

### Radiological Terminology

<b>Lytic</b>	Bone loss/destruction (blackier)
<b>Blastic/Sclerotic</b>	Bone production (whiter) - blotches
<b>Artefact</b>	Anything that obscures/distorts the image - patient clothing, image noise
<b>Coalition</b>	Congenital fusing of two bones
<b>Disarticulation</b>	Disconnection of limb from the body through the joint
<b>Congruent</b>	Joint that is not dislocated
<b>Involucrum</b>	Caused by osteomyelitis - thick sheath of periosteal new bone surrounding a sequestrum
<b>Sequestrum</b>	Calcification within a lucent lesion, separated from the surrounding bone
<b>Monomelic</b>	Condition that is confined to one limb
<b>Monostatic</b>	Condition that involves one bone
<b>Polystotic</b>	Condition that involves multiple bones
<b>Agenesis</b>	Failure of growth of an organ - congenital
<b>Aplasia</b>	Absence of development of a structure/organ
<b>Gold Standard</b>	Best test for the best diagnosis of a disease
<b>Subclinical disease</b>	Asymptomatic
<b>Cloaca</b>	Osteomyelitis - drainage hole

### X-Ray

Strengths	Weaknesses
Relatively Inexpensive	No soft tissue details
Widely available	Cannot detect loss of bone mass unless severe (30-50%)
Bone pathologies - #, tumour, arthritis, osteomyelitis, bone disease	Cannot detect bone marrow changes/oedema
Assess orthopaedic hardware	Ionising radiation
Terminology used in x-ray images:	
<b>Radiolucent:</b> black	
<b>Radio-opaque:</b> White	

### CT

Strengths	Weaknesses
2D + 3D images	Uses ionising radiation
Complex fractures - especially of flat bones + spine	Cannot show bone marrow changes/oedema
Assess for fracture healing	
Postop - degree of fusion/hardware complications	
<b>Bone window:</b> assesses cortical bone - makes bone appear more grey	
<b>Soft tissue window:</b> Assesses soft tissues, soft tissue appears more detailed, bony appears more bright	
<b>Hyperdense:</b> White	
<b>Hypodense:</b> Black	



### MRI

#### Strengths

Excellent for soft tissues

Bone Marrow/oedema

Non-ionising radiation

#### Weaknesses

Expensive

May require further imaging

Claustrophobic patients

**T1:** Fat is high signal - MRI shut off quickly

**T2:** Water is high signal - MRI shut off after a long period of time

**STIR:** Fat suppression, fluid is high signal - good for oedema.

### Ultrasound

#### Strengths

Anatomic + Dynamic functional evaluation of MSK tissues

Determines whether mass is Cystic/Solid nature

Vascularity of a lesion (Doppler)

Real time guidance for percutaneous procedures

Foreign body detection

#### Weaknesses

Operator dependant

Superficial structures only

**Hyperechoic:** White

**Hypoechoic:** Black



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