



Seeing through you: X-rays and scans

Welcome to PhysioBiz, with healthcare advice and information you can trust and rely on, brought to you by the South African Physiotherapy Society!

With X-rays, CAT and MRI scans, our ability to visualise what's inside and what's causing the trouble is very sophisticated, and it's tempting to use these tools – but is it helpful? When is it the right thing to do?

Understanding X-rays and scans (radiological imaging)

X-rays

In X-ray technology, a small amount of electromagnetic radiation is passed through the body. Different tissues absorb the energy at different rates, making X-rays a useful way of checking bones for fractures, looking at joints and seeing some tumours, as well as picking up on issues like fluid in the lungs.

X-rays aren't good at picking up soft tissue injuries, inflammation or injuries like bone bruising.

While the radiation is very low dose and extremely low risk, it's best to avoid unnecessary X-rays as much as possible, as high doses can have side-effects.

Computed tomography (CT or CAT) scans

CAT scans use multiple X-ray images taken from different angles while you are inside a 'tunnel', to build up a 3-D image of the inside of your body. It gives much more detail and more sophisticated images make it useful for a wide range of investigations, from head to toe.

Because CAT scans use many X-rays, the dose of radiation is greater, so it's best to use it as little as possible.

Magnetic resonance imaging (MRI)

The MRI uses strong magnetic fields and radio waves to create very detailed and subtle images of the body. The patient lies inside a large tube that contains powerful magnets – do tell the therapist or doctor if you have any metal inside your body, as obviously the magnets could have an impact! And tell them if you're pregnant, as we're not sure what the impact on a foetus is. It's a noisy procedure; you may be given ear protection.

Because the imaging is so good, this is a great way to 'see' soft tissue – tumours, aneurysms, spinal cord and disk problems, the heart and surrounding vessels, as well as things like torn cartilages and ligaments.

But do you really need these X-rays or scans?

They can tell the medics a lot – especially after an injury incident. But they can also be deceiving, especially for people with chronic pain. Far too often what they reveal is not an accurate representation of the clinical reality.

Here what you need to know:

You should never rely on radiological imaging alone for a diagnosis

The reason? Radiological imaging results do not strongly correlate with the reason for having pain. Studies have shown that X-rays in many people, who have pain indicative of osteoarthritis in the knee, don't yield visible evidence of the problem.

Imaging shows the same degeneration in many people who DON'T have symptoms

The opposite is also true; when researchers do MRIs on knees or lower backs in people who have no symptoms and feel no pain, they surprisingly often show images which, read by themselves, would seem to indicate the patient was badly affected and should be in pain.

Determining the cause of pain should always start with the clinical picture: how you feel, what symptoms you present with and how they affect you. "While radiological imaging is a wonderful tool, it should not be relied on or used in isolation for diagnosis in chronic pain," says Dr Ina Diener, previous President of the South African Society of Physiotherapy. "Scans and X-rays should not be the first port of call in seeking a diagnosis for chronic pain. A physiotherapist uses clinical reasoning – weighing up all the evidence available, including the patient's pain experience and functionality – and makes decisions based on what's best for the patient."

To find a physiotherapist, go to www.saphysio.co.za.

References available on request