National Imaging Associates, Inc.	
Clinical guidelines **FETAL MRI**	**Original Date: January 2016**
CPT Codes: 74712, +74713	**Last Revised Date: March 2023~~April 2022~~**
Guideline Number: NIA_CG_110	**Implementation Date: January 2024~~23~~**

GENERAL INFORMATION

- *It is an expectation that all patients receive care/services from a licensed clinician. All appropriate supporting documentation, including recent pertinent office visit notes, laboratory data, and results of any special testing must be provided. If applicable: All prior relevant imaging results and the reason that alternative imaging cannot be performed must be included in the documentation submitted.*
- *Where a specific clinical indication is not directly addressed in this guideline, medical necessity determination will be made based on widely accepted standard of care criteria. These criteria are supported by evidence-based or peer-reviewed sources such as medical literature, societal guidelines and state/national recommendations.*

(For evaluating the placenta or imaging the maternal pelvis without need for fetal assessment, use the Pelvic MRI guideline NIA_CG_037)

INDICATIONS

- To better define or confirm a known or suspected abnormality of the fetus after ultrasound has been performed [1] or when fetal surgery is planned, and/or to make a decision about therapy, delivery or to advise the family about prognosis[2,3]

Safety guidelines and possible contraindications

There are no documented fetal indications for the use of MRI contrast, but there may be rare instances where contrast is considered potentially helpful in assessing the pregnant patient's anatomy or pathology. However, its use is controversial with uncertainty surrounding the risk of possible fetal effects because gadolinium is water-soluble and can cross the placenta.

The decision to administer contrast must be made on a case-by-case basis by the ~~covering level 2 MR personnel designated~~ attending radiologist who will discuss with the patient and ~~will~~

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assess the risk-benefit ratio for that ~~particular patient~~patient. The decision to administer a gadolinium-based MR contrast agent to pregnant patients should be accompanied by a well-documented and thoughtful risk-benefit analysis.[4]

BACKGROUND

MRI not only contributes to diagnosis, but also serves as an important guide to treatment, delivery planning, and counseling. However, sonography is the screening modality of choice in the fetus. The advantage of MRI over ultrasound is its ability to image deep soft tissue structures without relying on the skill of the operator or limitations of patient body habitus.

Fetal MRI should be performed only for a valid medical reason and only after careful consideration of sonographic findings or family history of an abnormality for which screening with MRI might be beneficial. Before 18 weeks gestational age, a fetal MRI may not provide additional diagnostic information due to the small size of the fetus and fetal movement when compared with sonography. The need for early diagnosis should be balanced against the advantages of improved resolution later in pregnancy, with the choice dependent on the anomalies to be assessed.

According to the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice, the preponderance of animal studies demonstrates no risk of teratogenesis to the fetus, and tissue heating from MRI scanners is negligible near the uterus. Furthermore, in human studies of patients undergoing MRI, there ~~has~~have been no acoustic injuries to the fetus during prenatal MRI. ~~At this time~~Currently there is no documentation of deleterious effects of MRI at 1.5T and 3T on the developing fetus.[2]

~~POLICY HISTORY~~

~~Date~~	~~Summary~~
	~~Modfied background~~ ~~Updated references~~
~~April 2022~~	~~Updated background section~~
~~June 2021~~	~~Updated reference~~ ~~Added background information regarding 1.5T and 3T~~
~~May 2020~~	~~No substantive changes~~
~~June 2019~~	~~For known or suspected abnormality of the fetus after ultrasound, added time restriction 'during the second trimester' and included 'to make a decision about therapy, delivery, or to advise the family about prognosis'~~ ~~Updated background information and references~~

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REFERENCES

1. Prayer D, Malinger G, Brugger PC, et al. ISUOG Practice Guidelines: performance of fetal magnetic resonance imaging. *Ultrasound Obstet Gynecol*. May 2017;49(5):671-680. doi:10.1002/uog.17412
2. ACR-SPR Practice Parameter for the Safe and Optimal Performance of Fetal Magnetic Resonance Imaging (MRI). American College of Radiology (ACR), Society for Pediatric Radiology (SPR). Updated 2020. Accessed November 13, 2022. https://www.acr.org/-/media/ACR/Files/Practice-Parameters/MR-Fetal.pdf
3. Stout JN, Bedoya MA, Grant PE, Estroff JA. Fetal Neuroimaging Updates. *Magn Reson Imaging Clin N Am*. Nov 2021;29(4):557-581. doi:10.1016/j.mric.2021.06.007
4. Committee Opinion Number 723: Guidelines for diagnostic imaging during pregnancy and lactation. American College of Obstetricians and Gynecologists (ACOG). Updated October 2017. Accessed November 13, 2022. https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Guidelines-for-Diagnostic-Imaging-During-Pregnancy-and-Lactation

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~~ADDITIONAL RESOURCES~~

~~1. Perrone A, Savelli S, Maggi C, et al. Magnetic resonance imaging versus ultrasonography in fetal pathology. *Radiol Med*. Mar 2008;113(2):225-41. doi:10.1007/s11547-008-0242-0~~

~~2. Saleem SN. Fetal MRI: An approach to practice: A review. *J Adv Res*. Sep 2014;5(5):507-23. doi:10.1016/j.jare.2013.06.001~~

~~3. Tocchio S, Kline-Fath B, Kanal E, Schmithorst VJ, Panigrahy A. MRI evaluation and safety in the developing brain. *Semin Perinatol*. Mar 2015;39(2):73-104. doi:10.1053/j.semperi.2015.01.002~~

POLICY HISTORY

Date	Summary
March 2023	• Modified background • General Information moved to beginning of guideline with added statement on clinical indications not addressed in this guideline • Updated references • Removed Additional Resources
April 2022	Updated background section
~~June 2021~~	~~Updated reference~~ ~~Added background information regarding 1.5T and 3T~~
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~~Reviewed / Approved by NIA Clinical Guideline Committee~~

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