The Science & The Scientists

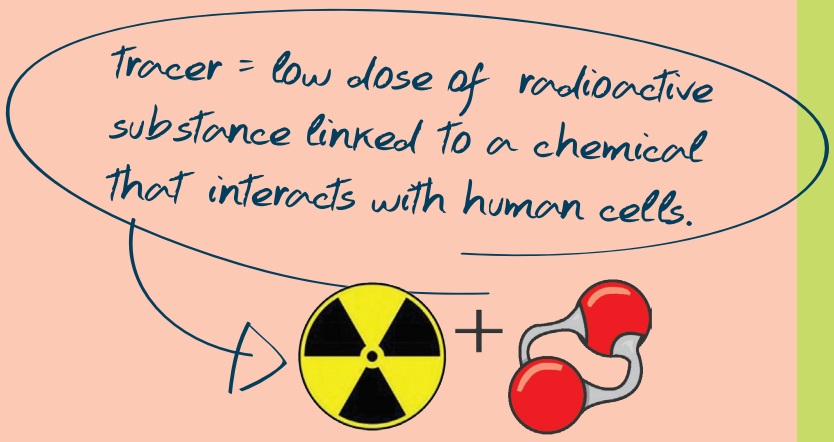
Diagnosing disease with radioactivity

Nuclear medicine imaging uses radioactive materials to produce unique pictures of the body's inner workings. These images can be vital for a wide range of medical investigations, including tests for cancer, kidney disease and Alzheimer's.

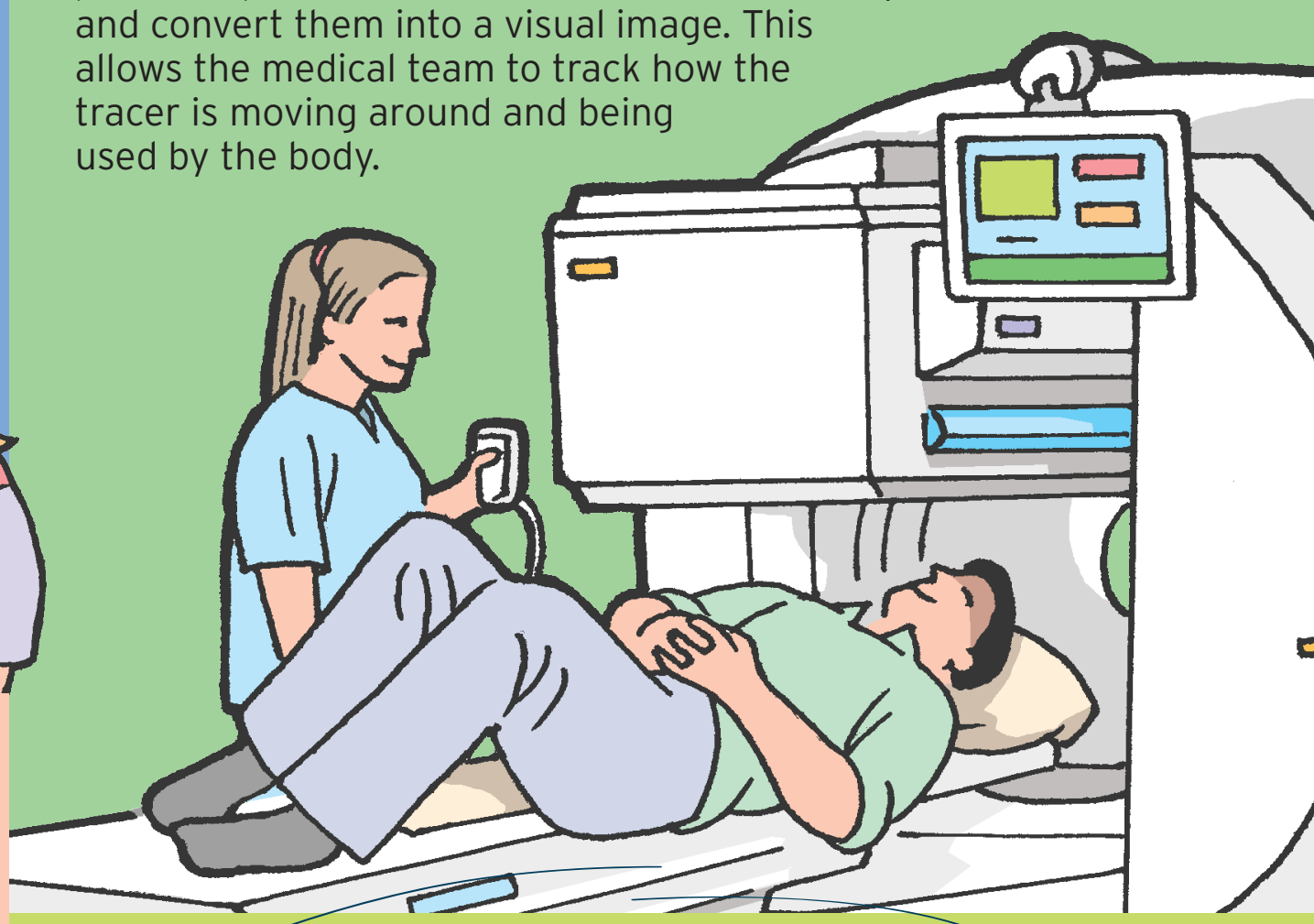
Physicists, doctors, radiographers and technologists work together in the nuclear medicine team. They give the patient a short-lived radioactive tracer, usually by injection.



The team carefully choose a tracer to minimise the patient's exposure to radioactivity and to target the body part under investigation. For example, to check brain function, they would choose a tracer containing a chemical used by the brain, such as oxygen or glucose.



Rays from the radioactive tracer pass out of the patient. Specialised cameras can detect the rays, and convert them into a visual image. This allows the medical team to track how the tracer is moving around and being used by the body.



Nuclear medicine images are different from other medical scans, such as X-rays or MRI: they reveal how well the body is working, rather than just showing its structure. This gamma camera image reveals a kidney problem. Nuclear medicine scans can be combined with other scan types that show structural detail to produce images that are even more useful.

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The techniques described in this leaflet are only suitable in certain cases and some are not yet widely available. If you need nuclear medicine, your doctor will advise on the best treatment for you.