# Using Technology for Distraction During Imaging in a Pediatric Population

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Magnetic resonance imaging (MRI) simulation and audiovisual (AV) devices are technological tools that can improve the patient experience during imaging procedures and lead to overall healthcare benefits for patients, healthcare providers, and institutions. AV devices, such as MRI-compatible goggles and headphones, offer the potential to improve the patient experience. These options can be offered to patients who describe negative feelings, including anxiety, prior to imaging. Nurses can advocate for these resources for an improved patient experience.

**At a Glance**

- Nurses should offer new tools, including simulation and audiovisual devices, to patients prior to and during magnetic resonance imaging.
- These technologies help predict if a patient will have a successful imaging procedure and may improve the patient experience during imaging.
- Patients and institutions stand to benefit from less medical interventions, such as anesthesia, and reduced long-term costs.

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Oncology nurses advocate for their patients. They make this evident every day as they help patients navigate through therapy in infusion centers, ambulatory clinics, inpatient clinics, or visiting nurse services. Nurses must be informed about available options that may help make a patient's journey through treatment more comfortable and minimize anxiety and stress. This article will focus on available technology that may help reduce patient anxiety during imaging procedures and will discuss the benefits and potential cost savings of available technologies.

## Magnetic Resonance Imaging Simulation

Adequate preparation and distraction are among the best ways to alleviate stress and anxiety. Patients and their families routinely ask their healthcare providers to describe an experience they are about to undergo, such as imaging, to develop expectations. An option to help quell concerns is to offer magnetic resonance imaging (MRI) simulation whenever available. An imaging machine without the magnetic component may be used as a simulation scanner (Carter, Greer, Gray, & Ware, 2010). Certain institutions offer this option for patients. The result of a simulation experience is that a patient can understand the imaging procedure beforehand and, therefore, experience less anxiety. It may also help predict whether a patient is able to tolerate imaging or if additional interventions will be necessary to ensure successful imaging.

MRIs can last from 30–60 minutes and require patients to remain very still (Törnqvist, Mansson, & Hallstrom, 2014). When motion artifacts are present, the value of the image may be decreased (Munn & Jordan, 2011). When imaging is not accurate because of movement artifact, the subsequent effect is the need for repeat imaging, potentially with anesthesia (Munn & Jordan, 2011, 2013). If the family needs to return for the repeat scan, then transportation costs may be incurred by the family in addition to the cost of repeating the scan. If the scan performed was computed tomography (CT), there would also be additional exposure to ionizing radiation (Munn & Jordan, 2013).

In a study by Carter et al. (2010), "mock MRI" simulation and the need for anesthesia was evaluated, and the authors found significant benefit in using simulation prior to imaging. The results were observed in children aged 3–8 years. The children who had a simulation prior to an actual MRI had a 16% reduced use of general anesthesia as compared to the control group of children who had simulation after their MRI. Simulation MRI can be an intervention used to prepare children for imaging and may decrease sedation needs for successful imaging.