

ACR Appropriateness Criteria[®] Procedure Contrast Information

Contrast agents are widely referred to in the ACR Appropriateness Criteria[®]. References to them follow sound general principles. Currently, all MRI and MRA exams that refer to contrast specifically mean gadolinium-based compounds. Oral or rectal contrast is a barium preparation unless otherwise specified. Intravenous contrast for all imaging examinations involving ionizing radiation is iodine-based. There are many different specific iodine–and gadolinium–based agents that are currently available, but at this time, there are no situations in which studies are sufficiently definitive to mandate the use of one specific agent as compared to others.

There are four basic terms used throughout the Appropriateness Criteria describing the use of *intravenous contrast* for a specific examination in a given clinical scenario:

1. “without contrast” (A contrast agent is not recommended.)
2. “with contrast” (A contrast agent is recommended.)
3. “without and with contrast” (It is recommended that the exam first be performed without a contrast agent followed by an exam with a contrast agent.)
4. “with or without contrast” (Available studies suggest that the exam is equally useful with or without the use of a contrast agent.)

The issue of nephrogenic systemic fibrosis (NSF) in relation to gadolinium-based contrast agents is addressed in the Appropriateness Criteria topic in which it is relevant. Other issues concerning contrast agents, such as acute reactions, prophylaxis to prevent reactions, and contrast-induced nephropathy (CIN) are addressed in detail in the [ACR Manual on Contrast Media](#).