

# Nutrition Module

## Part 1: Why Do I Eat What I Eat?

### Intro

Part one of this module will be “Why Do I Eat What I Eat?” Do you remember what you wanted when you decided to start this journey of increasing your health, well-being or vitality? Why it is that you want to learn more about eating well. What are your priorities? Select the top three reasons you’re investigating nutritious eating now.

*Action: User will select three of the following statements that most relates to them. As the user scrolls through the list, the statement will be highlighted. When they are clicking the related statement, a checkmark will appear beside it.*

- To have more energy sustained throughout the day/night*
- I want to get sick less often*
- To feel better*
- To reduce inflammation*
- To lose weight*
- To look great*
- To eat in a way that’s sustainable for me and the planet*
- To learn what my body needs so I can add some of those foods*
- To improve my concentration and attention*
- To feel calmer and more relaxed*
- To perform better*
- To learn skills to help me cook, shop and prep foods*

For many of us, getting really focused about what we want helps as we start a health journey. It’s also helpful to know “how” and “why” before trying something new. So what is your starting place? What are your current eating and health patterns? Do you wait until you’re too hungry? Are you a meal skipper? No breakfast?

*Action: Opens with avatar sitting. A thought bubble fades in and is filled with each question asked in the script as it is voiced over..*

In this section we will give you tips on reasons to choose foods.

***Action: Light bulb appears and then random foods fade in when voiceover says "reasons to choose foods"***

We will discuss effective meal and snack planning, foods with health benefits, high quality foods, and foods to fuel your body.

***Action: Clipboard with objective appears. As objectives are listed, a check mark appears.***

## Content

MyFitnessPal and Nudge are some helpful apps that can support you in maintaining and tracking your health patterns. It's very useful to learn which healthy, high fiber carbohydrate foods you most enjoy.

***Action: Scrolls through various health apps on their phone.***

A good start towards health is to base your diet on eating fresh or frozen vegetables; getting several fruits each day; using whole grain foods like oatmeal and whole wheat bread; and including beans, peas and other legumes regularly.

***Action: Wholesome food options including vegetables, fruits, grains, and beans; avatar considers these by looking up and with a thinking face where the hand is on the chin.***

To compliment these plant-based high fiber carbohydrate foods, identify favorite lean protein foods and add a little brain and heart healthy fat with each meal.

***Action: As voiceover is happening, different foods appear under the "Protein" and "Fat" labels. Good ones get a happy face and bad ones get a sad face.***

To feel good, your goal is to eat a variety of foods each week so you get a mix of nutrients.

***Action: Walks into a kitchen from the left of the screen towards the fridge. As sentence 4 is said, the calendar is showing time passing. The avatar will open fridge and start putting foods in lunchbox on sentence 5. It can be beneficial for you to effectively meal and snack plan, by eating when you are modestly hungry and stop when you are satisfied rather than full or stuffed.***

Sharing food can be a great source of meaningful human bonding, sharing, and celebration. In many cultures, celebratory food offers variety and the opportunity to relax around food.

***Action: A group of avatars having a party. Different ages eating different foods. On the second sentence, flags appear on the wall representing a variety of cultures.***

Children have better nutrition, attention, school performance, and more when they eat at least some meals with their family during the week. Similarly, seniors tend to eat a wider variety of foods, when they eat with other people, resulting in better nutrition.

**Action: Grandpa and granddaughter are working on homework, while eating two different kinds of snacks.**

How do you know which are the “wholesome” foods?? Most come from nature and don’t require food labels. High quality foods help you feel good; put a little spring in your step; and keep you feeling strong, clear-headed, and a little sassy. You’re fit for life and better able to withstand stresses or challenges.

**Action: User avatar eats a healthy meal and then is able to button their pants easily. The avatar jumps for joy with the success and streamers fall from the top of the screen.**

What we eat influences our performance, learning, attention, and wellbeing. Eating foods that deliver a powerpack of vitamins, minerals, and other nutrients supply our cells with necessary nutrition. For example, protein and fats are raw materials for building muscle, vitamins and minerals are necessary cofactors for chemical processes. You may know the benefits of healthy foods for your heart and body, but did you know they also help the brain and mood?

<b>Healthful Foods</b>	<b>Benefits to Brain</b>
Fish oil in salmon or sardines	Lowers depression & improves attention
Folic acid in leafy greens	Builds neurotransmitters that reduce depression
Magnesium in whole grains, beans, vegetables, & milk	Lowers depression & promotes calming

**Action: Eating different foods described in the chart and the mood of avatar changes on their face, as well as images around them, based on that food.**

The timing of when we eat also influences other body functions. You want to create a rhythm of eating instead of waiting until empty to eat again. Part of why this is important is that when you eat, your body makes the hormone insulin. Although insulin’s main job is to move sugary carbohydrates from your blood to the cells that need fuel, insulin also moves the protein fuel around the body; thus contributing to many of the other processes in the body such as making hair, bones and reproductive hormones. You may also notice feeling less anxious if you eat something nutritious on a regular basis every 3 to 5 hrs.

**Action: The clock is continuously moving. As the hunger bar moves on the right, the avatar will eat different foods that influence it. The bar will never get completely empty.**

**Protein-** Hair, skin, hormones, neurotransmitters, organs and other tissues are continually being broken down and remade. Protein in our diet is essential for these tissues. Without enough or the right mix of amino acids and proteins, we can't renew these essential body parts. Protein is supplied by beans and peas, meat, fish, poultry, and dairy.

**Action:** *Avatar will consume chicken and/or beans, then they flex and the muscles will grow.*

**Fat-** We need just a small amount of fat. Brain cells are especially high in fat content. Many of our sex hormones require healthful fat and cholesterol for manufacturing. Keep in mind a little high quality fat goes a long way. A pure fat like oil or butter is two times higher in calories as the same amount of protein or pure carbohydrates. It's even higher than alcohol in calories! So we don't need much, but a little fat is important.

**Action:** *Avatar will eat an avocado. When the voiceover goes, "brain tissue is high in fat," the brain lightbulb will blink above head.*

**Carbohydrates-** High Quality Carbohydrates supply the fuel for muscles, the brain, adrenal glands, and the body's gut bacteria called the microbiome. Fruits, vegetables, and whole grains are excellent sources of high fiber, high-quality wholesome carbohydrates.

**Action:** *Screen would zoom in close to the lightbulb brain and see electrical currents representing communication between neurons.*

**Minerals-** Calcium, phosphorus, and other minerals from wholesome foods can re-supply our bones and teeth with the durable minerals to build or replace old bones.

**Actions:** *Scene opens with a porous bone. As voiceover continues, milk is poured over a broken bone, and kale is put over the large pores. The kale will begin to disappear and the pores visibly shrink on the bone.*

## Outro

To recap, this section covered *why* to choose the food we eat with health and vitality in mind. We discussed the impact age has on food choices, the benefits of choosing high quality food for as many meals as possible, how to use food as fuel, and the positive impact choosing between proteins, fats, carbohydrates, and minerals can have on your wellbeing.

**Actions:** *The clipboard from the beginning of the module appears with all the boxes checked.*

Now let's check your knowledge of this first section moving forward!

# Simulation Testing

You have been feeling drained and achy throughout your busy daily life. Having a change in eating habits can help resolve this feeling.

**Action:** *The avatar is at work looking upset and yawning occasionally. There will be activity and mood icons in their thought bubble indicating the fatigue they are feeling.*

As you are packing your meals to take to work tomorrow, what food would be best to include?

**Action:** *The avatar will walk in from the left of the screen and reach for the fridge handle. The fridge opens and the user can click on the option they want. Once they select the item the avatar will grab the item and close the fridge.*

\*Include 4 different options that are protein, carbohydrate, fat, and mineral\*

Option 1: Chicken (protein)

Option 2: Milk (mineral)

Option 3: Avocado (fat)

Option 4: Berries (carbohydrate)

You have earned X gems! This food choice (helps/does not help) your fatigue because..

**Action:** *The avatar will do an action such as jump or give a thumbs up, based on the gems given. The gems by the food will quickly fade into view on the food and health. The health bar will move dependent on the gems.*

If you would have chosen you would have earned X gems because ... This choice gives you (more/less) gems than what you chose because....

**Action:** *As you click the other options the amount of gems it is worth appears beside it with a textual description of the gems given above it.*

"Congratulations for completing part one of the module! You have earned \_\_\_ amount of gems towards a reward. Continue to part two to learn more about the why of eating"

**Action:** *Avatar will be jumping up and down while balloons rise from the bottom of the screen.*

# Part 2: What Should I Eat?

## Intro

Part two of this module will be “What Should I Eat?”

***Action: Avatar appears and question marks with food quickly fades into view around it.***

We will discuss blood sugar, benefits of plant food, choosing snacks, understanding your eating, and a few other areas.

***Action: Clipboard with objective appears. As objectives are listed, a check mark appears.***

## Content

It is important to watch what you eat, as it can affect your blood sugar. Keeping your blood sugar steady improves vitality and energy. Blood sugar levels should slowly rise then have a steady fall every 3 to 5 hours throughout the day. Ideally, blood sugar should rise enough to meet the body’s needs, but not so much that it floods the body’s systems with extra fuel.

***Action: Your avatar and others are riding a rollercoaster that has blood sugar on it. There is a clock on the screen that is showing time changing by the hour. As the time goes, the roller coaster goes up and down.***

To achieve a steady blood sugar; have good quality carbohydrates rich in fiber, have a lot of non-starchy vegetables, lean proteins, have a few healthy fats, small serving sizes of fruits, and balanced snacks. These foods will help you achieve the ideal blood sugar pattern and normal level of insulin.

***Action: Avatar is sitting at a table. On the table, foods that go along with the voiceover fade in and out as they are being listed. The avatar will also have a speech bubble about how she feels great/energized.***

What you eat is important because it prevents or promotes disease and aids in social sharing. Examples of foods to avoid that are disease-promoting are refined grains made from endosperm (fiber free inside part of the grain), high intake of red meat or animal protein, charred meat or burned bread/toast products, trans fats made from liquid oils into stiff fats such as solid Crisco and other commercially produced snack foods, sugar sweetened foods and beverages (i.e. soda and sugary juices).

***Action: At first, the avatar is happy, but as unhealthy foods described in the voiceover are described, those foods will pop around their head and make the avatar look more and more unwell. This could start with a frown and end with things like tissues and a thermometer being added to the avatar.***

The eating of plant foods can benefit you not only physically, but mentally as well. It's best to build your meals or snacks to include these foods;

	Goal servings/day	Example
Fruits	2-3 small servings/day	Small apple or orange Berries on cereal
Vegetables	3-4 servings/day	<b><u>Salad</u></b> Broccoli, kale, carrots, tomato, green beans Baked sweet or white potato
Whole grains	3+	<b><u>Oatmeal</u></b> Slice whole wheat bread or ½ muffin Brown rice or quinoa
Beans	3-7/week	<b><u>Vegetable chili</u></b> Lentil soup Hummus Canned beans
Nuts	1 small serving/day	Walnuts Peanut butter Almonds

***Action: The avatar appear overweight with a sad face and rain cloud over its head.***

Eating fruits and vegetables helps lower blood pressure and weight. Plant foods are also high in magnesium and folic acid which are beneficial for lifting your mood and improving depression.

***Action: As the avatar eats, they begin to lose weight and smile. During the last sentence of the paragraph, a gust of wind will move the cloud, a sun will appear, and flowers will sprout.***

Not everyone needs snacks, but if you are going to have one, it is best to time it about two to three hours after a meal or when you'll have a long gap of less than 6 hrs between meals. For example, if you had lunch at noon, but will not be eating dinner until 7 or 7:30 pm, a snack between 3 to 4 in the afternoon is useful so you don't get over-hungry by dinnertime. Some factors to think about when you are considering a snack are; choosing when and what to snack, the quality of your meals, mindful eating and asking yourself: are you eating slowly so you are tasting and savoring your food? How much energy (or calories) do you use, how much do you need? How much sleep do you get? Sometimes we're also thirsty when we reach for a snack. So you can ask yourself if you need more water instead of food.

***Action: Avatar is at work. The clock in the background progresses. The avatar asks themselves the questions in the voiceover starting with 'are you eating slowly...'***

When choosing your snack it is good to get a mix of nutrients instead of eating one type of food. You can choose a protein that can be paired with a high fiber carbohydrate and a little healthy fat.

***Action: The avatar reaches in their lunchbox at their desk and pulls out related foods during the last sentence of this voiceover section and places on their desk.***

If you want to learn more about eating mindfully, check out The Mindful Diet book or Kristen Neff's online self-compassion exercises. These resources can help us to further our self-trust with periodic check-ins so that we're making wise choices more of the time.

***Action: Avatar will pull two books out of a bookshelf. Each book will have the two recommended book covers on them.***

## Outro

***Action: Opens with avatar holding a clipboard.***

To recap, this section covered blood sugar, benefits, and recommended servings of plant food, choosing snacks, understanding your eating, and other resources.

***Action: The clipboard from the beginning of the module appears with all the boxes checked. Screen zooms into clipboard for voiceover.***

Building from the previous section, we will test your knowledge on the topics discussed in this section.



# Simulation Testing

You made it through your long day at work by making a good snack choice, now let's choose your meal for dinner!

**Action:** *Avatar walks through the front door in their work outfit/a briefcase. The avatar looks at the clock to see it's almost dinner time.*

Make sure to choose a protein, plant food, a high fiber carbohydrate, and an additional healthy choice!

- a. Option 1: salad greens, turkey, sweet potato chunks, flavored oil and vinegar, brown rice
- b. Option 2: Chicken, sweet potato chunks, brown rice, fish, flavored oil and vinegar
- c. Option 3: Salad Green, strawberries, fish, brown rice, baked potato
- d. Option 4: Brown Rice, strawberries, fish, baked potato, turkey

**Action:** *As the cursor goes over each covered dish, it is revealed and the option is spoken in the voiceover. Once the user chooses their dish, the avatar's hands pick up the dish out of the screen.*

You have earned X gems! This food choice is (balanced/unbalanced) because..

**Action:** *The avatar will do an action such as jump or give a thumbs up, based on the gems given. The gems by the food will quickly fade into view on the food and health. The health bar will move dependent on the gems.*

If you would have chosen another option you would have earned X gems because ... This choice gives you (more/less) gems than what you chose because....

**Action:** *As you click the other options the amount of gems it is worth appears beside it with a textual description of the gems given above it.*

"Congratulations for completing part two of the module! You have earned \_\_ amount of gems towards a reward. Continue to part three to learn more about the timing of eating"

**Action:** *Avatar will be jumping up and down while balloons rise from the bottom of the screen.*

# Part 3: Timing of Eating

## Intro

It is healthy for us to eat around the same time every day.

*Action: Avatar's face will be center of screen. Sun will rise and set over their head.*

Spacing food every 4-5 hours throughout the day helps allow our bodies to process the food we eat in a healthy and productive way.

*Action: A giant clock will appear and every 3-5 numbers on the clock, a food item is there.*

In this section, we will be covering food as fuel, cravings, and eating's impact on the brain.

*Action: Clipboard with objective appears. As objectives are listed, a check mark appears.*

## Content

Like cars, our bodies need fuel to function each day, all day. This fuel includes carbohydrates and glucose. We also need a mix of calories that include some protein and smaller amounts of healthful fat.

*Action: During the first sentence, the avatar will approach a gas tank. On the second sentence, healthy carbs and glucose foods will fade in and appear on the gas take, indicating that is what the gas take is supplying.*

Although we can store extra calories as fat for fuel, we only have a one-day storage of carbohydrates in our muscles and liver. Some body parts such as the brain run on carbohydrates.

*Action: There is a clock in the center of the screen that will go forward at a consistent pace. On the left, the avatar will be eating different foods and their fuel bar will be fluctuating. On the right there will be the avatar's liver with an energy bar that slowly depletes while the chemical for carbohydrates slowly fades.*

The cliché that “breakfast is the most important meal of the day” is TRUE. Skipping breakfast impairs concentration and learning in children, so it is important to eat a healthy breakfast to keep your body functioning throughout the day. What we eat for breakfast doesn't have to be a breakfast type of food, it can be leftovers or a non-sugary snack-type food.

*Action: A child will be eating a balanced breakfast at a table. The clock on the wall will show it is around 9AM. In the background, there will be a chilled A+ assignment on the fridge.*

Even though breakfast is an important meal, it should not be your only meal. Eating one large meal a day puts a burden on the digestive organs, sets us up to eat too fast, needs too much insulin, and have problems with normal bowel elimination.

***Action: Large clock appears with a happy face on it and one meal at 9AM indicating breakfast, as the clock progresses, the face of the clock starts to get sad/sick.***

Eating too late in the day can lead to overeating or over drinking especially if we're tired.

***Action: Avatar eats a meal in front of a window showing that it is dark outside. The avatar's plate is filled unusually high.***

When planning your meals, you should have 4-5 hours in between each meal. By eating in a bit of a pattern, such as breakfast by 9 am, lunch by 1 pm and dinner by 5-6 pm, the body can coordinate all these varied tasks better than if someone ate nothing all day then ate the whole days worth of calories and nutrients in a ½ hour long episode in the evening.

***Action: Avatar looking at clock at 9:00 with a thought bubble of a healthy breakfast choice***

When you eat too much at one time it can lead to problems for the hormone insulin, which is made in the pancreas. Insulin carries carbohydrate fuel to our cells throughout the body and transports protein, so not having healthy eating habits can hinder our insulin from doing these very important jobs.

***Action: From the stomach, zoom in on the pancreas to show an image that represents insulin leaving the pancreas (exit door) and traveling to other parts of the body carrying fuel.***

When our bodies start to run out of fuel, the brain begins to feel hungry and grouchy. This sets us up to reach for fast-acting sugary carbohydrates to try and make the brain happy.

***Action: A brain will be on screen with a fuel bar under it, as the fuel begins to run out, an angry face will slowly fade onto the brain.***

The brain is not the only system in the body that is influenced by what and when we eat. With erratic eating times or long stretches between meals, the body may function with less ease or vitality. Even the manufacture of neurotransmitters that require both protein and other vitamins can become misaligned.

***Action: Zoomed in on avatar's stomach with an upset face, similar to the angry brain***

This brain-craving for carbs heightens our risk of making unwise food and drink choices that can lead to excess weight, lethargy and self-blame. It's not our fault. It's just the way our bodies are designed that when we don't get enough healthy carbohydrate, we'll seek out the quick-acting, not-so-healthy choices.

***Action: The avatar will start eating junk food and will get slightly larger with each bite and their face will also appear more sad with each bite.***

The good news is that by supplying the high fiber healthy plant food carbs at meal and snack times, we can re-route or prevent some cravings.

***Action: The avatar will start eating healthy food and will get slightly happier with each bite.***

## Outro

As a reminder, it's good to have something, even if it's a few walnuts and half a banana for breakfast and then eat every 3 to 5 hours after that.

***Action: Avatar is running late for work, but still grabs a few walnuts and a banana from the fridge.***

To recap, in this module, we talked about the benefits of timing your meals for better brain health, food as fuel and strategies to reduce cravings. Now let's see how much you learned from this section.

***Action: The clipboard from the beginning of the module appears with all the boxes checked.***

## Simulation Testing

Now that you've planned your lunch for your weekend in the previous part of the module, let's choose the best times for your weekend meals!

1. Breakfast:

a. 7:00 am

b. 8:00 am

c. 9:00 am

2. Lunch:

a. 11:00 am

b. 12:00 pm

c. 1:00 pm

3. Dinner:

a. 2:00 - 3:00 pm

b. 4:00- 5:00 pm

c. 5:00 -6:00pm

***Action: Users will pick a time for each of the three categories for breakfast, lunch, and dinner. These times will show on digital clocks.***

***\*NOTE: Users will pick a time for breakfast; from the time they pick, users should pick their next meal time to be 3-5 hours later. If done correctly, each time will be 4-5 hours apart.***

You have earned X gems! This time choice is (healthy/unhealthy) because..

***Action: The avatar will do an action such as jump or give a thumbs up, based on the gems given. The gems by the clock will quickly fade into view on the food and health. The health bar will move depending on the gems. The time choice combination that is 4 hours apart each will be worth the most.***

If you would have chosen another closer to 4 to 5 hours between each meal, you would have earned X gems because ...

***Action: As the voiceover explained how you could have gotten more gems, the clock will change dependent on the amount of hours between eating time that is being explained.***

"Congratulations for completing part three of the module! You have earned \_\_ amount of gems towards a reward. Continue to part four to learn more about the timing of eating."

***Action: Avatar will be jumping up and down while balloons rise from the bottom of the screen.***

## Part 4: Biology of Eating

### Intro

Part four of this module will be "Biology of Eating."

***Action: Avatar's face will be in the center of the screen.***

In this module, you will learn the 4-step process of nutrition/digestion: ingestion, digestion, assimilation, and elimination.

***Action: Clipboard with objective appears. As objectives are listed, a check mark appears.***

### Content

The first step of the process is ingestion, or the act of putting food or drink into our bodies.

***Action: The avatar opens the door to the fridge and pulls out a plate of food. On the plate is the meal from the Part 2 simulation test.***

It's best to have variety in what you eat or drink, savor the foods you enjoy, and include superfoods that give your body and mind the fuel and nutrition they need. For example, having berries or an orange with breakfast and an apple with lunch, or avocado and whole wheat toast for a snack, helps supply the grain or plant fiber and fluid to improve digestion and to feed the cells well. Eating mindfully and with a pattern of regular meal and snack timing is also important to help the body use the food you eat.

***Action: The avatar begins to eat from the plate of food.***

Digestion is the second step. During digestion, food is broken down into smaller parts so that our bodies can use them. Our bodies use both mechanical and chemical methods to break food into smaller parts.

***Action: Cynthia's avatar will shrink down and go into the user's avatar's body. She will move through the avatar's whole digestion system. (She will be present in the rest of the action motions for this section).***

Digestion begins in the mouth. The mouth mechanically breaks down food by chewing and moving food around in the mouth. Doing this breaks up the larger parts into smaller parts; think chewing salad, apple, or turkey.

***Action: The avatar's mouth is emphasized, showing food entering the mouth.***

The salivary glands located near the mouth also produce chemicals that break down the sugary and starchy carbohydrates that we eat into smaller particles so they can later be absorbed. Slowing down to chew foods and allow that chemical mixing of saliva aids in making digestion easier later on!

***Action: As food enters the avatar's mouth, she begins to chew. The larger bites of food become smaller.***

From the mouth, food travels through the esophagus to the stomach. There is a rubber band-like fixture called a sphincter muscle at the base of the esophagus that helps regulate and keep the food in the stomach from coming back up the esophagus.

***Action: The avatar's esophagus is emphasized as food travels down it. At the base, food passes through the sphincter. Cynthia's avatar slides down the esophagus with the food.***

One of the stomach's biggest jobs is to chemically break down the protein in foods you've eaten. The goal of the stomach is to reach a low pH and create an acidic environment so the protein will go from large to small molecules, very much like how a meat tenderizer helps break down tough meat so it's more digestible.

***Action: The avatar's stomach is emphasized. Cynthia and the food falls from the esophagus into the acid in the stomach.***

Mechanical breakdown in the stomach hurls food up to the top of the stomach with great contractive mechanical force over and over to break it into small enough bits to safely leave the stomach.

***Action: The acid in the avatar's stomach bubbles with the food in it.***

While this mechanical force/breakdown of food occurs for anything that's in the stomach, it's most important for the protein we've eaten to get well mixed with stomach acid, since the stomach is the primary digestive location for protein. Not much happens with fat or carbohydrate digestion in the stomach. But stay tuned, fat digestion and round two coming up!

***Action: The food, specifically the turkey, is broken down into smaller bits.***

There is another rubber band-like sphincter at the bottom of the stomach. This one helps prevent too much from leaving the stomach too soon. Remember, the stomach produces such strong acid it can tear protein apart; do we really want too much of that acid leaking out into the less well-protected, thinner walls of the small intestine?

***Action: The stomach sphincter is emphasized. Food particles and Cynthia escape through it.***

After the stomach, food enters the intestines. The process of food movement from the stomach through the intestines is like a finely-orchestrated car wash.

***Action: Cynthia and the food enter the intestines and move through the intestinal "car wash."***

To aid in the digestion process, the body produces digestive aids. Some of these, you've already learned about. In the mouth, **salivary amylases** help break down carbohydrate starchy foods. The stomach secretes hydrochloric **acid** to breakdown protein, intrinsic factor to help with absorption of vitamin B12, gastric lipase to help breakdown fat, and gastrin to stimulate stomach movement. The liver secretes **bile** that acts like the detergent you use to wash dishes at home to digest fat and make it water soluble. The pancreas secretes water; **digestive enzymes** to breakdown protein, fat, carb; and **bicarbonate** to neutralize strong stomach acid as it enters the small intestine.

***Action: Visuals from previous gems in the lesson pop up as the voiceover discusses the individual digestive aids to show where in the digestive process they arise.***

Gut bacteria play a role in digestion. They help manufacture some nutrients we couldn't make without them. Recent evidence shows that having a positive ratio of beneficial bacteria can be disease preventive; poor ratio, disease contributing. Important gut bacteria are probiotics and

their food, prebiotics. Probiotics are helpful microorganisms found in food like yogurt. Prebiotics are fiber-containing foods that feed the probiotic gut bacteria, such as bananas and cabbages.

***Action: In the intestines, Cynthia's avatar gems to a cup of yogurt (representing a source of probiotics), and then gems to a banana (representing a source of prebiotics).***

In step three, known as assimilation or absorption, small particles of food cross from the digestive tract into the blood. Once in the blood, key nutrients are transported all over the body. The small intestine is the key site for absorbing most calorie-containing nutrients, vitamins, and minerals. Small hair-like projections called villi in our intestines help grab the nutrients we need as they're passing through the small intestines.

***Action: Cynthia's avatar gestures to the villi on the wall of the intestine. The banana and the yogurt, along with parts of the meal the user's avatar was eating, are absorbed by the villi.***

Cynthia's Avatar: That's my cue!

***Action: \*Grumbling noises\* Cynthia's avatar waves goodbye to the user.***

Elimination is step four.

***Action: The user's avatar is now seen again. The avatar enters a bathroom and shuts the door behind her.***

This is when the body removes the waste from undigested food, fiber, gut bacteria, and other materials. ***\*Flush\****

***Action: The door closes and users hear the flush of a toilet from behind it.***

The recycling of water, salt, and bile also occurs in the large intestine, or colon.

***Action: The avatar walks out of the bathroom.***

Now that we've gone through the digestion process, these are a few digestive challenges that can impede in the food digestion process.

***Action: The avatar holds her stomach.***

Dental issues like missing teeth or a sore mouth make it hard to chew food well enough for proper digestion. This can lead to inadequate chewing and poor digestion. Difficulty chewing well may result in eating more soft, highly processed foods and in restricting fresh, healthy fruits, vegetables and nuts.

***Action: The avatar drinks soda. Over time, her teeth decay. A clock in the corner shows the change in time. Discarded empty cans of soda sit in a corner behind the avatar.***



Other digestive challenges can occur when there is too much or too little stomach acid. Sometimes the sphincter above the stomach malfunctions, causing reflux. This sloshing of stomach contents back into the esophagus causes pain and irritation.

***Action: The esophagus is emphasized, showing soda running down the tube and then coming back up through the sphincter.***

Stressors in life can impair the digestive process, influence nutrient use, and speed up or slow down bowel motility.

***Action: The avatar looks unhappy as examples of stressors in life swirl around her head.***

Inadequate carbohydrate digestion due to rapid eating or air swallowing may result in uncomfortable levels of gas/flatulence. The speed of how digestion and absorption occur can also get disrupted, contributing to diarrhea, constipation, and irritable bowel syndrome.

***Action: The avatar holds her stomach and lets out a fart.***

Eating plants and whole grain foods with fluid and fiber generally help the body's digestive process. It's best to add in whole grains and bran gradually as you improve your overall diet. Another easy way to aid our bodies in the digestion process is by using our Rest and Digest activity. To do this, you should slow your breathing and take a mindful moment to appreciate your food before eating. This can help put the go-go-go part of your nervous system on hold so the "rest and digest" relaxed part of the nervous system can promote better digestion.

***Action: The avatar sits at the table, preparing to eat her meal. Before she takes a bite, she takes a deep breath and relaxes.***

## Outro

Now that you have learned about the digestive processes, you may be wondering how you can cooperate with the digestive organs to make the process go smoothly. One example is the "Rest and Digest" activity we just talked about. But you can learn more ways to help out your organs in Part 5.

***Action: The avatar reflects on her experience with the "Rest and Digest" activity.***

To recap, this section talked about the 4-step process of nutrition/digestion; the events that occur once food and drinks reach the intestines, blood, and cells; the biggest calorie user in the body, and the best ways for you to cooperate with your body.

***Action: The clipboard from the beginning displays the steps of digestion, all with check marks next to them.***

# Simulation Testing

Now that you've planned out your meals for your work day, let's take a moment to practice the rest and digest method before you eat your dinner.

***Action: The avatar sits at her table with her meal in front of her.***

First, make your avatar inhale.

\*click "Inhale Button"\*

Then, make your avatar exhale.

\*then "Exhale Button"\*

Repeat and breathe with your avatar this time. A nice full breath in, a long slow exhale.

***Action: The avatar takes a breath in when the user clicks the "Inhale" button. When the user clicks the "Exhale" button, the avatar lets her breath out.***

Now, take a mindful moment to appreciate the food you are about to eat. You might notice the color, beauty, and smell/aroma of the food you're about to eat. Perhaps notice how hungry you feel, or maybe you're very hungry or not hungry at all. Notice your good fortune having this food to eat.

***Action: The avatar takes one more moment before beginning to eat her meal. A dialogue box appears.***

Write in your thoughts during your mindful moment.

***Action: The dialogue box grows as the avatar and her table shrink.***

You have earned X gems! Give yourself a mental joy point! You've checked in mindfully and started your meal with an appreciation and pause. Slow down, even if just for the first 2 bites. Next time you practice eating mindfully even if just for a few bites, feel free to come jot down what you experienced.

***Action: The avatar will do an action such as jump or give a thumbs up. The points by the food will quickly fade into view on the food and health. The health bar will move dependent on the points.***

"Congratulations for completing part four of the module! You have earned \_\_ amount of gems towards a reward. Continue to part five to learn more about the solutions to digestion problems and more applications for better health. "

***Action: Avatar will be jumping up and down while balloons rise from the bottom of the screen.***

# Part 5: Application

## Intro

Part five of this module will be “Application.” In this section, you will learn how to apply and integrate what you have learned in the previous sections to your personal health journey.

***Action: Clipboard with nutrition module unit names appears, with check marks beside the ones completed. When “application” is voiced over, that will appear at the bottom of the clipboard with an empty check***

## Content

Using mindfulness and other skills for stress resilience, moving more, and getting enough quality sleep are some other key factors for health. Mindfulness helps promote both overall wellbeing and better digestion. Do check in with yourself and set your intentions. You can practice mindfulness in eating and hunger awareness, conscious breathing, or mindful movement.

When we get both intensive physical exercise and interrupt sedentary pursuits at work, entertainment or study, we’re boosting mood, reviving our calorie-burning muscles, and improving learning capacity. We make more of the brain-boosting compound BDNF (brain derived neurotrophic factor), when we exercise. So in a roundabout way, exercise helps with learning.

Regular movement, even as little as 30 minutes most days uses blood sugar, burns calories, and prevents the extra calories we eat or drink from being stored as fat. It even boosts mood. If you don’t get enough movement, disease risk goes up and mood regulation is not as positive.

***Action: Avatar is shown with a workout outfit on, walking fast on a track.***

Exercise is necessary for things such as bone health, cardiovascular wellbeing, and endorphins that help with mood and depression.

***Action: Avatar reaches the end of their workout on the track, takes a sip of water, and smiles at their accomplishment.***

Another thing to consider is the amount of stress in our lives. Our brain is wired to respond to for acute short term stress. What we live with in modern life is mostly the longer

term, chronic stress. Continuously pumping out stress hormones destabilizes the entire system, makes it more likely we'll eat unhealthily, and sacrifices good, quality sleep.

***Action: In the background, there is a calendar that months are constantly falling off of to indicate the passing of time. There will also be a window where you can see seasons changing outside of it. As the "stress bar" increases, the Avatar's eyes gradually get wider and hair frizzes.***

You tend to be able to live a healthier, more mindful life if you are able to get at least 7 hours of sleep. Here is where sleep, nutrition, and weight come together. Studies show that getting adequate sleep helps to regulate hormones that govern appetite. If you get too little sleep, you'll be hungering for high calorie foods like pizza and ice cream. Sleep is also beneficial for blood pressure, which helps the brain to consolidate memories and the body replenish synovial and other fluids.

***Action: Avatar getting in to bed and falling asleep. A clock on a nightstand moves 8 full hours.***

It's good to notice your own sleep, eating, and exercise patterns and to take the opportunities to bolster your personal stress resilience skills. Another strategy for mindfulness and health is following the practice of Ahimsa. Ahimsa means non-violent or non-harming. This applies to both ourselves and the planet, its resources, and other animals. Practicing positive self-talk and avoiding negative self-criticism as you make nutrition changes, for example, is a practical and useful way to offer kindness and ahimsa to yourself. We're more likely to keep taking small positive steps when we treat ourselves with warmth and compassion, but less likely with self-blame and shame. Keep this concept in mind as you are deciding on your meals.

***Action: Show definition of Ahimsa. Avatar appears when "ourselves" is stated and then graphics of the earth, trees, and animals appear for the rest of the voiceover.***

Following the 4 pillars of Healthy Eating is another guide you can use to help make decisions on your eating habits. The four pillars are choosing anti-inflammatory foods, eating for blood sugar balance, choosing whole foods, and eating a diet high in plant foods.

***Action: 4 Pillars are shown, as each pillar is stated in the voiceover, it appears on one pillar at a time.***

What are the pro-inflammatory foods? What are the anti-inflammatory foods? Eating big servings of vegetables with a couple fruits per day helps squash chronic inflammation in the body. These are the anti-inflammatory foods. Eating fruit and vegetable superfoods benefits the body and mind. It is best to avoid heavily processed, sweet, and fried foods to prevent inflammation.

***Action: Foods appear one by one on screen; a smiley face on anti-inflammatory foods, and a sad face on foods that cause inflammation.***

To practice the healthy eating information you've learned throughout the module, you will see improvement by logging your good habits and identifying your eating patterns. You've learned in prior segments that pairing a high-fiber starch or grain with a fruit-type food and a low-fat protein like turkey or beans, can help balance your blood sugar and decrease cravings. Avoiding sodas and sugar-sweetened beverages both reduces inflammation and keeps blood sugar stable. You'll find more of the recommended whole foods by shopping the perimeter of the grocery store, whereas the inside aisles feature the more highly processed foods. By doing this, you may find you do more cooking at home.

**Action: Closed notebook on table titled (users name) food log.**

It can also be helpful to learn how to prepare grains and other high fiber carbohydrate foods. As you learned earlier in this module, fixing foods that are low in fat, high in animal protein, and eating lots of plants can help to make you healthier!

**Action: Avatar's hand opens the book and begins writing in Food Log; showing images of turkey and greens.**

Make sure you plan out some meals and snacks for the upcoming 1-2 weeks. After doing this, write your shopping list before going to the store so you can get these items. Even if you plan to purchase some convenience items like frozen meals or pre-made hummus, see what fruits and vegetables you can pair with these foods as well.

**Action: Avatar is checking their grocery list while pushing a cart before going inside the store.**

After you do your grocery shopping, see what is practical for the week ahead. Will it work to assemble or cook what you intended? Remember to give yourself credit for making a meal plan, doing the shopping list, and shopping. Even if you don't make all that you intended, you're on your way to building your nutrition skills!

**Action: Kitchen counter is shown with a top down view. Random ingredients are on the table and the avatar's food log is open with their meal plans for the week.**

The Mediterranean Eating Diet is one way to ensure you are eating properly to promote your health. If you follow the Mediterranean Diet you should follow a structure where you eat at least 2 to 3 servings of vegetables per day. This includes a salad, 2 to 3 servings per day of fruits, 3 servings per week of beans or lentils, 2 to 3 servings per week of seafood, a glass of wine with dinner for some who tolerate or enjoy it, and 1 ounce of nuts or olive oil per day.

**Action: Empty plate is shown. As each food is stated it will appear on the place.**

The Mediterranean eating pattern is also low on red, fatty meat, commercial bakery items, and soda. For people who eat a completely plant-based diet with no meat, fish, poultry or

dairy food, supplements of calcium, zinc and Vitamin B12 may be useful. According to a study published in the New England Journal of Medicine the Mediterranean Diet decreases the risk of heart attack, stroke and death from cardiovascular disease by 30% in their study group.

***Action: Show plate filled with listed food items, they all begin to shrink.***

Remember when we were talking about problems with digestion in the last section of the module? Well here are the solutions we promised you. Some solutions to digestion problems are eating slower, chewing more, and eating fewer types of food at one time.

***Action: Avatar eating in slow motion. This will be shown by 5 minutes passing on the clock in the background before taking another bite of the meal.***

What else should you do when things go wrong with your eating and digestion? Checking in with your health care provider or registered dietitian is always a good idea. For some people, getting things back on track includes eating with simplified food combinations. Eating warm protein food early in the meal may improve communication between the stomach and other digestive organs.

***Action: Avatar putting a protein-rich food item in the oven.***

Constipation and diarrhea can occur as a digestive challenge. To combat constipation, you can consume more water and insoluble fiber, like wheat bran, relax, and add in some mild exercise. For diarrhea, strategies that may help include identifying the source of the issue, eating fewer sugars, quick acting carbohydrate foods, and getting adequate fiber in your diet.

***Action: Avatar leaves bathroom and goes to drink water and eat bran.***

As a note, these are general guidelines for people with normal digestive function. They do not take the place of medical counsel for people with known digestive diseases. Many digestive health conditions benefit from medical guidance.

***Action: Showing the avatar talking to a medical professional.***

## Outro

To recap, in Part 1, Why do I Eat What I Eat?, you learned about some of what motivates us to eat, effective meal and snack planning, and high quality foods that fuel your body.

***Action: Showing icons for each of the points learned. Each icon gets larger as it is discussed.***

In Part 2, What Should I Eat?, you learned about blood sugar, benefits of plant-strong food, how to choose snacks, understanding your eating, and self-compassion.

**Action: This will be shown by 5 minutes passing on the clock in the background before taking another bite of the meal.**

In Part 3, The Timing of Eating, you learned more about food as fuel, the sequence of eating for health, cravings, and the impact eating has on the brain.

**Action: Showing an avatar putting a protein rich food item in the oven.**

In Part 4, The Biology of Eating, you learned about the 4 step process of nutrition and digestion which includes ingestion, digestion, absorption, and elimination.

**Action: Show a plate filled with food items, they all begin to shrink as voiceover continues.**

And in this last part we learned how to apply and integrate all of the previous knowledge. Don't forget to finish the simulation test to complete the health module!

**Action: This will be shown by 5 minutes passing on the clock in the background before taking another bite of the meal.**

## Simulation Testing

Now that you have chosen a snack option in Part 1, chosen components of your dinner in Part 2, planned out the timing of your meals in Part 3, and practiced mindful eating in Part 4, we will combine them all now!

**Action: Cynthia giving these directions, pointing to the last check mark on a clipboard.**

Complete this timeline based on your past knowledge and incorporating the Mediterranean Diet.

**7:00 am : Eat Breakfast**

**Pick option that fits the Mediterranean Diet:**

1. Two over easy eggs with turkey bacon, peppers, and spinach with ½ orange
2. Lucky Charms with milk and a slice of toast with jelly
3. Waffles with berries
4. Granola bar and cranberry juice

**11:00 am : Lunch**

**Action: Making the right lunch choice**

**1:00 pm : Snack**

## **5:00 pm : Mindfully Eating Dinner**

**-Describe your mindful process.**

***Action: Text box enlarges to type in mindful process***

***\*Bolded items are given to the user\****

## **9:00 pm : Bedtime**

***Action: User will fill in what time their bedtime should be based on if they ate dinner at 5PM.***

You have earned X gems! This is a good plan because..

***Action: The avatar will do an action such as jump or give a thumbs up, based on the gems given. The gems by the food will quickly fade into view on the food and health. The health bar will move dependent on the gems.***

If you would have chosen another option you would have earned X gems because ... This choice gives you (more/less) gems than what you chose because....

***Action: As you click the other options the amount of gems it is worth appears beside it with a textual description of the gems given above it.***

Congratulations for completing part five the module! You have earned \_\_ amount of gems towards a reward. You can use these rewards now, or save them up and gain more by completing other Hygeia modules.

***Action: Avatar will be jumping up and down while balloons rise from the bottom of the screen.***

Thanks for going through this module! Make sure to stay tuned for the next one!

***Action: Cynthia's avatar comes on the screen with the user's avatar. Waves goodbye.***

## Changes for Free Module

- Excludes Part 5 of module
- Ending for Part 4 of Free Module:

"Congratulations for completing part four of the module! You have earned \_\_ amount of gems

***Action: Avatar will be jumping up and down while balloons rise from the bottom of the screen***

Thanks for going through this module! If you want to learn more about the application of the material in this module be sure to subscribe to Hygeia Wellness Park!

***Action: Avatar and Cynthia point to subscription button.***