

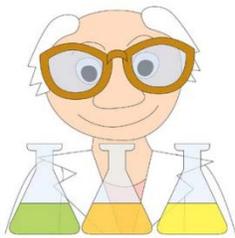
Preparation for MRI Scanning

Thank you for agreeing to participate in a MRI Scanning study! MRI is a process by which we take a picture of your brain using a camera that is so big that you need to get inside! This is what an MRI scanner looks like → → → → These pages will help you learn a little about MRI scanning and give you some ideas for how to practice for your own scan. Remember, you can always ask questions!



About the Brain

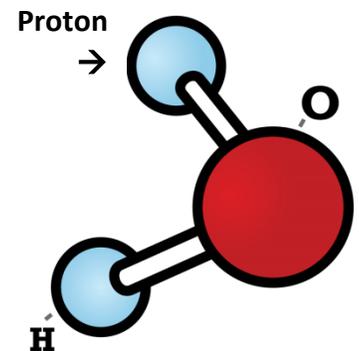
Before we prepare for MRI scanning, let's talk a little about the brain. Here are some important facts for Junior Scientists like you!



- Your brain uses 20% of your body's energy, but it makes up only 2% of your body's weight
- The brain feels like a ripe avocado or a sponge and looks red because of the blood flowing through it
- Your brain weighs about 3 pounds (1,300-1,400g), is about the size of a cantaloupe, and wrinkled like a walnut
- The entire area of your skin weighs three times as much as your brain
- The brain of a small dog, like a beagle, weighs about 0.16 pounds or 72g, and a cat's brain weighs only about 0.07 pounds or 30g
- A newborn baby's brain grows almost 3 times in its first year of life
- Humans have the most complex brain of any animal on earth
- Your brain is divided into two sides. The left side of your brain controls the right
- The human brain is about 75% water

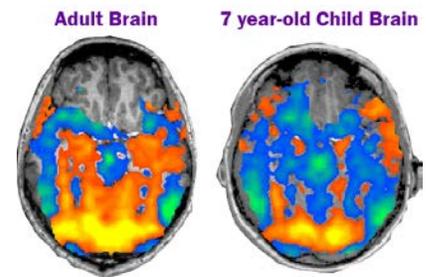
How do we take a picture of your brain?

Your brain is largely composed of water molecules. Each water molecule has two protons. When a person goes inside the powerful magnetic field of the MRI scanner, these protons change and align with the direction of the field. Inside the MRI scanner a radio frequency transmitter is briefly turned on, producing an electromagnetic field. This field can flip and spin the aligned protons in the body. The MRI scanner then detects the electromagnetic signal of the aligned protons and takes a picture to reproduce an image of your brain! After the MRI scanner is turned off, the protons go back to their original position.



Does my brain look different from an adult brain?

Yes, children's brains and adult brains look different because the child brain is still growing. Take a look at this picture of both a 7-year-old child's and adult's brain. You can see that the brains are different shapes and that they have different activity patterns (shown in the colors). It will be really cool to see what your brain looks like!



What should I wear on scan day?

Make sure to wear warm and comfortable clothes. It is very important that your clothes have no metallic parts (ex. zippers, snaps, rhinestones). You can wear sweat pants or pajama pants! Also, make sure that you have no makeup on and remove all of your jewelry. If you usually wear glasses, let us know what your prescription is and we can give you glasses that are safe to wear during scanning. It can be a little chilly in the scanner, so make sure to bring socks. We will give you a blanket to keep you warm!



What does taking a picture of your brain feel like?

Taking a picture of your brain is safe and painless. Nothing will hurt at all. You will lie on a little bed with a blanket and pillow. You can even bring your own from home, if you would like! The MRI scanner does make loud noises, but we will give you earplugs so that the noises are not too loud. Some people even fall asleep while we take their brain picture, but it's really important that you stay awake!

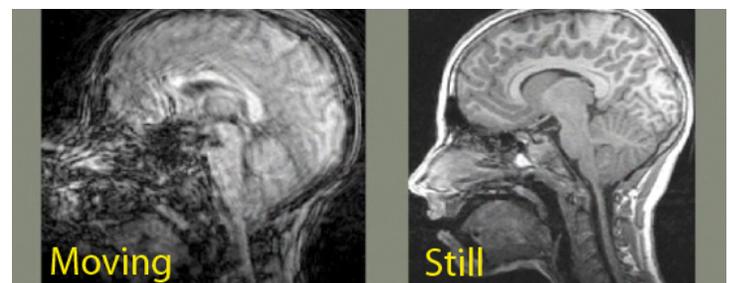
What will I do while you take a picture of my brain?

Taking a picture of your brain is fun! Inside the MRI scanner, you will have a video screen and a controller to play cool computer games! We'll practice the games with you before we take the picture. You will also watch short movies or parts of a longer movie. You can choose from our children's movies or bring your favorite DVD from home. If we get a good picture, we'll give you a picture of your own brain that you can take home!



How can I make sure to get a good brain picture?

There are many ways to practice taking your brain picture. The first thing you should do is watch this video (<http://www.lcbd.pitt.edu/fmri.html>). It tells you all about what an MRI scan is like! You'll see a little boy do a scan and get a cool picture of his brain.





After you have watched the video, you'll want to practice lying inside the scanner. Have you ever taken a picture of somebody running or jumping? When you see the picture, you notice that it's blurry, right? Well, the brain camera works the same way. Take a look at the pictures above. Here, the same person was in the MRI scanner, but on the left, he was moving. On the right he was lying very still. We want you to have a clear brain picture like the one on the right!

There are many ways that you can practice lying still inside the brain camera. You can practice lying in your bed and not moving before you go to sleep at night. You can also lay still on the floor while you watch TV. This will be great practice because in the scanner, you will also be watching movies and playing computer games. Remember that you will be hearing some loud noises, but we will give you ear plugs to help keep the sound low and some pillows to keep your head from moving.

You can also practice by playing the "Statue Game". You can move around a lot, but every time your partner says "STATUE!" you have to stop moving and be really still, like the Statue of Liberty! You'll need to be a statue the whole time that you are in the scanner.



Will I get to practice inside the camera before my big brain scan?

Yes, you'll get to practice at our laboratory. We have a practice scanner that looks and sounds exactly like the real one. Inside, we have a special headband that tells you how much you are moving! You'll get to practice inside the practice scanner for as long as you'd like. You can even watch a movie inside and practice the computer games. Remember, you can always ask us any questions any time!



We're looking forward to seeing you at your appointment on _____.
Please feel free to contact us at 412-383-5280 or childbrain@umpc.edu if you have any questions or if you need to reschedule. We can't wait to see the picture of your brain!