

Study of Brain Development in School-Age Children

Frequently Asked Questions

What is Magnetic Resonance Imaging (MRI)?

MRI is a technique that is commonly used by doctors and scientists to take pictures of the brain using magnetic fields and radio waves. It is a safe and painless procedure that is routinely used with people of all ages.

An MRI scanner looks like a large machine that has a tunnel in the center. Participants lie comfortably on a table that slides into the tunnel.

During the MRI scan, the MRI machine measures magnetic properties of water molecules. Your body and brain are full of water, and the MRI machine can create detailed pictures using these measurements. MRI scans are often used to take detailed, safe pictures of all different parts of the body, including the brain.



The MRI scanner at Wesley Woods.

Is it safe?

MRI is a safe, noninvasive, and painless procedure that is approved by the US Food and Drug Administration (FDA) for use with people of all ages, including infants and children. MRI **does not** use radiation or x-rays. Instead, it uses a large magnet and radio waves to take pictures of the brain.

While there are no known short- or long-term health risks of MRI, it's important to be careful when near the strong magnetic fields used in the MRI machine.

The magnetic field of the MRI machine is very strong and can pull metal objects towards the scanner. This risk is easily and carefully minimized in all of our studies. First, no one



Michael, our MRI technician, uses a special wand to screen for metal.

can be scanned if they have metal inside their body, and no one is allowed to bring metal objects into the scanner room. Before each and every scan, technicians carefully review many detailed questions to make sure that you and your child do not have any metal in or on your body. All participants will be carefully screened for metal and everyone is required to remove all free metallic objects (jewelry, belt buckles, coins, etc.) before entering the

scanner room. Once we enter the room the door will be closed so that no one from outside accidentally goes near the magnet.

A second risk of MRI is the loud noise that the machine makes. Some portions of the MRI procedure can be quite loud, reaching up to 100 dB. This risk is carefully minimized by having participants wear headphones and/or earplugs so that they only hear about 70 dB of noise. 70 dB is a reasonable amount of sound, similar to what your child is exposed to on a daily basis. For instance, a conversation is 60-70 db, average street noise is 70 db, an alarm clock is 80 dB, and car horns reach up to 100 db.

Finally, some participants may feel, anxious or confined when the MRI table slides into the tunnel. To reduce this possibility, an experienced clinician or experimenter will guide your child through a training program in a 'mock scanner' before participating in the MRI procedure. The mock scanner provides a realistic approximation of the real MRI scanner and is designed to familiarize your child with the MRI procedure.



Practicing on the mock scanner.

Your child will have a chance to explore the mock scanner and practice lying in the mock scanner so that they are comfortable and know exactly what to expect during the real MRI.

Can I stay with my child during the scan?

You are welcome to stay in the MRI room with your child at all times, and we encourage it, provided that you have no metal in or on your body that would make it unsafe for you to enter the scanner room. We will ask you a series of questions to screen you for metal. If you are able to enter the scanner room, you are welcome to do so. A trained experimenter will also remain in the room to monitor your child and the scan closely at all times.

What will happen at the MRI scan?

Upon completing training in the mock scanner, your child will be invited to participate in a real MRI scan. An experienced clinician or experimenter will guide your child through



Watching movies in the scanner.

each step of the study and will stay with your child at all times. The experimenter will help your child lie on the scanner bed and give your child headphones and/or earplugs to reduce the noise that the scanner makes. Once your child is comfortably positioned, the table will be moved into the MRI scanner. During the scan, your child will watch a movie or rest. The experimenter will communicate

frequently with your child throughout the scan and your child will be able to communicate with the experimenter through a headset. The scan takes approximately 45 minutes to complete but can be stopped for breaks at any time.

What happens if you see something worrisome on my child's brain scan?

This MRI study is for research purposes only. It is not a clinical examination and the scans done for this study are not designed for clinical testing. As a result, they will not be made available for diagnostic purposes. Our experimenters are not qualified to interpret clinical scans and are not able to provide a diagnostic evaluation of the scans. That type of scan would be conducted only by a medically-licensed Radiologist and would be a clinical, rather than research, scan.

However, if the experimenter sees anything concerning on your child's scan, the experimenter will ask a licensed Radiologist to review the brain scan images. If the Radiologist is concerned or recommends another scan for more information, a clinician or coordinator from our study team will contact you. They will tell you about the finding and recommend that you seek medical advice as a precautionary measure. The decision for additional examination or treatment would lie solely with you and your child's physician.

How long will the study take?

A study visit may take 1 to 2 hours to complete. The scan takes approximately 45 minutes to complete but can be stopped for breaks at any time.