

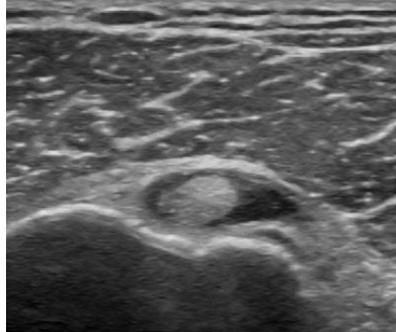
The Shoulder and Medical Imaging

What you need to know

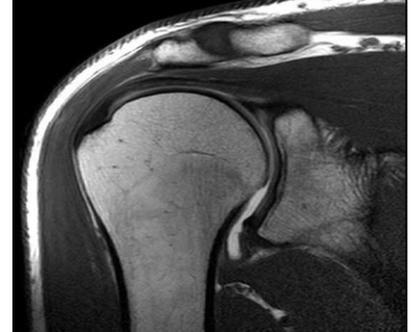
Medical imaging is used in healthcare to see the structures inside the body to help clinicians understand the cause of a problem and establish a diagnosis. There are many different types of imaging and each type is used for a specific purpose. For problems involving the shoulder the main forms of imaging are; x-rays, ultrasound, CT and MRI scans.



Shoulder X-Ray



Shoulder Ultrasound



Shoulder MRI

History

Medical imaging started soon after x-rays were discovered in 1895. **X-rays** (or radiographs) are mainly used to produce images of bones (and sometimes foreign objects). **Ultrasound** uses high frequency sound waves to image; muscles, ligaments, organs, blood vessels and the surfaces of bone. **CT Scans** (also known as **CAT** or **Computed Axial Tomography Scans**) were introduced in the 1970's and use x-rays taking from many different angles and computers to produce detailed image 'slices' through the body. **MRI (or Magnetic Resonance Imaging) Scans** were also introduced in the 1970's and like CT scans produce detailed image 'slices' of the part of the body being scanned, but instead of using x-rays, MRI's use strong magnetic fields.

WHAT YOU NEED TO KNOW?



We are very fortunate to live in a time where imaging is available and imaging is important to assist in the diagnosis of problems such as; fractures, cancer and in the case of the shoulder; problems involved with trauma, such as dislocations and some tendon tears.

However, there are some **really big problems** when imaging is used to diagnose where the symptoms are coming from. Just a few of these are:

- ◆ **Imaging findings such as; tendon tears and bursal thickening** (sometimes diagnosed as bursitis) are **just as common** in people with **no shoulder pain**, as they are in people with **shoulder pain**. In fact, in one study **96% of people without any shoulder pain** or loss of function, were found to have imaging changes, such as tears, bursal thickening, and many other problems.
- ◆ **This can also be the case even in elite international level athletes, and tennis players, and baseball pitchers. The tears don't stop these athletes functioning at an incredibly high level.** Even when followed up after 5 years, the tears were still not causing problems.
- ❖ This means **what is seen in imaging is usually not the cause of the problem**, and **in most cases the findings of imaging investigations cannot tell you where your pain is coming from.**
- ❖ In some studies, **even really large tendon tears** were found **not to cause any pain** or have a negative effect on movement.
- ❖ In fact, tendon tears in your shoulder, relate more to your age, than whether you have pain or not.

Getting better usually has got nothing to do with 'fixing' what was found on imaging, and in most situations, you should not worry about what the imaging has found.

You can discuss this further with your clinician.

References:

- Lewis J (2009) Rotator cuff tendinopathy/ subacromial impingement syndrome: is it time for a new method of assessment? *BJSM*.
Lewis J (2011) Subacromial impingement syndrome: A musculoskeletal condition or a clinical illusion? *Physical Therapy Reviews*.
Lewis J (2015) Bloodletting for pneumonia, prolonged bed rest for low back pain, is subacromial decompression another clinical illusion? *BJSM*.
Lewis J, McCreesh K, Roy JS, Ginn K (2015) Rotator Cuff Tendinopathy: Navigating the Diagnosis-Management Conundrum. *JOSPT*.