

Magnetic Resonance Imaging (MRI)

This sheet is about exposure to magnetic resonance imaging (MRI) and the use of contrast media for MRI in pregnancy and breastfeeding. This information should not take the place of medical care and advice from your healthcare provider.

What is Magnetic Resonance Imaging (MRI)?

Magnetic resonance imaging, known as MRI, is a medical procedure used to create pictures of the inside of the body to diagnose some diseases or conditions. Pregnant people and developing babies have MRIs. An MRI can image the pregnancy and give healthcare providers a view of the placenta, baby's brain, airway, lungs, and abdomen (commonly called the belly).

MRI does NOT use ionizing radiation like an x-ray or computer-assisted tomography (CT) scan. Instead, MRI uses a magnetic field and radio waves. A typical MRI scan lasts from 20 to 90 minutes. MRIs are painless and is not expected to cause any tissue damage.

Can having an MRI make it harder for me to get pregnant?

It is not known if MRIs can make it harder to get pregnant.

I am pregnant. What if I need an MRI?

If you are pregnant or think that you could be pregnant, notify your healthcare provider and the radiologist or MRI technologist before having a MRI done. The American College of Obstetricians and Gynecologists (ACOG) and the American College of Radiology (ACR) have stated that pregnant people can have an MRI done, during any trimester.

Does having an MRI increase the chance for miscarriage?

Miscarriage can occur in any pregnancy. Studies have not been done to see if MRIs increase the chance for miscarriage.

Does having an MRI increase the chance of birth defects?

Every pregnancy starts out with a 3-5% chance of having a birth defect. This is called the background risk. One study that looked at more than 1,700 pregnancies exposed to MRI during the first trimester did not find an increased chance of birth defects.

Heat produced by the scanner may be able to reach the patient during an MRI (especially if it is a long procedure). However, heat is strongest when it first hits the skin and becomes weaker as it approaches the center of the body (where the baby is located).

The MRI machine makes loud sounds. There has been interest in knowing if the MRI could affect fetal hearing. Based on several small studies, hearing damage has not been reported with exposure to MRI during pregnancy.

There will be contrast used for my MRI. What is a contrast medium?

Some MRI procedures use contrast media. Contrast media is a substance injected into a vein to help get a clearer picture of an area in the body. Contrast media used with an MRI can contain gadolinium or superparamagnetic iron oxide.

There have been no studies of superparamagnetic iron oxide contrast during pregnancy, so it is not a preferred contrast agent during pregnancy. There is some information on gadolinium-based contrast agents. Usually, the body can quickly eliminate gadolinium-based contrast medium. If you need to have an MRI, talk to your healthcare provider about the use of contrast agents.

Does gadolinium contrast media increase the chance for birth defects?

Gadolinium media can cross the placenta and reach the baby. Two studies in over 400 people given gadolinium contrast during pregnancy did not find an increased chance for birth defects.

Does gadolinium contrast media increase the chance for other pregnancy problems?

One study of 24 people given gadolinium contrast media in the first trimester of pregnancy did not find a greater chance for pregnancy or newborn problems. One small study reported a small increased chance for stillbirth or death by one month of age, but no greater chance for other health concerns in the children (up to age four) of people who received an MRI with a gadolinium agent during pregnancy. This finding is based on just 7 cases so it is possible that the chance of stillbirth was more related to the pregnant person's underlying health condition (the reason for the MRI).

Does an MRI or contrast in pregnancy affect the future behavior or learning for the child?

Studies have not been done to see if an MRI or contrast can cause behavior or learning issues for the child.

Breastfeeding and MRIs:

Because the MRI only uses magnetic fields and radio waves to get images, there are no concerns about having this procedure done while breastfeeding. Breastfeeding can resume after the MRI.

Breastfeeding with gadolinium contrast or superparamagnetic oxide nanoparticles: Very little gadolinium gets into breast milk. One report found that less than a half percent (less than 0.5%) of an adult dose of a gadolinium contrast agent will be in the milk after 24 hours (1 day). Similar findings occurred in the milk of 17 additional nursing people. This very low amount is not expected to cause problems in a nursing infant. ACOG states breastfeeding can resume after an MRI with contrast.

There have been no studies on the use of superparamagnetic iron oxide contrast during breastfeeding. Superparamagnetic iron oxide is like other injectable iron products which do not cause risks to a breastfed child.

Be sure to talk to your healthcare provider about all of your breastfeeding questions.

If a male has an MRI, with or without contrast, could it affect fertility (ability to get partner pregnant) or increase the chance of birth defects?

Studies have not been done to see if an MRI (with or without contrast) could affect male fertility or increase the chance of birth defects. In general, exposures that fathers or sperm donors have are unlikely to increase risks to a pregnancy. For more information, please see the MotherToBaby fact sheet Paternal Exposures at <https://mothertobaby.org/fact-sheets/paternal-exposures-pregnancy/>.

Please click here for references

Questions? Call 866.626.6847 | Text 855.999.3525 | Email or Chat at [MotherToBaby.org](https://mothertobaby.org).

Disclaimer: MotherToBaby Fact Sheets are meant for general information purposes and should not replace the advice of your health care provider. MotherToBaby is a service of the non-profit Organization of Teratology Information Specialists (OTIS). *OTIS/MotherToBaby encourages inclusive and person-centered language. While our name still contains a reference to mothers, we are updating our resources with more inclusive terms. Use of the term mother or maternal refers to a person who is pregnant. Use of the term father or paternal refers to a person who contributes sperm.* Copyright by OTIS, April 1, 2022.