1. Can the risk from nuclear medicine studies be lowered while still obtaining diagnostic quality scans?

Certainly; use of the North American consensus guidelines for pediatric nuclear medicine and optimized pediatric protocols can assure administered dose is reasonable. Additionally use of newer imaging equipment and/or image processing techniques may make it feasible to perform high-quality nuclear medicine studies with even lower administered dose.

2. How can I determine if my imaging providers are using appropriate nuclear medicine protocols and radiopharmaceutical dosages?

To know, you need to ask. Some imaging facilities may not have the right equipment suitable for children or experienced personnel who frequently perform pediatric procedures and may not adhere to the guidelines for pediatric radiopharmaceutical administered doses.

Ask:
- How often the facility performs the requested nuclear medicine study in children
- If the equipment is optimized for pediatric patients
- If the facility is accredited by the ACR or some other accrediting body
- If the technologists are credentialed
- If a board certified nuclear medicine physician or experienced pediatric nuclear medicine physician will be interpreting the study

To locate an ACR-accredited provider: To locate a medical imaging or radiation oncology provider in your community, you can search the ACR-accredited facilities (http://www.acr.org/quality-safety/accreditation/accredited-facility-search) database.

3. Should I not request nuclear medicine scans in my pediatric patients

Nuclear medicine studies are often very useful and can provide valuable and sometimes even lifesaving medical information. There should however be clear reasons to order the study. The American College of Radiology (ACR) publishes appropriateness criteria for pediatric conditions that discuss the utility of various imaging modalities including nuclear medicine scans. In addition, the Society of Nuclear Medicine and Molecular Imaging (SNMMI) publishes practice standards for different nuclear medicine procedures. In some situations, ultrasound or
occasionally magnetic resonance imaging could provide similar information without exposing a child to radiation. Discussing the clinical situation with the nuclear medicine physicians can help decide if an alternative test might be better. If a nuclear medicine study is indicated, ensure that your imaging facility uses appropriate equipment, dosages and techniques for children, and that those performing and interpreting these pediatric studies are qualified and experienced.

4. **Should I talk to the parents about the risks involved in getting a nuclear medicine procedure?**

   ✓ The diagnostic benefit that an appropriate nuclear medicine study can provide in the short-term generally outweighs the long-term risks associated with radiation. While it seems that informing parents might dissuade them from accepting potentially important studies, recent research has revealed otherwise. It has been shown that parents can be provided with dosimetric and risk information, including a discussion of possible increased cancer risk with radiation exposure, and that such information typically does not negatively affect their willingness to have their child undergo an indicated medical imaging test.

5. **What are the resources I can use to understand the risks involved with radiation?**

   ✓ You can visit both the nuclear medicine physician and referring provider subsections of the Image Gently website to learn more about the recommended dosages of radiopharmaceuticals and the radiation risks involved.