

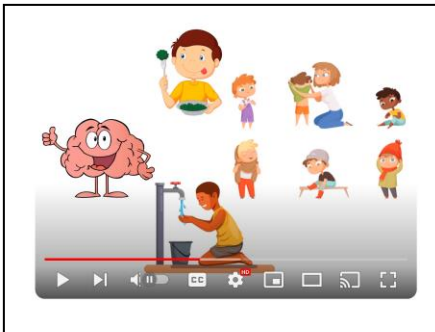


Brain Health: It's SPECTacular

## What to do TODAY Grade 4 (🌈 A Physical Health Story)

Your body is made of lots of muscles, so it only makes sense that our bodies were made to move. This story is about how your body moves and how using your muscles to move your body makes both your body and your brain healthy.

- 🌈 You may have heard the phrase “use it or lose it”. “Use it or Lose it” definitely applies to the muscles of our body and the parts of our brain that move these muscles.
  - 🌈 Moving our bodies causes chemicals – endorphins – to be released in our brain. These chemicals do lots of different things that help our body and our brain.
  - 🌈 You may have also heard the phrase “muscle memory”. If you have, FORGET ABOUT IT! There is no such thing as muscle memory – it is cerebellar memory.
- 🌈 For this presentation, you need to have the “Move It or Lose It” Story Video and you will need to download <https://www.weareteachers.com/funny-videos-for-kids/>. You will also have the students doing an experiment which shows how moving your body has an effect on your brain – causing it to be happy and healthy. For the experiment, you will need a wall that students can lean against and one of the presenters having a way to time the students.
- 🌈 Start the story video at ~7:41 mark at the end of this slide.



Remind the students that last time they learned a little bit more about how and why are muscles work to keep our body.

Muscles are connected to bones and they move so that your body moves to help your brain get the things it needs to stay alive.

Your body has to move to get food, water, put on clothes to stay warm, etc. So, moving is very important for your survival which is important for the health of your body and your brain.

Today we will see HOW moving our bodies with our muscles also makes our **brain healthy**.

🎨 Play the story video and stop at the end of the following slide.



Say...OK...that was a LOT of information. Let's see what we know so far...

When your muscles are working, they are either moving your bones to make you move or they are working to hold you up when gravity wants to pull you down.

When your muscles are **working**, it causes your brain to release chemicals. 2 of these chemicals are called endorphins and endocannabinoids – 2 BIG words.

These endorphins and endocannabinoids – make YOU feel happy. So...using your muscles, whether you are moving or just using your anti-gravity muscles makes you feel happy.

That is why using your muscles, walking, running, or doing yoga when you are feeling sad will make you feel happy...it is the endorphins and endocannabinoids that your muscles working cause your brain to release...making your body and brain feel GOOD.

🎨 Continue playing the Story Video and stop after this screen.



Ok...so now we are going to do an experiment to help show you that being happy – which will also release endorphins and endocannabinoids – can help your muscles to work – even when they are tired.

Let me ask a question – whose brain do you think would be releasing endorphins and endocannabinoids...someone who is crying or someone who is laughing??? Raise your hand if you think it is someone crying. (shouldn't be a lot of hands) Raise your hand if you

think it is someone laughing. (should be LOTS of hands).

Of COURSE!!! Someone who is laughing is usually happy and so their brains are releasing endorphins and endocannabinoids.

We are now going to do an experiment. The experiment is going to involve you using your muscles until they are tired and stressed out and then we are going to get your brain to release endorphins and endocannabinoids – by laughing – to see if this helps your tired muscles to work.

🎨 The experiment is called **Laughing Away the Pain**. (Keep in mind that you still have about 7 minutes left of the Story Video.)

1. Move the volunteers over to the wall and demonstrate “sitting” against the wall.
2. Ask for some volunteers. (If all the students want to do it, you may need another wall)
3. Tell the students that you will say “BEGIN” and they will need to get in the sitting position.
4. Tell the students that you will be looking at the clock to see how long the students can “sit” in this position. (Note – the time for a wall sit is about 1 minute.)

5. Then have the students laugh (be sure you are laughing too) by watching one or more of the following clips on <https://www.weareteachers.com/funny-videos-for-kids/>.
  - Lego's Star Wars You Can't Touch This
  - Buzz and the Dandelions
  - Taylor Swift Goats
6. Repeat steps 3 & 4.
7. Most students should be able to hold a wall sit longer.

Explain to the students, that by laughing this causes their brains to release endorphins and endocannabinoids which helps tired muscles to work better (longer) even when they have been stressed out and are tired.

- 🎨 Continue playing the Story Video and stop after this slide.



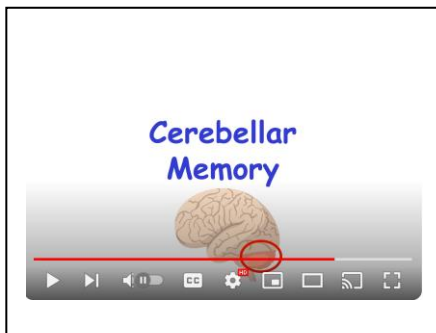
So...now we KNOW the part of the brain that stores memory for movements is called the CEREBELLUM.

That is a BIG word for the part of your brain that is in the back of your head.

Let's all feel where are cerebellum is...

Tell the students to feel the back of their heads. Have them find the bump at the bottom. Tell them that is where the cerebellum sits AND we now know that that is where the memory for our movements is in our brain.

- 🎨 Continue playing the video and stop the video after Dr. Gorman says, "Say It with me – cerebellar memory".



Ok...so let's do that again...There is NO muscle memory...there is just...WHAT??? CEREBELLAR MEMORY!!! (repeat this a couple of times)

That is right and where do we store our memory of HOW to do movements???? Say it all together....in the...WHERE??? CEREBELLUM.

That is right...Dr. Gorman would be so PROUD of you!

- 🎨 Continue playing the video and stop after the following slide and end the presentation.



Tell the students that they now know that muscles work by relaxing and contracting.

Sometimes muscles work by moving our bodies – by pulling on our bones – and sometimes our muscles work by keeping us from being pulled by gravity.

REMEMBER, your body is made of lots of muscles and your muscles are there to be used. When it comes to our body, we need to “move it or lose it”. The endorphins and endocannabinoids that your brain releases when you are moving your body helps both your brain and body stay healthy.

Tell the students that you had fun talking with them today and ask them if they had fun learning.

Be sure to thank them for listening and the Brain Health Team of JHU students will see them soon.