

Nuclear Medicine Emission Tomography

1. What type of imaging is used to observe biological processes?
 - a. Chemical
 - b. Structural
 - c. Functional
 - d. Nuclear
2. In nuclear medicine, functional imaging relies on _____ that are tagged to tracers that congregate in different regions of diagnostic interest in the body.
 - a. Radioisotopes
 - b. Cells
 - c. Molecules
 - d. Particles
3. Functional imaging methods in the field of nuclear medicine is also known as _____.
 - a. Cellular imaging
 - b. Molecular imaging
 - c. Structural imaging
 - d. Transmission imaging
4. 3-D images can be reconstructed from 2-D projections is a process called _____.
 - a. Reformatting
 - b. Image shifting
 - c. SPECT
 - d. Image transmission
5. The use of naturally decaying radioisotopes for medical imaging did not occur until _____.
 - a. 1925
 - b. 1927
 - c. 1930
 - d. 1935
6. Who was the first to use radioisotopes and imaging equipment to investigate the body's biochemistry?
 - a. Dmitri Mendeleev
 - b. Marie Curie
 - c. George de Hevesy
 - d. Albert Einstein
7. What year did George de Hevesy win the Nobel Prize for Chemistry?
 - a. 1943
 - b. 1945
 - c. 1947
 - d. 1947
8. To limit patient dose, relatively small amounts of activity are usually injected, typically ranging from _____ to 1,000 MBq.
 - a. 10
 - b. 50
 - c. 75
 - d. 100

9. What is the second most important physical factor affecting emission tomography?
 - a. Photon attenuation
 - b. Noisy data
 - c. Blurry data
 - d. Long exposure time
10. True or false. Compton scatter **is not** very important for emission tomography.
 - a. True
 - b. False
11. What year was the gamma camera invented?
 - a. 1955
 - b. 1956
 - c. 1957
 - d. 1958
12. Which of the following is not a component of a gamma camera?
 - a. Anode
 - b. Collimator
 - c. Scintillator
 - d. Photomultiplier tubes
13. What is the most commonly used collimator for SPECT imaging?
 - a. Geometric bores
 - b. Linear bores
 - c. Special bores
 - d. Parallel bores
14. The decay process that forms the basis of PET produces _____ photons that travel in opposing directions away from each other.
 - a. Two
 - b. Four
 - c. Six
 - d. Eight