves doing gradual adjustments throughout multiple days, like adjusting the time you go to bed by one hour every day. Prioritizing sleep is also very important, do not stay up for anything you wouldn't wake up early for.

## Do's and Don'ts of sleeping

Most college students need to manage their time around getting as much sleep as they can. Cramming the last minute and staying up all night trying to finish their homework isn't the best way to learn new information. Incorporating a nightly routine to settle yourself for sleep tells the body that it's time for sleep and can lead to falling asleep much faster. The most important and unfortunately the most difficult part is disconnecting from screens before bedtime. The best way to wind down without looking at a screen is to read a book,

light stretching, meditating, or listening to relaxing music. Throughout the day, students can also contribute to sleep by getting exercise and getting a healthy amount of sunlight, which helps the circadian rhythm. Also, don't forget to experiment with different habits and see what gets you the sleepest the fastest and what you find enjoyable to do every night.

## Mental Health and Sleeping.

Sleep is very closely connected with mental and emotional health and has links to depression, anxiety, and many other conditions. There are a couple of ways to improve one's mental health with sleep like improving sleep habits and getting cognitive-behavioral therapy. The roles in the brain while sleeping can greatly impact one's mental health, for example, getting a sufficient amount of REM sleep can improve the brain's processing of emotional information.



## Conclusion

In closing, It is very important to maintain healthy sleep habits. As it can affect a student's academic career and mental health immensely. The maintenance of these aspects of sleep can promote better well-being and a much better quality of life. Knowing the balance of sleep, academics, and personal life can help maintain overall well-being.



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# WORK LIFE BALANCE

Zac Wilson, Kaitlyn Martinez, Alanna Goldman, and Kyle Ekbohm

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## Work-Life Balance



More than 40 percent of college students experience above-average levels of stress, according to the National College Health Assessment. As students, we have plenty of aspects of our lives that add to our stress. The purpose of this section will be to focus on how our work-life balance affects our stress levels and overall health.

## Time Management

Time management is the ability to plan and keep track of the day, as well as how someone productively spends their day. Time management, boundary setting, and priority adjustment is an essential tool in maintaining a work-life balance. Taking on the responsibility of a full-time student or a full-time employee (or both) can make it hard to maintain work and personal life all while trying to complete important tasks. One crucial factor of maintaining good time management is to ensure efficiency with all time, whether it be personal and for work. It is important to make certain you do not procrastinate, as well as not overwork yourself. A useful trick to aid in procrastination habits is to divide tasks into smaller parts. The simple act of dividing out necessary work will provide peace of mind for the insurmountable stress caused by life. Procrastination can get incredibly stressful when work starts piling up more and more, which is why dividing work into sections is very helpful. You could even reward yourself after

each task is done to keep you motivated.

## Beating Procrastination



Before developing a time management strategy it is crucial to analyze how you are spending the day. It is important to

have a workspace that emphasizes a successful workday and a place that is quiet and distractions are eliminated. Time management helps individuals have more of a work-life balance because with these tools, having a personal life will not be an issue. It is beneficial to establish short term as well as long term goals for your days and prioritize what needs to get done. Leave non-essential tasks to the side so they are not distracting and do not take away from time you could be working on an important task. One method for better time management is the ABC prioritization method. If any work lands on the A list it is the most important, B is the second most important, and finally, C is the least important. Some of the most important time management skills are the following: Organization, prioritization, goal setting, communication, planning, delegation, and stress management. All of those skills are necessary to help individuals stay on track and manage their time better. Planning out the day can be useful to keep the day organized so that you know what is happening throughout the day and when work needs to be done. Another option is to create a calendar or planner or carry around a notebook with you. These two skills can be very beneficial to students and workers. Carrying around a planner or notebook with your tasks as well as listing tasks throughout the day as they come to mind can be very helpful. It is also suggested that you set realistic deadlines. With these deadlines, you are given a specific day and time that something needs to be done, which makes it harder to stay off task and procrastinate. All in all,

time management is key to a successful work-life balance and will help you to finish tasks and prioritize them.

## Health

Our health is vital when it comes to maintaining a healthy work-life balance. This includes our mental health, for example, mental disorders such as anxiety and depression, and our physical health, but if we do not take care of our soul and mind with the proper nutrients and fuel that we need, then one's well-being could be in danger. The importance of a healthy lifestyle can go a long way if taken seriously. If we as a society took time out of the day to pay attention to these red flags, then we can dedicate ourselves to spending more time on our wholeness.

First and foremost, is our mental health. As I mentioned in the first paragraph, there are two main mental health disorders known as Anxiety and Depression. These two mental health disorders are very common in the workplace. Anxiety is characterized by feelings of worry, anxiety, or fear about an uncertain outcome, and is accompanied by depression which causes feelings of sadness and loss of interest. Both of these disorders can harmfully impact the way we work. Certain conditions at a workplace can affect an individual causing stress which could eventually lead to a mental health disorder. As a current college student, managing work, school, social life, and family is a challenge. It is important to build our

mental stability and one way by doing this is by using a mental health journal to help express your current feelings and emotions. Writing can help us gain control of our emotions and a sense of relief. According to the University of Rochester Medical Center, “Journaling helps control your symptoms and improve your mood by helping you prioritize problems, fears, and concerns, tracking any symptoms day-to-day so that you can recognize triggers and learn ways to better control them and providing an opportunity for positive self-talk and identifying negative thoughts and behaviors.” Take this as a step by step process and evaluate how you felt that specific day, how you can improve, what went well, and what triggered the anxiety or depression. By writing down our thoughts we are more likely to understand them more clearly.

Just as our mental health is significant, our mind and bodywork together, if one does not properly function then the other cannot work as well. A healthy lifestyle consists: working out every day for at least 30 minutes, eating proper nutrients such as fruits and vegetables, and getting sleep. However, each individual may differ from their sleep schedule. It is important that we are aware of the signs our body may be telling us. When you are experiencing poor mental and emotional health, your immune system weakens. When you are stressed, anxious, or overwhelmed, your body reacts. It is important that we complete some sort of exercise, whether that be going on a walk, running, swimming, and dancing. Physical health has two components: Nutrition and Exercise. As previously

mentioned before, nutrition is what you put into your body. What you eat affects your appearance and overall how you feel on the inside. If you consume your fruits, vegetables, carbohydrates, and protein then you are more likely to feel better on the inside and outside. Exercise is to improve your muscle strength and boost your endurance. When you exercise you produce endorphins, which interact with the receptors in your brain that reduce pain. Following along with exercise, one great practice for the mind and soul is Meditation. If you go to a quiet room and sit down and close your eyes and imagine you are on the beach or a peaceful setting of your choice and take deep breaths. This is not going to solve your problems, but it is used as a sense of relief and relaxation. By incorporating exercise and proper nutrition you will experience a healthier lifestyle.

With physical and mental health being significant in a work-life balance, stress is a major contributor. What exactly is stress? Stress is a physical, mental, and or emotional factor that causes mental tension. Even though stress is known as a bad thing, it actually can help motivate us. Hans Selye is known for his studies of the effects of stress on the human body. He stated that there is a good





form of stress known as eustress, which is a good type of stress that can benefit one in challenging situations. However, with the good form of stress known as eustress, there are negative effects of stress on the body. No need to panic because there are ways that we can manage our stress and keep it under control. First, is taking a walk or some sort of exercise, when we workout it pumps up our endorphins. Secondly, meditation and or breathing exercises, when we can sit down and unwind we are practicing meditation. Breathing exercises are helpful when we are in stressful situations, for example, inhaling and exhaling. Thirdly, journaling helps clear your mind. If you aren't one who likes to write your feelings down, draw them instead. Use your images as your voice. Lastly, using a planner can help you stay organized and on track.

## Work Environment

The attitude that we have towards our daily activities can make all the difference between having fun and being stressed. The

Intro To Psychology textbook offers insight into our attitudes and how we control them. In essence, it says that how we feel about a situation is up to us. If you are unhappy with a certain aspect of your life then try this exercise. Close your eyes. Take a few deep breaths and forget about the negative thoughts that you may have. Now do your best to think positively and picture yourself in a positive environment. Try to trick yourself into believing that you love work; you love school; you love homework; etc. This is a proven exercise used by psychologists to help motivate different cultural groups. You can try this exercise each time you feel lethargic or negative towards your work-life balance.

A positive attitude is not the only thing that affects your work life. The people around you make a large difference in how productive you are as well. Studies show that a positive work environment increases productivity by up to 43% and provides employees with a healthier mentality than those who work in a negative environment. Office cleanliness affects the overall positive vibes of your work as well.



While it is commendable to work while going to school, keep in mind that it may start to weigh on you. Pick a job that makes you feel fulfilled and satisfied at the end of the day. Not only will it make your day go by faster but it will also help you in every other aspect of your life! It can assist you in your studies. Positivity can help you put a smile on other's faces! Ultimately, working in a healthy, positive work environment will alter your life considerably.

As students, we tend to “burn-out” when we take on too many tasks. We forget to breathe, to relax, to focus on the important things. Unhealthy work environments, poor schedules, and bad attitudes make college life miserable and expedite the “burn-out” process. Find an awesome job and prioritize your life! You can do this!

## Sleep

The correct amount of sleep is essential to maintain a healthy work-life balance. Without the correct amount of sleep, one may not be able to function properly throughout the day and within the work environment. Not getting enough sleep can lead to many problems with one's health, such as disorders (Insomnia and Sleep Apnea) and fatigue that restricts one's mind and body from functioning at its full potential. Fatigue can affect behavior, interactions, and can even have physical effects. If you are fatigued then you are most likely to be moody, mumble when you speak and get triggered, and potentially snap at people very easily. Not only does your behavior change, but also eye bags form on your face and it may be a struggle to keep yourself awake for class or work, which can be very dangerous. You may ask how do I get the correct amount of sleep? Well, it's actually a very simple solution, different ages require a disparate amount of sleep, and many factors before one goes to bed can potentially harm

or better the amount of sleep one receives.



Many of you most likely go on your phones before you fall asleep. This is actually detrimental to the amount of sleep you receive, not only does being on your phone keep you up longer than you anticipated, but it also restrains the production of melatonin (a hormone that controls one's sleep-wake cycle) which makes it more difficult to fall asleep and wake up the next morning. This is just one of the many factors that harm sleep patterns and motivation in the morning. There are many things one can do that helps one's sleep cycle and prevent a loss of sleep. Some examples are to set up a fixed bedtime and wake time in order to ensure that you do not oversleep or get up too early, you can also develop a nighttime routine, avoid electronics and make sure your bed is comfy and the

room is dark. These are just some of the many examples that control sleep and make sure you get a good night's rest without overdoing it. Sleep is not something to overlook, make sure you are getting the correct amount of sleep to ensure that you and your mind are working to its full potential during work, school, and around your family.

## Conclusion

In conclusion, mental health and physical health are significant while sustaining a healthy work-life balance. This is the importance of why we as individuals should take the time and day to focus on ourselves to take care of what is truly valuable. Practice incorporating the helpful tips that were listed above to manage your stress. Consisting of a healthy lifestyle that meets your needs will be beneficial to you, your mind, and your soul. If you practice managing your time, you will create a positive work environment and balance.

## Community Resources

- PVCC academic coaching and tutoring: Call 602-787-7180 to get help with any work-life balance needs whether it is time management, or how to better

your stress. They have many different types of coaches that can help with any of your needs. You can choose from a reading coach, a success coach, and tutoring.

- PVCC's Learning Success Center: You can reach them at 602-787-7180 and they will help you find any tutor or coach and make appointments with a professional.
- Life Coach: A life coach can be very beneficial in helping with a work-life balance. There are plenty of life coaches that do online virtual sessions that are convenient for you. At bark.com they will help you pick out all your needs from what kind of coach you want, and whether you prefer male or female and it searches for professionals in your area.



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27.

# BREAKING UP

How to deal with Breaking Up

Reyna Gil, Jocelyn Kozak, Anthony Sportiello, and Molly Adams

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## Introduction to Break Ups



Break ups are a tough thing that almost everyone will go through at least once in their life. It doesn't matter if you are the one breaking up with your partner or the one receiving the bad news, it can still be really difficult for both parties. There are so many factors that contribute to breakups. In this section, you will learn about the causes of a break up, how to



break up with someone, how to deal with a break up, and how to take care of yourself after a break up.

## Causes of a Break Up

Letting go of someone is hard, even if it is for all the right reasons. It can be easy to second guess yourself or let others influence your decisions. During a relationship, you may notice some red flags. There can be abuse in a relationship, which can include physical, mental, and emotional. Signs of abuse may include but are not limited to: controlling your finances, limiting who you can hang out with, hitting, verbal abuse, controlling what you eat, and much more. Another huge red flag is toxicity. Some examples of a toxic relationship are cheating, fighting, lack of communication, holding back feelings, shadiness, lying, etc. One major thing you should focus on is whether you're happy in the relationship or not. If you notice that you're not happy, then it's probably best if you leave. Your partner should not be your main source of happiness, but they should be a part of it.

## How to Break Up with Someone



If you decide breaking up with your significant other is the best choice for you, here are some helpful tips and lines that might help you.

You have many options on how you can break up with someone. You can do it over text, in person, have someone else do it for you, or you can just straight up block them on everything. The best way you can break up with someone is in person. It's more mature and less dramatic. The most important thing to keep in mind while you're breaking up with someone is to be honest. It will hurt their feelings, but most people appreciate the honesty.

As scary as it seems, remember why you're doing it. Keep it honest and clear. Just tell them how you feel. You have the

choice to block them as an easier way to move on. It may seem hard because you still care about that person, but putting them out of sight will help you move on from them.

## How to Deal With a Break Up

It's never easy losing someone, especially when you're not ready to give up. Whatever the reason may be that the relationship didn't work out- no matter how big or small, it can still be hurtful to lose a person so close to you. While it can be tempting to keep them on social media, you are only hurting yourself. Seeing their day-to-day lives can be extremely harmful to your mental health. Keeping somebody out of sight will make you think less about them which is what you ultimately want. Another tip is to give yourself time to accept that you've lost the person. Trying to move on right away isn't necessarily the healthiest thing to do. You need time to focus on who you are as a person and learn how to be independent again. The main priority after a break up is yourself. It can be hard to take care of yourself, but you learn to move on.

## Self Care

While it is easier said than done, it is important to make sure you take care of yourself no matter if you are breaking up with someone or being broken up with. After losing somebody so

close to you, it's easy to want to cry your eyes out, push down all your feelings, or any other unhealthy coping mechanism. It is important to take care of yourself, mentally, and physically. This may include hygiene, eating right, drinking enough water, getting enough sleep, and allowing yourself to release your emotions. What's important is that you take the time to accept the loss at the end of the relationship. You can't live in the cycle of regret and missing the person and wishing they were back because that's not reality. What is important is that you take time



to focus on the things that make you truly happy. This may include finding new hobbies and interests. At the end of the day, a break up is a growing opportunity to better yourself. This process is all about you and what you want out of it.

### Community Resources:

[breaks up and what to do instead](#)

[How-to-break-up-with-someone](#)

[When-to-break-up-with-someone](#)

[5-hard-truths-about-breakups](#)

[what-to-do-after-breakup](#)

## Conclusion

In conclusion, it's important to understand the causes of a break up, how to break up with someone, how to deal with a break up, and how to take care of yourself after a break up. All of the advice can help you when you're going through a break up or if you're planning on breaking up with someone.

Here are a list of resources in case you need help dealing with a break up:

**Break Up Hotline:** By calling 1-855-683-5433, you can help in so many ways regarding a break up. You could call this number because you need someone to talk to, you're debating on breaking up with someone, you just got broken up with, you need a confidence booster, you might get yourself in a cheating situation, you might want your ex back, and etc. For more information about the break up hotline, click this link.

**PVCC Counseling:** The counselors at PVCC are here to help you with anything you might need. Although the

counselors at PVCC do not conduct therapy, they are here to help you learn more about yourself and figure out coping strategies. For more information about PVCC's counseling, click this link.

**Domestic Violence Hotline:** If you or anyone you know are in a domestic violence relationship, there is a hotline that you can call to seek help, which is 1-800-799-SAFE (7233). For more information about the domestic violence hotline, click this link.



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28.

# HEALTHY STUDY HABITS: PSYCHOLOGY SAMPLE CHAPTER

Brianna De La Riva

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This chapter will explore and examine healthy study habits for you to promote academic achievement and good health. This chapter will provide strategies to help you achieve a healthy balance between your academic and personal life. Topics covered will range from the social, physical, cognitive, nutritional, motivational, and emotional aspects of life and positive coping mechanisms.

## Do you really get enough sleep?

The University of Georgia has found that, on average, most college students get 6-6.9 hours of sleep per night, and the college years are notoriously sleep-deprived due to an overload of activities. It is



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suggested that establishing a consistent sleep schedule and maintaining between 7-8 hours per night is beneficial. Lack of sleep causes a physical toll on the body and brain, leading to fatigue of the body and it affects mental acuity. Tips for maintaining a healthy sleep routine is by having one, a set time to wake up and go to bed the same time every day. Avoiding caffeine before bedtime, avoid eating within two or three hours of your planned bedtime, and avoid alcohol or nicotine before bedtime.



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## Healthy Food Habits



Many of you opt to fast food drive-thrus rather than making a home-cooked meal, saving time for your studies. This leads to overall poorer health; fast food is high in sodium, sugar, and calories. This diet can lead to diabetes, obesity, and cardiovascular diseases. For a healthier diet, you should be consuming more plants and nuts. Batch cooking solves the dilemma between time and healthier eating. Stews, casseroles, or soups are healthier meals to cook at the beginning of the week and frozen until needed.

### **Motivational Strategies**

You may occasionally lack motivation in your educational endeavors, the long hours of studying, and sacrifices in life to ensure excellent grades may take its toll. Despite the massive amounts of students entering college, it has been found that not all will persist and earn college degrees. Motivational

strategies remind you that your purpose is to achieve your goals. Begin by setting small, specific, realistic goals to achieve self-efficacy. Visualizing yourself walking across the stage to earn that degree and how it will change your life.

### **Cognitive Health**

It is crucial that you maintain your mental and emotional, cognitive health. Academic achievement is important as a marker of positive adjustments, academic achievement sets the stage for future educational and occupational opportunities. It's imperative for you to be cognizant of your cognitive health and how to maintain it. Negative thoughts such as, "It's the worst that I failed that test!", instead think, "It's not good I failed that test, what resources are available for me to improve on my next one?". Most importantly, stay positive and have a support system.

### **Social Health**



You will utilize practical communication skills throughout your life, inside and out of your academics. Writing, reading, being able to work with a diverse work team, and having the

social skills required to be successful in a career and in society are qualities that go beyond merely earning a credential to compete for a job. Tips to improve social health include regularly contacting student support services if you are feeling socially isolated; PVCC counseling center is available for any of you needing to speak on any personal or academic matters. Be involved with school clubs to associate yourself with like-minded individuals with similar goals. But most importantly, remember to follow your passions and have some fun!

### **Emotional Strategies**

The stress of academics may lead to various emotions within you, ranging from happiness to depression. You will need to learn and utilize coping mechanisms. Emotional strategies that can be helpful include learning breathing exercises, practicing meditation, or saving time for personal reflection to recall all the “good” times. However, if you continue to feel distressed, it is essential to reach out to a professional or a friend. Also, if you have plans already in place things that might go wrong, it will put you at ease knowing you have them.

### **Local Resources**



Some resources which may be beneficial towards assisting you during your academic career at PVCC are listed below:

- **Mental Health Help:** PVCC has free counselors here for you to help with anything from academic, personal, social, or career issues. While they do not conduct therapy, they do help you learn more about yourself and identify coping strategies to emerge with enhanced self-confidence and a clear path. Located in the KSC building, Room: KSC1220. You can find their link [here](#).
- **Disability Resources:** An excellent resource for students is PVCC's Disability Resources & Services. They provide information and services to students with any documented disability who are attending classes at PVCC. They strive to empower students, foster independence and promote achievement of realistic career and educational goals. For more information, you can find their link [here](#).
- **USDA National Hunger Hotline:** From 7:00 AM –

10:00 PM Eastern Time. If you need food assistance, call 1-866-3-HUNGRY or 1-877-8-HAMBRE to speak with a representative who will find you local food resources such as meal sites, food banks, and other social services available near your location. You can find more information at their website here.

- **Housing Help:** The Department of Housing and Urban Development offers numerous resources for anyone who is experiencing or are at risk for homelessness or are searching for low-income housing. Their Resource Locator found here offers a way for you to find local help by connecting with building managers, public housing authority representatives, and property management companies to inquire about housing issues, including availability.

## Conclusion

In closing, it is important for you to keep in mind your physical, emotional, motivational, social, and nutritional health while pursuing your academic career. Maintenance of these aspects of health can promote overall well-being and good health, which may lead to further success in your educational pursuits. You need a balance between academics, health, and personal life to help maintain overall healthful well-being. These strategies described above can serve as a useful guide towards achieving this balance.

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Chapter: Distracted Driving

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