

Bioimaging exam questions WS 18/19

1. Which unit represents the energy of radioactive particles in radiation safety? --> eV
2. What is the definition of radioactivity?
11. How specific activity is defined
12. You run measurement with new Neuro-Pet tracer. Nothing is known about tracer. How you choose framing and duration of your PET acquisition
- 13 hemodynamic response / BOLD effect
- 14 why do you need fbp
15. What does attenuation cause in nuclear medicine?
16. What is true? (2)
 - 1) with high pass filter we get a smooth image
 - 2) we can only apply low pass filter in spatial domain
 - 3) big convolution kernel needs longer time
 - 4) do we get smoothing of image with following application:

1	1	1
1	1	1
1	1	1

Notes:

- Hyperpolarization:
 - o How is the Hyperpolarization lost (?)
 - o What is the TNM system? --> staging of malignant tumors
- Explain tracer principle
- Name and explain the components of a PET detector
- What is back projection filtering (FBP)
- Challenges when going from animal to human in translational research
- Four methods to reduce external radiation exposure
- Temperature of ablation