MRAD 302 Specialized Imaging 2 Reflection #4 – forms part of quiz #4 (5%)

Reflection: Nuclear Medicine

Reflections are designed to encourage you to think critically about your experiences, apply theoretical knowledge to practical situations, and develop your professional identity as a medical imaging technologist.

Topic: Nuclear Medicine

1. Why is Technetium 99m the most commonly used radioactive material in nuclear medicine procedures?

2. What is the approximate half-life of Technetium 99m? Why is the knowledge of the half-life important for imaging procedures?

   Technetium-99m is the most commonly used radioactive material in nuclear medicine because it has several good characteristics that make it well suited for diagnostic imaging. It emits gamma radiation that can be detected by cameras to produce images of different organs and tissues. It can also be combined with different pharmaceuticals, allowing it to be used for many types of exams, like bone, cardiac, renal, and hepatobiliary imaging. It also keeps the patient's radiation exposure low while providing useful diagnostic information. Technetium-99m has a physical half-life of approximately 6 hours; this means every six hours, the amount of radioactive tc-99m remaining in the patient decreases to approximately half of its previous amount. Understanding half-life is important because there needs to be enough radioactivity present during the examination to produce diagnostic-quality images. At the same time, the short life span means the radioactivity decreases quickly after the procedure, helping to limit the patient's overall radiation exposure.

Word count: 200-250 words

Reflective Writing Rubric

Criteria	1 Point	2 Points	3 Points
Critical Reflection	Basic understanding of topic	Some reflection, with basic analysis	Deep reflection with thoughtful analysis
Application to Practice	Limited connection to medical imaging practice	Clear connections to medical imaging practice	Insightful application to medical imaging practice

Writing Quality	Basic writing with some clarity issues	Clear writing with minor errors	Well-written, clear, and concise