

## Musculoskeletal imaging

# DETECTING JOINT EFFUSIONS

### *Why use ultrasound?*

All joints contain synovial fluid; it can be challenging to determine if an effusion is present using physical exam alone, particularly if the patient is obese or has poor landmarks.

Ultrasound allows direct visualization of intra-articular fluid that has swollen beyond the boundary of the joint capsule.



Normal



Effusion

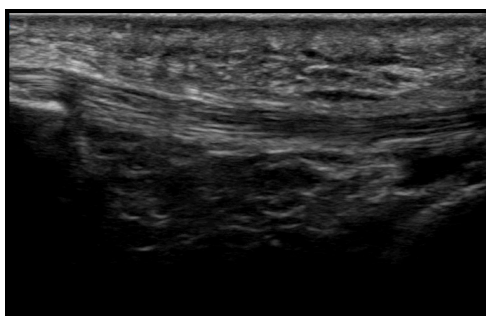
### *Transducer selection*

For superficial joints, such as the digits, or in smaller patients, a high frequency transducer will be sufficient. Larger patients or deeper joints will often require a low frequency transducer.

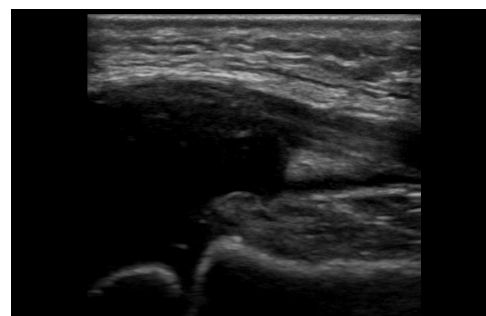
If uncertain whether an effusion is present, compare to an unaffected joint.

### *Joint effusions*

Effusions distend the boundaries of a joint capsule, and typically the joint contents rise above the bony landmarks defining the joint space.

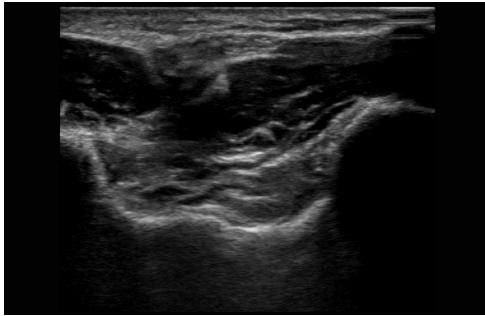


No effusion

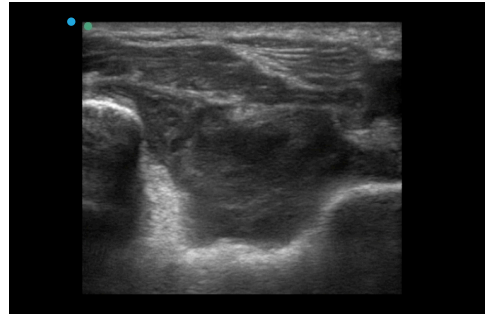


Knee effusion

Familiarity with the underlying joint anatomy is helpful, as pattern recognition helps a user recognize abnormalities. Here is an example of an elbow effusion.

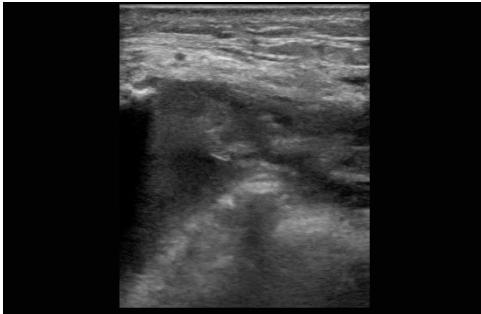


No effusion



Elbow effusion

Complex effusions may contain hyperechoic material.



Hemorrhagic knee effusion