



## Eat Right – What Does That Mean? (🌈 A Physical Health Story) (5<sup>th</sup> Grade – 10-11 yrs.)

This story tries to make sense of what we know (and what we are still learning) about eating to stay healthy.

- 🌈 All animals need to eat to get energy and nutrients that our body and brain needs to survive.
- 🌈 There are so many ideas about **what** we should be eating to keep our body and our brains healthy. The more that we learn about our bodies and our brains, the more we understand the kinds of foods that we should be eating. (note-this information changes as science gives us more info)
- 🌈 There are no good or bad foods, there are just foods that give us what we need and other foods that do not. Taste and society play a big role in what, and even how, we eat.

### 🌈 SLIDE #1 - INTRODUCTION:

Good Morning (Afternoon)!

My name is \_\_\_\_\_ and I (describe who you are and give your relation to neuroscience – ex. you are a Neuroscientist, you study neuroscience, you have a friend that is a neuroscientist or you have recently been learning a lot about neuroscience).

Neuroscience, that's a really big word! But, a neuroscientist is a person who knows a lot about the brain.

I am here today to talk to you about how you can help to make your brain healthy – feeling good. It is REALLY easy and anyone can do it.

I love to talk about Brain Health because it's SPECTacular!!! SPECTacular means "GREAT". When your brain is SPECTacular, you are a happy and healthy person.

This story is about Physical Health – which is the P in SPECTacular. Physical Health means you are keeping your brain healthy because you are taking care of your body.

Being "physical" means you move your body, you eat – to give your body energy and you sleep – because sleeping does a LOT to take care of your body.

When you take care of your body by moving it and giving it the energy and sleep that you need, that also makes your brain healthy.

So, let's see how you can keep your brain healthy.

### 🌈 SLIDE #2 – EAT RIGHT: WHAT DOES THAT MEAN?

This story is titled, "Eat Right: What Does That Mean?". It is a good question.

There is so much information about what we should and should not be eating.

Some of this information comes from scientists.

Some of this information comes from people who are making and selling the food.

Lots of this information is coming from other people who think they may have found the answer to the question – What should we be eating?

The right answer to the question is – we really do not know for sure.

The more we learn about our body and our brain, the more we are learning about what we should be eating to keep our body and brain healthy.

So, the information about how to eat right is always changing. Plus, what is the right thing to eat for one person, may not be the right thing to eat for another person. We are all the same in that we have to eat – but, we are all may be a bit different as to what we need to be eating.

So, let's see what we know right now.

### **SLIDE #3 – SCIENCE**

The first place we need to be looking is at what science is telling us.

Scientists ask questions. Scientists that are interested in eating behaviors ask the question - “Why do we eat?”.

We eat because our body, and our brain, needs energy to be able to do all the behaviors that we do every single day.

We also eat because our body, and our brain, needs nutrients. Nutrients are things like protein, vitamins and minerals that are necessary for us to grow and to stay alive.

Ok, then it should be easy to eat right. All we need to do is eat foods that give us energy and give us nutrients – right? Wrong.

### **SLIDE #4– ENERGY**

Scientists tell us that we need to eat food to give us energy, but the problem is that there are LOTS of foods that give us energy. In fact, ALL foods give us energy.

Some of those foods lets you use the energy right away, but some of those foods have too much energy and so your brain needs to store it.

Storing energy can be a good and a bad thing. We know bears eat a lot of food before they hibernate. The energy gets stored so that they can use it during the winter when there is not a lot of food available.

The best way to eat would be to keep enough energy in our bodies to let us do what we need to do when we need to do it.

So, you would eat – do something – eat – do something. You would eat just enough to be able to do what you needed to do.

The problem is most of us cannot be eating all the time and most us do not know how much we need to eat to do certain behaviors.

**QUESTION:** Do you know how much you have to eat to give you the energy to do all the schoolwork you have to in the morning?

Of course, you don't – neither do I. Plus, everyone is different.

### **SLIDE #5 – STORING ENERGY**

Because we do not know how much we need to eat to do lots of behaviors that we do, the brain has come up with a way to store energy – it stores some energy in your muscles and liver.

Storing energy in your muscles and liver is a short-term way to store energy. But, you can only hold about a day's worth of energy in your muscles and liver.

Most of the energy gets stored in fat cells. Now, everyone has fat cells. Even someone who looks really thin – has fat cells.

You can store energy in fat cells for a longer period of time. Your brain needs energy to do all the work you have to do, so your brain makes sure that some energy is stored in fat cells.

Because we cannot eat all the time, we eat more than we need to eat and our body stores the energy – mostly in fat cells.

### **SLIDE #6 – STORING ENERGY**

Our brain and our body need energy all the time. Being able to store energy means we do not have to eat all the time and if, for some reason, we do not have food to eat – we can still do the behaviors we need to survive.

Storing energy in fat cells means that our energy levels are kept at a high level. But, there are problems with getting our energy from our fat cells – it makes your body and your brain work harder.

When you get energy from fat cells, your body and brain are working harder to get you the energy you need to survive and that is taking a toll on both your body and your brain – making it less healthy.

Plus, storing too much energy in fat cells means there is too much fat in our body and that is not always healthy. Having too much energy in fat cells will also take its toll on other organs in our body.

### **SLIDE #7 – LISTEN TO YOUR BRAIN**

Our brain could tell us when we need more energy, so we would not have to get our energy from our fat cells – but, we need to listen to our brain.

When we are hungry our stomach sends a signal to our brain. Our brain notices these signal and makes us start to think about getting food.

Your brain needs lots of energy to keep you alive. 20% of the energy we need every day is just for our brain!

Your brain does not want to run out of energy – like a car running out of gas. It needs energy to keep you alive.

So, if you are always hungry because you are not eating – then your brain actually makes you eat more food than you need so that your body can store the energy in fat cells. (think about bears and how much they eat before they hibernate)

Eating right means listening to your brain.

Eat when you are hungry and just eat until you are no longer hungry.

One way you can figure out when you are no longer hungry and you no longer need energy is to eat slowly, so you can listen to your brain.

Eating slowly gives your stomach time to tell your brain you are full.

Your brain will learn how much energy you need to do things and it will help you to eat the right amount of food to give you the energy you need to do all the things that you need to do during your morning at school.

## SLIDE #8 – FOOD & ENERGY?

Wait a minute...if food is supposed to give us energy, then how come when we eat too much we get tired?

Think about it, after eating a big meal – like on Thanksgiving – you are ready to take a nap. Or, at least you are ready to just lounge around and watch tv or play video games. Did you ever wonder why?

It turns out that when you eat too much food, then your body needs to digest that food and turn it into stored energy – like in your fat cells. The energy from the fat then gets moved around your body in your blood – so your heart starts pumping your blood.

You need all your energy going into your gastrointestinal system (the part of the body that digests and stores your food). So, your heart pumps your blood to the stomach and intestines and not enough energy goes to your brain – so you get tired.

## SLIDE #9 – NUTRIENTS

Ok...the next thing we need to consider is eating food to get the nutrients – protein, vitamins and minerals – we need to help our bodies work and grow.

We know that you need protein in your diet to help your body repair cells and make new ones.

You need vitamins and minerals because they work together to keep your bones strong, to help your body to take care of itself and fix things when they are damaged.

## SLIDE #10 – PROTEINS

Every single cell in your body and your brain is made up of proteins.

Proteins are made of amino acids. Our body needs 20 different amino acids.

There are 9 amino acids that our body cannot make itself (known as essential amino acids), so we need get those amino acids in the proteins that we eat. Foods like meat, eggs, quinoa and soy (beans) contain all of the essential amino acids.

## SLIDE #11 – VITAMINS AND MINERALS

There are lots of different vitamins and minerals that we need to get from food to help us grow and stay healthy.

Scientists are still not sure about **what** vitamins and minerals we have to eat to help us grow and stay alive. Scientists are also not sure **how much** of the nutrients we have to eat.

Every day we are learning more and more about the vitamins and minerals that we need to get from the foods that we eat.

So, how then do we know what foods to eat?

If you eat a diet that contains fruits & vegetables and proteins, you should be getting all the vitamins & minerals that you need. (Remember, though that as scientists learn more this information may change.)

## SLIDE #12 – MY PLATE

The current understanding by scientists is that in order to keep your body and your brain healthy you should eat from the 5 food groups every day.

Fruits – apple, bananas, berries, grapes, kiwi, orange, peach, pineapple

Vegetables – broccoli, carrots, green beans, lettuce, peas, potatoes, sweet potatoes

Proteins – poultry, nuts, fish, pork, eggs, beans, tofu, peanut butter

Grains – bread, bagel, cereal, pasta, oats, tortilla, grains, barley, rice, crackers

Dairy – cheese, yogurt, milk and milk products (ice cream)

Scientists are currently recommending the MyPlate way of eating (<https://www.myplate.gov/>).

Using a “plate” as a guide,  $\frac{1}{2}$  of what you eat each day should be fruits and vegetables,  $\frac{1}{4}$  of what you eat each day should be grains,  $\frac{1}{4}$  of what you eat each day should be proteins and you should have a serving of dairy each day.

Serving sizes will vary, but there is a good portion control guide from <https://goodfoodgoodmove.yourtexasbenefits.com/plan-meals/whats-your-plate> this essentially uses your hand (which varies) to gauge the size of your portions.

## SLIDE #13 – BIG PROBLEM

One of the biggest problems with eating right is that people who make and sell food **WANT** you to eat more than you need to and they want you to eat foods that may not be giving you all the right nutrients.

This is because they want to make money. So, they make foods taste really yummy and they give you more food than your body or your brain needs to stay alive.

Remember, your brain – while it can “tell” you what you need in terms of energy and nutrients – it likes to be happy. Yummy foods make your brain happy, so this is a time when you need to be helping your brain to help you eat right.

## SLIDE #14 – TAKE HOME MESSAGE

While there are no good or bad foods, some foods are full of nutrients that your body and brain need to be healthy. Some food – and there are lots of them - do not give you the vitamins and minerals that you need to stay healthy.

Both of these foods give you energy – but the sugary foods may give you too much energy (and that energy usually gets stored as fat cells).

2 things to remember...

1. You can eat all kinds of foods – just know that some (like the yummy sugary foods) should be eaten a little at a time (moderation is key). They do not give you nutrients you need and they fill up your stomach so you are not hungry for the foods that DO give you nutrients.

2. Foods that are healthy (are ones that give you nutrients) can also be yummy – you just need to know how to cook them!

### SLIDE #15 – EAT RIGHT

So, when someone says “Eat Right” they are telling you to make sure that you are getting the nutrients (proteins, vitamins and minerals) that your body and your brain needs to stay healthy.

Eating Right also means that you are giving your body and your brain the energy that it needs to do all the behaviors you need to do to stay healthy and alive.

Thinking of putting the food that you eat all day on a “plate” – ½ for fruits and veggies, ¼ for grains, ¼ for proteins and then have a side of dairy.

If you are really good at listening to your brain, your brain will “tell” you what nutrients need. How?!? You may ask...cravings.

When your body **really** needs some nutrients, then you will crave foods that contain those nutrients.

Now, remember...if someone says they are “craving” gummy bears – not a lot of nutrients in gummy bears so they are not really craving gummy bears – they just really WANT gummy bears because they think they are yummy!!! And...that’s ok, as long as you eat the gummy bears in moderation.

### SLIDE #16 – CONCLUSION

Thank you all for letting me talk to you about what we know about eating right - now.

I have enjoyed spending time with you today talking about the brain. I hope that you have had some fun and learned something about your brain.

REMEMBER, if you listen to your brain then you will understand what **your** body and brain need in terms of energy and nutrients. You can then figure out what is the best way for you to eat healthy. Helping your body and your brain stay healthy is SPECtacular.

**THANK YOU SO MUCH FOR ALL OF YOUR HELP!!! Brain Health is not just SPECtacular...it is FUN!!!**