osteoporosis	a bone disease characterised by decreased bone mass (bone density), which leads to decreased bone strength and an increased chance of bone fractures
pair annihilation	occurs when a positron interacts with an electron producing two gamma rays; these gamma rays have the same energy but travel in opposite directions
Piezoelectric effect	a phenomenon where an oscillating potential difference applied to a crystal is converted into a mechanical vibration (and a mechanical vibration into an oscillating potential difference
positron	a positive electron; an antiparticle
positron emission tomography (PET)	a non-invasive technique used to produce images of internally active parts of the human body by the use of short-lived radioisotopes produced in accelerators

precession	the rotation of the axis of spin of a spinning object due to the application of a torque
radioactivity	the spontaneous breakdown of an atom by the emission of alpha and/or beta and/or gamma rays
radio frequency	radio frequencies occur in a range of = 3 kHz to = 300 GHz
radiographs	the negative images formed when x-rays expose a photographic plate
radioisotopes	the radioactive isotopes of an element; they can be used for body scanning

radiopharmaceutical	a chemical used by the body that has a radioisotope attached to it; used in nuclear imaging and PET scans
radiotherapy	the use of radioisotopes to treat diseases such as cancer
resonance	sympathetic vibration; when a frequency equal to that of the natural frequency of a system fall on it, the system absorbs the energy
scanning	the process of making an image of the interior of the body
sector scans	the typical 'fan shaped' ultrasound images

spin	a measure of intrinsic angular momentum of an elementary particle; spin is a fundamental property of all elementary particles; it comes in multiples of 1/2 and can be + or -
technetium	the most commonly used radioisotope in medical diagnosis; it has a half-life of six hours and is a pure gamma emitter
total internal reflection	the reflection of all the light falling on a boundary when the angle of incidence exceeds the critical angle
transducers	devices for transforming one type of energy into another; a piezoelectric crystal for instance, changes varying potential differences into vibrations
ultrasonography	a non-invasive method that uses ultrasound to 'see inside' the human body; imaging modes include A-, B-, sector and phase scans

ultrasound	sound with frequencies greater than 20 000 Hz; can be used to make images of internal organs and tissues
x-ray machines	consist of a filament to produce a beam of electrons, a high temperature resistant target and a cathode and anode to accelerate the electrons; when the electrons collide with a target, they produce heat and x-rays
x-rays	high frequency electromagnetic waves of high penetration produced by bombarding a tungsten target with electrons in an evacuated chamber; hard x-rays have short wavelengths (= 0.01 nm); soft x-rays have longer wavelengths (= 1 nm); x-rays can be used to 'see inside' the human body