



Importance of SPECTacular Brain Health in Adolescence (🌈 A Brain Health Story) (5th Grade – 10-11 yrs.)

This story describes the importance of focusing on all aspects of brain health as hormones enter the picture.

- 🌈 Adolescence marks a major change in the way that your brain works. Hormones cause changes in behavior because they cause changes in both the structure and function of your brain.
- 🌈 It is important to learn how hormones affect your SPEC health and to remember all the ways we have to cope with changes in our SPEC health during adolescence.
- 🌈 Understanding the importance that SPEC plays in keeping your brain healthy is especially important during this transitional time in life. By helping your brain to stay healthy, it also helps you to stay happy and healthy.

🌈 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).

A neuroscientist studies the brain. So, I am here today to talk to you about how you can help make your brain healthy. It is REALLY easy and anyone can do it.

This program is called Brain Health: It's SPECTacular. You feel SPECTacular when your brain is healthy. You can be a happy and healthy person by knowing more about your brain and how it works!!

Plus, to spell SPECTacular you need...S – P – E – and C.

To keep your brain healthy, you also need S – P – E – and C.

The 1st thing that helps your brain stay healthy is loving yourself and loving others – being **Social**. That is the **S**.

“Being social” means you love yourself and you are nice to yourself.
It also means that you like and are nice to other people.

The 2nd thing that helps your brain stay healthy is taking care of your body – that is being **Physical**. That is the **P**.

Being physical means you move your body, you eat – to give your body energy, and you sleep – because sleeping lets your body rest.

The 3rd thing that helps your brain stay healthy is understanding about how you “feel” – **emotions**.

That is the **E**.

There are lots of emotions. Being happy, sad, surprised, disgusted or mad. These are all emotions that we can feel and experience.

Understanding that we have emotions and how we control our emotions is very important to making our brain healthy.

The last thing that you can do to make your brain healthy is to think...and not just when you are in school. **Cognition** - that is the **C** – is a big word that means being able to think.

Your brain is thinking all the time!

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

SLIDE #2 – IMPORTANCE OF SPECTACULAR BRAIN HEALTH IN ADOLESCENCE

As you get older, your world changes – both inside and outside of your body.

Some people like when things change and others do not.

Changes can be exciting, and they can also be scary.

One of the things that we know is that when your brain is healthy, it makes it easier to handle all the changes that are going on in the world. This is the reason why this story, Importance of SPECTacular Brain Health in Adolescence, will help you during this time in your life.

SLIDE #3 – WORLD AROUND YOU CHANGES

As a 5th grader, there are many changes that are going on in your world.

You may be getting ready to go from elementary school to middle school.

You have more access to electronics – like cell phones, tablets and computers. This means you have more access to the world and the world has more access to you.

You may have more responsibilities – like taking care of younger brothers and sisters and doing more chores.

You may have more interests outside of home and school – like sports, music, art – which take up more of your time. This means that you have to prioritize your time to make sure everything gets done.

These are just some of the things that may be going on in the world around you.

SLIDE #4 – WORLD INSIDE YOU ALSO IS (OR IS GOING TO BE) CHANGING

There are changes that are going on in your body as it grows and these changes are happening both inside and outside of your body.

As your body and your brain grow, they are also changing.

You find that things that you used to like, you may not like anymore.

You may find that you are always hungry and always tired.

You may find that your emotions are changing. Again, things that did not used to bother you – bother you, like sharing your toys with your brother.

What the heck is happening?!?

SLIDE #5 – BRAIN IS DEVELOPING

Just like your body grows as you get older, so does your brain.

We have talked about how your brain is made of lots of cells – called neurons – that are always talking to each other using chemicals.

One part of the brain, a tiny little area called the hypothalamus which sits at the bottom of your brain, is really starting to receive chemicals from your growing body.

The chemical signals that the hypothalamus receives from the body causes it to release special chemicals into the blood – called hormones.

These hormones travel in the blood to different parts of your body, and they are the chemicals responsible for changing both your body and your brain.

SLIDE #6 – BRAIN CHANGING

Because these hormones change your brain, they are also going to change your behaviors.

The parts of the brain that these hormones are changing are the parts of the brain that are responsible for your social, physical, emotional and cognitive health – or your SPEC health.

So, this means that the hormones are changing the social, physical, emotional and cognitive behaviors that the brain areas control.

SLIDE #7 – ADOLESCENCE

You may be asking yourself...Why the heck are these hormones doing all this to my brain?

The answer is that the hormones are changing your brain so your behaviors can change. These changes in your brain and behaviors are getting you ready to be an adult.

You are entering a stage of your life where you are going to be considered an adolescent.

An adolescent is the age when you are changing from a child into an adult. This is mainly due to the hormones that are being released by your growing brain.

This phase will last through middle school, high school, and then college. This stage will last until your early to mid 20's.

Adolescence is defined scientifically as the time that hormones are playing a particularly big role in your brain and behaviors.

Because this is a phase that lasts a while and changes your behaviors (sometime dramatically), it is important to know how you can help your brain by taking care of your SPEC health.

Understanding what these hormones are doing to the parts of the brain responsible for your SPEC health will help you to deal with these changes in behavior in a healthy way.

If you understand why you are feeling and behaving the way that you are – then you can come up with strategies to protect your SPEC health.

SLIDE #8 – WE ARE ALL THE SAME AND DIFFERENT

Another thing to consider with all of these changes that are going on in the world both in and outside of your body, is that everyone is the same and different.

Everyone obviously has a brain and a body, but we are all different too.

The timing of when hormones are going to be released from our brain to cause changes in our bodies is different.

The kinds of hormones that are being released by our brains are going to be different in different people.

Plus, the amounts of hormones being released by our brain is also going to be different in different people.

All of these differences are going to cause differences in how the body, brain and behaviors change. Oh my...there is soooooooo much going on!!!

SLIDE #9 – CHANGES IN SOCIAL BRAIN & BEHAVIORS

As the social parts of your brain are changed by the hormones, your sense of who you are (sense of self) and how you feel about yourself (self-esteem) are constantly changing. This is a time when you really need people around you whom you trust and can talk to (your support system).

One of the big things that happens during this time is that your friends become more important to you.

This is a time when you need to understand that your self-esteem is not tied to how many friends that you have or if other people like you or not...it is tied to how well you like yourself.

As we will see, because the hormones are also changing the cognitive parts of our brain, we may not be making the right decisions about who we choose as friends (or those people we bring into our support system).

Because we are so obsessed with having lots of friends and keeping our friends (thank you social media – not!), we are not always making sure to choose friends that we can trust – or that we really even like.

Social Health is all about liking yourself and feeling good about yourself (or having good self esteem). When you like yourself and feel good about yourself, then you will make good decisions about what kind of friends you want around you.

SLIDE #10 – COPING WITH CHANGES IN SOCIAL BRAIN AND BEHAVIORS

While these hormonal changes are going on and affecting our social behaviors, it is REALLY important to talk to other people in our support system (parents, teachers, coaches, family) – not just our friends.

Remember, your friends are also experiencing changes in their brains due to their hormones, so they may not be making the best decisions.

Take care of your Social Health by reminding yourself of your self-worth.

Continue to do the things that you know that you are good at – whether it is in or out of the classroom. We all have talents and using our abilities will help you to feel good about yourself while your social environment is changing.

Help others by sharing your talents. We all know that helping others not only helps them – but, it helps us feel good about ourselves too.

It is important to realize that how we “see” our social environment may be colored by the hormones affecting our social brain areas. Keep reminding yourself about that and keeping doing the things that make you really feel good about yourself.

SLIDE #11 – CHANGES IN PHYSICAL BRAIN & BEHAVIORS

Because your hormones are getting your brain ready to become an adult, your brain and your body are working extra hard. This means the hormones are going to have an effect on your Physical Health.

This means you need more energy, which is why you may be hungry all the time. This may also be why you are “craving” certain foods.

Remember, your brain “knows” what it needs and if you listen to it – you can give your brain the energy and nutrients that it needs.

SLIDE #12 – CHANGES IN PHYSICAL BRAIN & BEHAVIORS

This is also a time when you need more sleep, so your body and your brain can prepare for all the changes caused by the hormones.

Unfortunately, while you need more sleep during this time, there are lots of factors that not allowing you to get the sleep you need.

Most middle schools still start earlier than elementary school (although this is starting to change based on scientific information) – so you need to get up earlier to get to school on time.

You also have more demands on your time – homework, chores, extracurricular activities. In order to get everything done, you end up staying up later.

So while our body and brain NEED sleep, we may not be getting enough of it.

SLIDE #13 – CHANGES IN PHYSICAL BRAIN & BEHAVIORS

This is a time when your body is going through **growth spurts** – so you may be feeling achy – this is why they call them “growing pains”.

If you combine your “growing pains” with the stress from all of the changes in your social, emotional and cognitive behaviors, then this is a time when your body really needs to be moving.

Unfortunately, this is also a time when there are lots of other demands on the time that we have and moving our body becomes less of a priority.

SLIDE #14 – COPING WITH CHANGES IN PHYSICAL BRAIN AND BEHAVIORS

Because you are constantly hungry, tired and achy and stressed, this is a time when you really need to focus on your Physical Health.

You need to remember what you have learned about eating right. Now is a time when your body really needs food that gives you both energy and nutrients.

Making sleep a priority and coming up with regular sleep habits will actually help you with all of the other hormonal changes in your behaviors.

Moving your body every day by doing something – whether it is taking walks, playing sports or exercising – will help to relieve your growing pains and your stress.

Taking care of your Physical Health will help your brain throughout adolescence and will help you to develop good habits to carry throughout your life.

SLIDE #15 – CHANGES IN EMOTIONAL BRAIN & BEHAVIORS

The changes that the hormones have on the emotional parts of your brain affect the way that you “see” the world. This has an effect on your motivation to do certain behaviors.

Because of the changes the hormones are making on our brain, this is a time when we do not always understand how we are feeling.

Why do we feel sad when one of our friends decides to sit with someone else? Why do we get mad when we drop the books we are carrying? Why are we mean to our family members whom we love?

For some reason, our hormones make us feel lots of negative emotions.

SLIDE #16 – CHANGES IN EMOTIONAL BRAIN & BEHAVIORS

Adolescence is also a time when you are not exhibiting good control of your emotions.

While you may not have had a temper tantrum since you were a toddler, you find that certain things drive you crazy and you cannot control your anger...an adolescent temper tantrum.

Your classmate is clicking the top of their pen and the sound is extremely annoying to you. Instead of asking them politely to stop clicking the pen, you shout at them from across the room “STOP THAT CLICKING!!!!”

Or, something happens (like when your friend sits with someone else, or you drop the books you are carrying, or someone wants to know what happened during your day). You do not know why, but you are suddenly filled with negative emotions. Maybe you are embarrassed or sad – but, to cover up how you are really feeling you start ranting and raving and acting all mad.

These are examples of you not being able to control your emotions due to the changes your hormones are making on your brain and your behaviors.

SLIDE #17 – COPING WITH CHANGES IN EMOTIONAL BRAIN AND BEHAVIORS

While it is easy to just blame your hormones for your emotional outbursts, that will not help you or your emotional health.

There are lots of different ways to help your brain during these trying times. The first step is to be able to recognize how you are feeling about something may be a different from how you would normally feel – your hormonal brain tends to feel more negative emotions instead of positive ones.

Let’s say your teacher announces that recess will be held inside due to rainy weather. Normally, you feel disappointed about not being able to play basketball outside but are still excited about being able to play a card game with your friends. But today, this announcement makes you very angry. It’s only sprinkling outside. You just do not understand why your teacher will not let you go out. A little water never hurt anyone!!! You are so angry; you want to argue with your teacher and get her to take you outside.

The next step – to avoid an adolescent temper tantrum - is to use a coping mechanism – breathe in and out slowly, count to 10, etc. – use whatever strategy works for you to help you deal with the fact that you are emotionally overreacting.

You should also talk to people in your support system about the way how you are feeling about things is affecting your behaviors. They can offer you help in trying to deal with the situation.

In some cases, you may need to get help from a professional – and that is OK. Emotional issues during adolescence may trigger a disorder that you cannot handle by yourself.

You need to understand that emotionally you are overreacting and you – along with help from others – need to figure out what you can do to control your hormonally challenged brain and behaviors.

SLIDE #18 – CHANGES IN COGNITIVE BRAIN & BEHAVIORS

When it comes to your cognitive behaviors, hormones can cause you to think differently.

The effect that hormones have on your brain may change your perspective (or the way you see) certain things and may change your decision-making skills.

This change in your perspective caused by hormones may affect how you think about people (you are more attracted to other people), things you like to do (you may have been afraid to go on a rollercoaster, but now you love them), and things you eat (you may not have liked broccoli before, but now you love it).

SLIDE #19 – CHANGES IN COGNITIVE BRAIN & BEHAVIORS

Due to the hormonal changes in your brain, your decision-making ability may change. The change in your decision making caused by hormones may cause you to engage in risky behaviors.

You may do things like jumping into the lake from high rocks, racing cars in your neighborhood on your bike, attempting difficult tricks on your skateboard – without a helmet to protect your brain, or playing ball near a busy road.

You should know that engaging in risky behaviors is due in part to evolution.

Adolescence is the time when humans – especially in the caveman days – used to go out into the world on their own. Being able to get food would often require taking a risk – hunting animals. If you did not take the risk, you would starve and not survive.

While we no longer live in caveman days, as an adolescent our brains are not fully developed yet and we are under the control of hormones, so we still take risks like the cavemen. We need to understand where this risk-taking behavior comes from and guard against it.

While the risky behaviors we take may not be “life and death” like the caveman, you may ignore obligations that you used to always do, so you can do other things. Even though you know you are supposed to do your chores, you decide to play video games instead.

You may be hyper focused on doing your schoolwork – which does not sound like a bad thing...good for your Cognitive Health – but, you obsess over doing your schoolwork and you do not pay attention to other aspects of your SPEC health.

Making bad choices can affect your brain health in lots of different ways.

SLIDE #20 – COPING WITH CHANGES IN COGNITIVE BRAIN AND BEHAVIORS

One of the ways to cope with hormonal changes in your cognitive behaviors is to **understand** that the way you think may be changing.

Remember your perspective – or how you see the world changes - and your decision-making skills are both changing.

This means you need to stop and take time to think before you decide on something. Remember that the way you are thinking may be changed due to your hormones. So, your first thought or decision may not be the right one.

You need to stop and think about what the outcome of your decision will be. (Should you jump off the cliff into the water just because your friend dared you to do it?)

You will need to think of the pros and cons of your decisions. (It could be fun jumping into the water off a cliff, but is the water deep enough, can you swim, are there rocks in the water?)

While this may seem like a lot to do just to make a decision (stop, think and consider pros and cons), it will actually help your brain to get used to the process of making good decisions.

SLIDE #21 – COPING WITH CHANGES IN COGNITIVE BRAIN AND BEHAVIORS

You can always double check yourself when you make a decision or if you are uncertain about whether or not you are making a good decision, you could talk to people in your support system.

As these are people that you know and trust and who know you, they may be in a position to know if you are making a good choice.

The more good choices you make, the easier and the more confident you will be in making future decisions. Plus, the healthier your brain will become.

SLIDE #22 – ADOLESCENCE

Adolescence is a stage in your life that is both exciting and scary at the same time. There will be lots of changes in the world around you and in the world inside of your body.

Your brain and your body are growing up and the hormones that are being released will change your behaviors.

Understanding how these changes in your body, brain, and behavior will affect your SPEC health will make the transition into becoming an adolescent a lot easier.


Socially, you want to protect how you feel about yourself. If you like yourself and are confident in your abilities, then others will like you as well.

Physically, you want to be sure that you are giving your body and your brain the energy and nutrients, the sleep, and the physical activity that you need to be physically healthy.

Emotionally, you need to identify your emotions and continue to learn how to control the hormonally driven emotions.

Cognitively, you want to realize the hormones can change the way that you are thinking and cause you to act more impulsively. Stop and think before you decide on anything.

Take care of your brain as it is being changed by hormones and you will be healthier because of it.

 **SLIDE #23 – CONCLUSION**

Thank you all for letting me talk to you about the importance of SPECTacular Brain Health in Adolescence.

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, adolescence is another stage in your life when both your body and your brain are growing and changing. Hormones are changing your brain and the way that you think. Hormones are affecting how you see things and the kind of decisions you are making and you are more prone to engage in risky behaviors. You need to understand that the hormones are affecting your social, physical, emotional and cognitive health. Before making decisions you need to stop and think. Once understand how your hormones are affecting how you think and feel, you can better control your behaviors. This helps your brain which we know is SPECTacular.

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