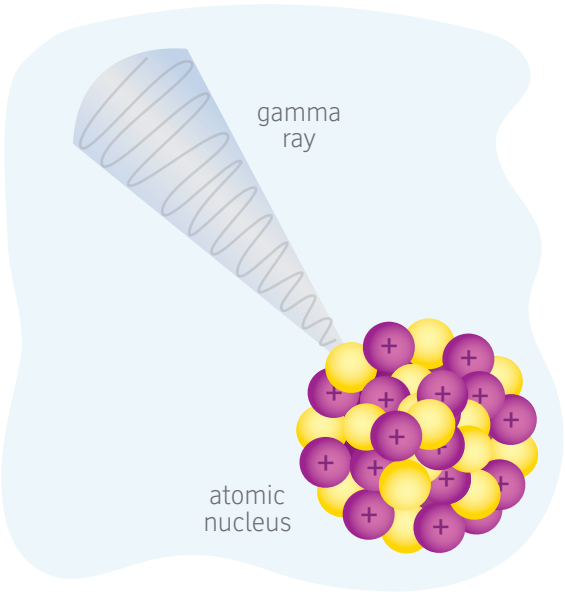
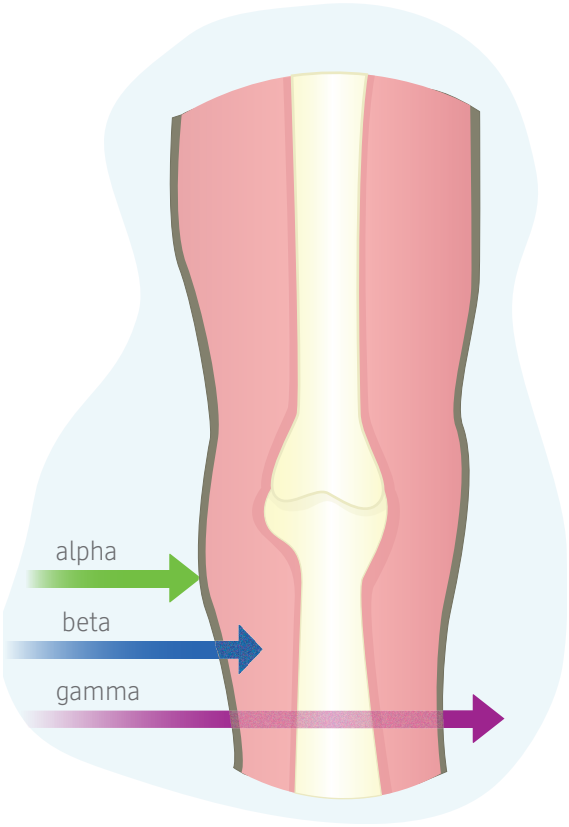
WHAT IS GAMMA (γ) RADIATION?

Gamma (γ) radiation is emitted from radioactive atomic nuclei after they have undergone alpha (α) or beta (β) decay.



Some properties of gamma rays include:

- Gamma (γ) radiation is a burst of energy in the form of **electromagnetic radiation** – similar to light rays but with much higher energy.
- The 'particles' of γ radiation are called photons, however γ photons **lack mass and are uncharged**.



Cross section of a human leg, demonstrating the penetration depth of radiation types: alpha radiation is stopped by human skin, beta radiation penetrates into the skin and gamma radiation penetrates the body entirely.

- Because γ radiation is not charged and does not have mass, it interacts less strongly with matter than α or β particles. It is therefore **very penetrating**.
- Because γ photons do not interact with matter as strongly as α or β particles, they are also less ionising than α or β particles.
- γ radiation can travel very far in air and penetrate deeply into most substances, including human tissue.
- γ radiation can be attenuated by thick slabs of concrete or lead.
- γ radiation travels at the speed of light, about 1 billion km per hour.
- γ radiation cannot make a target radioactive.
- Both heavy and light nuclei can emit γ radiation.