National Imaging Associates, Inc.*	
Clinical guidelines **FETAL MRI**	**Original Date: January 2016**
CPT Codes: 74712, +74713	**Last Revised Date: June 2021**
Guideline Number: NIA_CG_110	**Implementation Date: January 2022**

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

INDICATIONS

- To better define or confirm a known or suspected abnormality of the fetus after ultrasound has been performed during the second trimester (Prayer, 2017) or when fetal surgery is planned, and/or to make a decision about therapy, delivery or to advise the family about prognosis (ACR-SPR, 20**20**~~15~~; SPR, 20**2**~~1~~1)~~.~~

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, it~~'~~s 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 assess the risk-benefit ratio for that particular 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 (ACOG, 2017).

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

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with MRI might be beneficial. According to the American College of Obstetricians and Gynecologists' Committee on Obstetric Practice, the preponderance of animal studies ~~demonstrate~~**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 been no acoustic injuries to the fetus during prenatal MRI (ACOG, 2017~~).~~) **At this time there is no documentation of deleterious effects of MRI at 1.5T and 3T on the developing fetus (ACR-SPR, 2020).**

POLICY HISTORY

Date	Summary
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**

~~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~~

~~May 2020~~

- ~~No substantive changes~~

~~June 2021~~

- ~~Updated reference~~
- ~~Added background information regarding 1.5T and 3T~~

REFERENCES

American College of Obstetricians and Gynecologists (ACOG). Guidelines for Diagnostic Imaging During Pregnancy and Lactation. ACOG Committee Opinion. 2017 Oct; 723. https://www.acog.org/Clinical-Guidance-and-Publications/Committee-Opinions/Committee-on-Obstetric-Practice/Guidelines-for-Diagnostic-Imaging-During-Pregnancy-and-Lactation.

American College of Radiology (ACR) and Society for Pediatric Radiology (SPR). ACR-SPR Practice Parameter for the Safe and Optimal Performance of Fetal Magnetic Resonance Imaging (MRI). **https://www.acr.org/-/media/ACR/Files/Practice-Parameters/MR-Fetal.pdf. Revised 2020.** ~~Retrieved February 7, 2018~~**Accessed August 19, 2021.**

Perrone A, Savelli S, Maggi C, et al. Magnetic resonance imaging versus ultrasonography in fetal pathology. *Radiol Med.* 2008; 113:225-41. http://www.ncbi.nlm.nih.gov/pubmed/18386124.

Prayer D, Malinger G, Brugger PC, et al. ISUOG Practice guidelines: Performance of fetal magnetic resonance imaging. *Ultrasound Obstet Gynecol*. 2017 May; 49(5):671-80.

Saleem SN. Fetal MRI: An approach to practice: A review. *J Adv Res*. 2014; 5:507-523. http://www.ncbi.nlm.nih.gov/pubmed/25685519.

Society for Pediatric Radiology (SPR). Fetal MRI – General Information. **Revised** 20**21**~~19~~. **Accessed August 19, 2021**. http://www.pedrad.org/Specialties/Fetal-Imaging/Fetal-MRI-General-Information.

Tocchio S, Kline-Fath B, Kanal E, et al. MRI evaluation and safety in the developing brain. *Semin Perinatol*. 2015; 39:73-104. http://www.seminperinat.com/article/S0146-0005(15)00003-8/fulltext?mobileUi=0.

Reviewed / Approved by NIA Clinical Guideline Committee

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.