VANDERBILT UNIVERSITY

The Numerical Brain Lab
Gavin R. Price, PhD
Peabody College, Vanderbilt University
Nashville, TN 37207
615-241-0894

Frequently Asked Questions about MRI

Q: What does MRI stand for?
A: MRI stands for Magnetic Resonance Imaging. In short, we use magnets and radio waves to take pictures of the brain. No ionizing radiation is used for our MRI's.

Q: What is functional MR imaging (fMRI) of the brain?
A: MRI is a technique for viewing the brain's structure and functions. Two main forms exist: structural MRI's provide detailed pictures of the brain's shape and size. Functional MRI allows researchers to visualize and map activity in parts of the brain used while you do certain tasks we are interested in. Both structural and functional MRI are used for our studies. As you lie in its magnetic field, invisible radio waves are released around you. This will result in harmless radio waves bouncing off the different substances that make up your brain. These radio waves are then detected by a computer, which transforms the data into images of the brain's structure and activity.

Q: Is MRI safe?
A: MRI is a valuable tool used in research and clinical environments with infants, children, and adults. The static magnetic fields used in MRI have no known long-term adverse effects on human or animal tissue. Unlike X-rays or CT scans, MRI does not use ionizing radiation. The MR imaging we conduct for research purposes does not involve any injections. The major risk of the MR environment is the strong pull of the magnet on metal objects. We take every precaution to keep such objects out of the scanner room. All participants, and family members who accompany them, fill out a detailed screening form. Individuals who have metal in their bodies (pacemakers, for example) are ineligible for MRI studies. Jewelry, piercings, and other metal objects must be removed before entering the scanner room.

Q: Does having an MRI hurt?
A: No. You cannot feel the picture being taken. Some people find it uncomfortable to lie still for long periods of time (about 45 minutes in our studies), but we make every effort for you to be as comfortable as possible with a blanket and pillows to help you lie in a comfortable position. Also, the MRI scanner can be a bit loud, so we provide earplugs and ear covering so that your ears are well protected.

Q: What if my child does not like doing the MRI?
A: All of our studies are completely voluntary and we make sure that the child is OK with every step of the process. In the first visit to Vanderbilt, we will do a mock scan with a scanner that looks just like the real one but does not contain a magnet. This way, the child knows exactly what to expect before doing the real MRI. We clearly communicate that if at any point your child does not want to continue with the study, they can just tell one of us or their parent and they can stop participating and no one will be mad at them. They still get their gift card too!