

## TRAUMA Long version



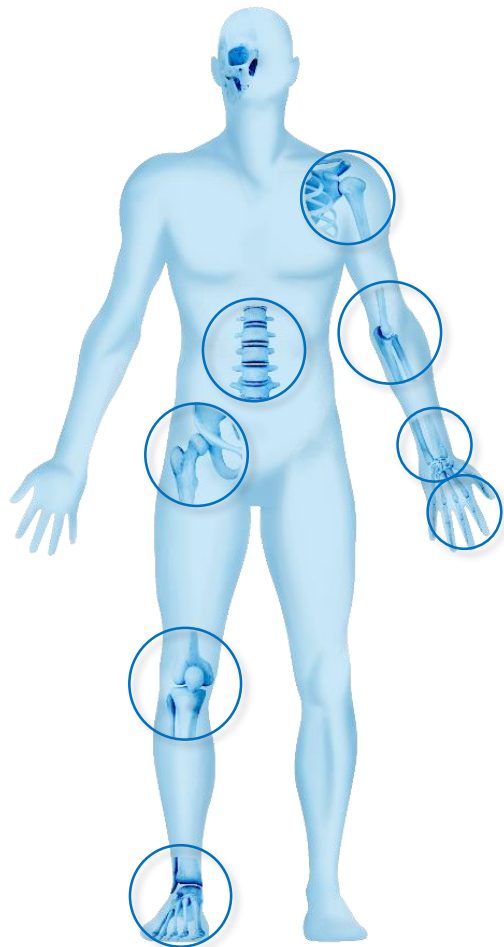
## Realistic fractures with closed soft tissue

Selected examples to showcase fracture portfolio

## Objectives of this document

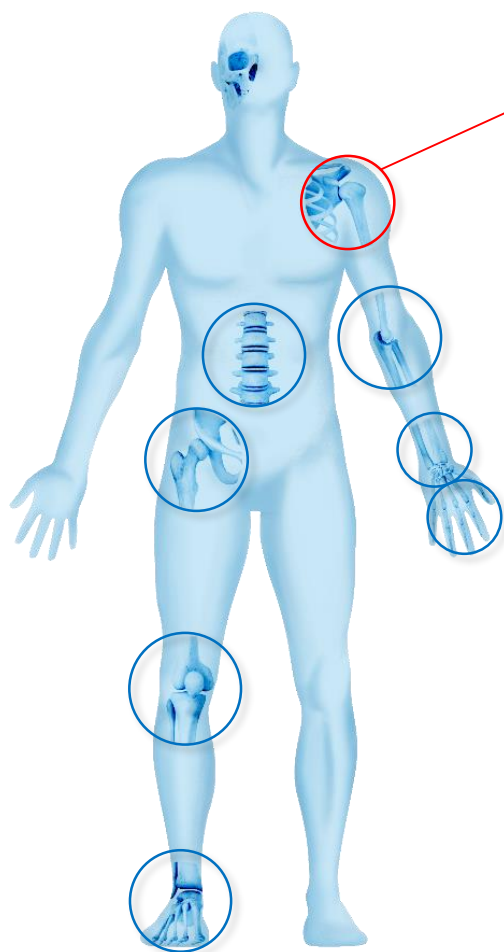
- **Objective** of this document is to **outline RIMASYS fracture portfolio** as basis for individual discussions and fracture ordering
- Fractures can be ordered by **area → bone → classification/fracture complexity**
- **Classification** of the fracture portfolio is based on **three levels of complexity**:
  - “Moderate” - Similar to AO A/B
  - “Advanced” - Similar to AO C1/2
  - “Master” - Similar to AO C3.1 – C3.3.
- Other fractures and **fracture specialities** e.g., Essex-Lopresti lesion, Moore II **are on request**
- Due to technical and biomechanical requirements, **specimens need to be dissected** depending on fracture type as outlined in this document


# Fracture portfolio – status-quo and outlook

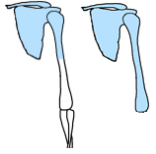


	Anatomic area	Bone		
1	<b>Shoulder:</b>	Prox. Humerus	Clavicula	Scapula
2	<b>Elbow:</b>	Dist. Humerus	Prox. Radius	Prox. Ulna
3	<b>Wrist:</b>	Dist. Radius/Ulna		
4	<b>Hand:</b>	Carpals	Metacarpals	Phalanges
5	<b>Hip:</b>	Acetabulum	Prox. Femur	
6	<b>Pelvis:</b>	Pelvic Ring		
7	<b>Knee:</b>	Dist. Femur	Prox. Tibia/Fibula	Patella
8	<b>Ankle:</b>	Dist. Tibia/Fibula		
9	<b>Foot:</b>	Calcaneus/Talus	Metatarsals	Phalanges
10	<b>Spine:</b>	Upper Cervical	Subaxial Cervical	Thoracic/lumbar Sacrum
11	<b>Peri-prosthetics:</b>	<i>Various anatomic areas under development</i>		

# Fracture portfolio – Shoulder



	Anatomic area	Bone		
1	<b>Shoulder: Prox. Humerus</b>	Clavicula Scapula		
2	Elbow: Dist. Humerus	Prox. Radius Prox. Ulna		
3	<div style="border: 1px solid red; padding: 10px;"> <p style="color: red; text-align: center;">Available in two typical specimen dimensions</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;">  <p><b>SH1</b></p> <ul style="list-style-type: none"> <li>• Entire Scapula</li> <li>• Entire Clavicle</li> <li>• Half of the Humerus</li> </ul> </div> <div style="text-align: center;"> <p><b>SH1+</b></p> <ul style="list-style-type: none"> <li>• Entire Scapula</li> <li>• Entire Clavicle</li> <li>• Entire Humerus</li> </ul> </div> </div> </div>			
4			Phalanges	
5				
6				
7			Patella	
8			Ankle: Dist. Tibia/Fibula	
9			Foot: Calcaneus/Talus	Metatarsals Phalanges
10	Spine: Upper Cervical	Subaxial Cervical Thoracic/lumbar Sacrum		
11	Peri-prosthetics: <i>Various anatomic areas under development</i>			



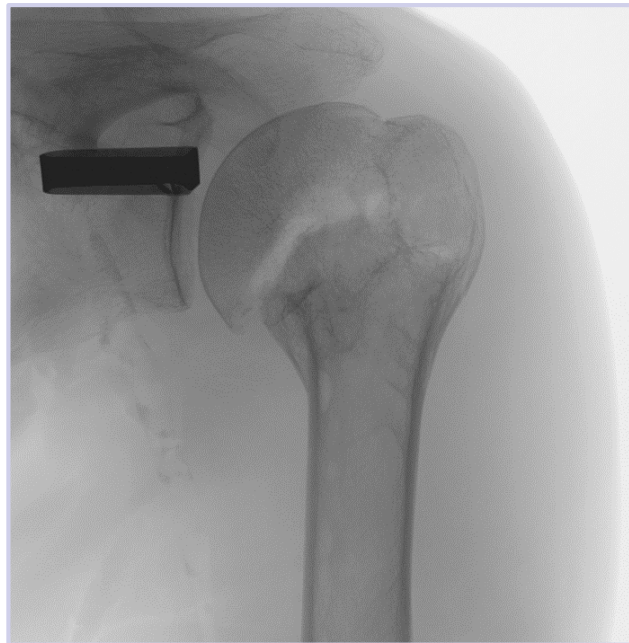
*level of complexity*

## Moderate



- Example: I-170418-L
- Fractures similar to:
  - AO 11-A2-A3/B1

## Advanced



- Example: L-190569-L
- Fractures similar to:
  - AO 11-B2-B3/C1

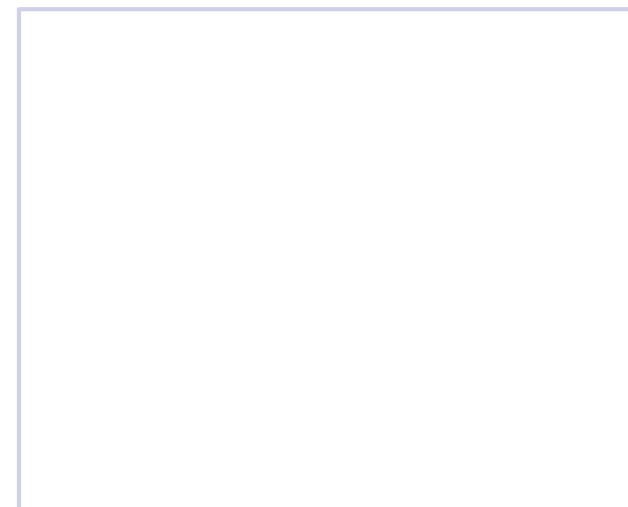
## Master



- Example: L-190602-R
- Fractures similar to:
  - AO 11-C2/C3.x

Pre-fracturing

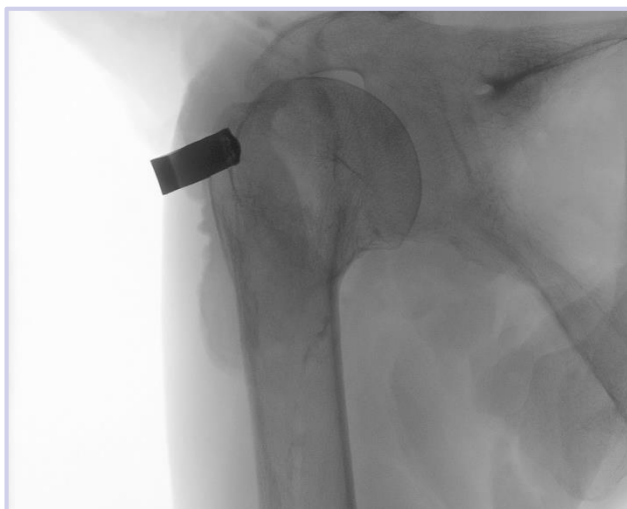
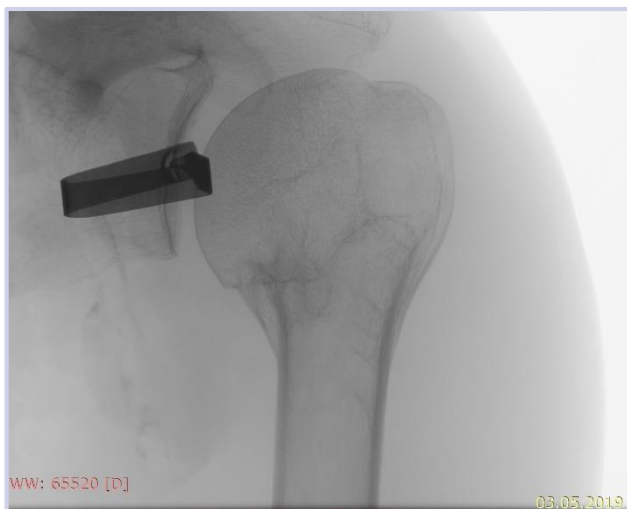
Post-fracturing



Fractures similar to: AO 11-A2-A3/B1

Pre-fracturing

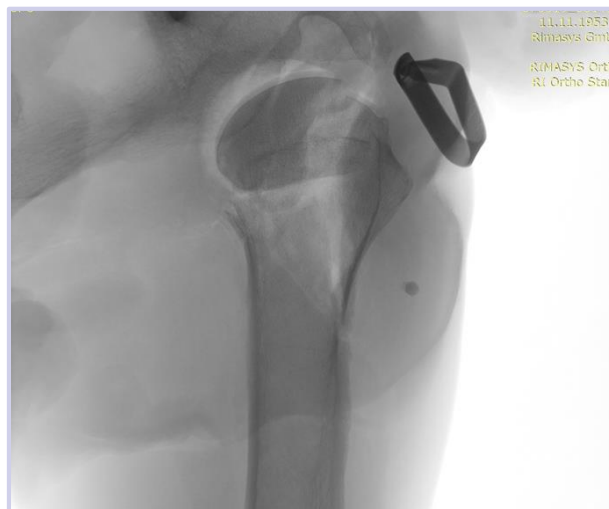
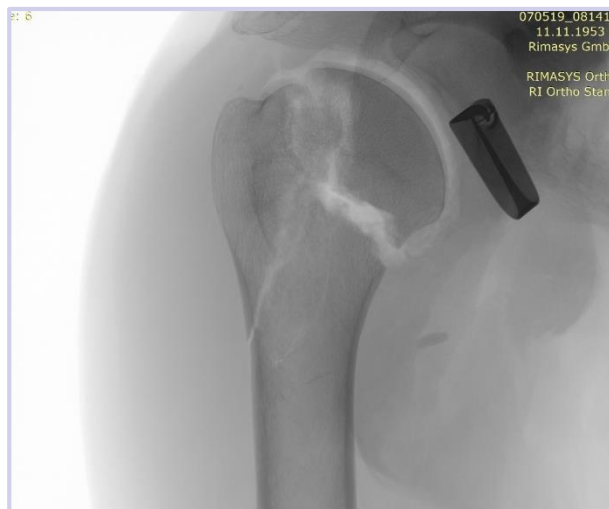
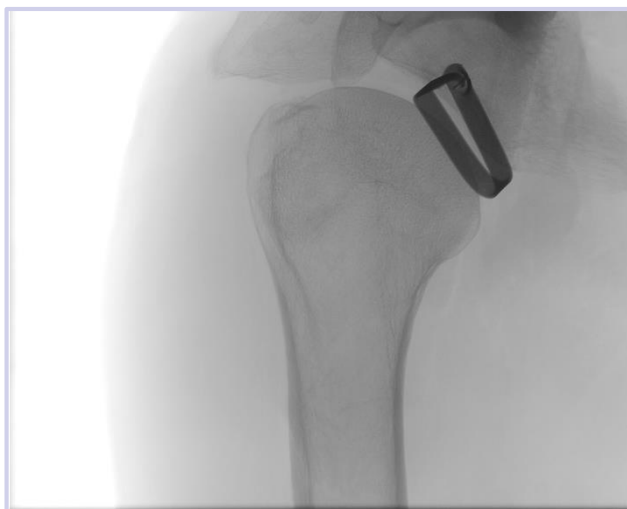
Post-fracturing



Fractures similar to: AO 11-B2-B3/C1

Pre-fracturing

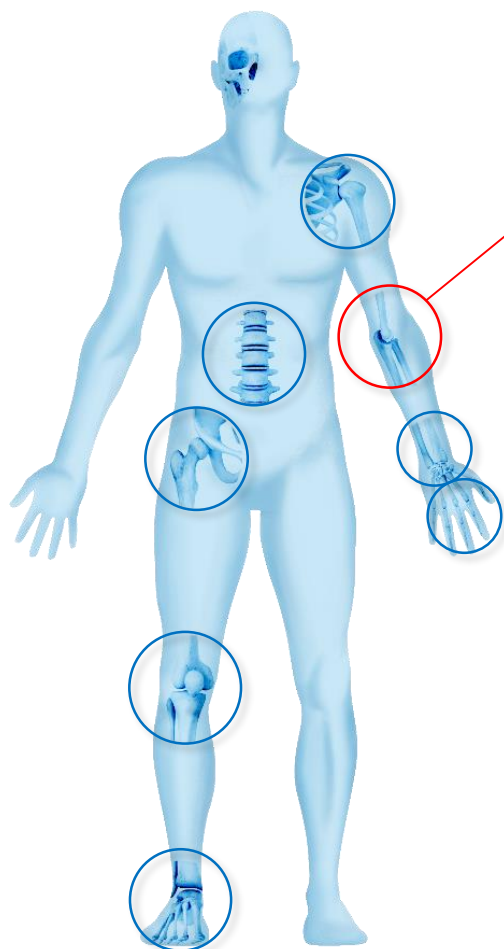
Post-fracturing



Fractures similar to: AO 11-C2-C3.x



# Fracture portfolio – Elbow



	Anatomic area	Bone		
1	Shoulder:	Prox. Humerus	Clavicula	Scapula
2	<b>Elbow:</b>	<b>Dist. Humerus</b>	<b>Prox. Radius</b>	<b>Prox. Ulna</b>
	Specimen dimensions:	EB2; EB1+	EB1+	EB2; EB1+
4	Hand:	Carpals	Metacarpals	Phalanges
5	Hip:	Acetabulum	Femur	Pelvis
6	Pelvis:	Pelvis		
7	Knee:	Distal femur	Proximal tibia	Patella
8	Ankle:	Distal tibia	Distal fibula	
9	Foot:	Calcaneus/Talus	Metatarsals	Phalanges
10	Spine:	Upper Cervical	Subaxial Cervical	Thoracic/lumbar Sacrum
11	Peri-prosthetics:	Various anatomic areas under development		

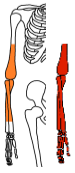
**Specimen dimensions**

**EB1+**

- Half of Humerus
- Long Radius

**EB2**

- Half of Humerus
- To fingertip



*level of complexity*

## Moderate



- Example: L-182173-L
- Fractures similar to:
  - AO 13-A2 - A3

## Advanced



- Example: L-182569-R
- Fractures similar to:
  - AO 13-B1 – B3

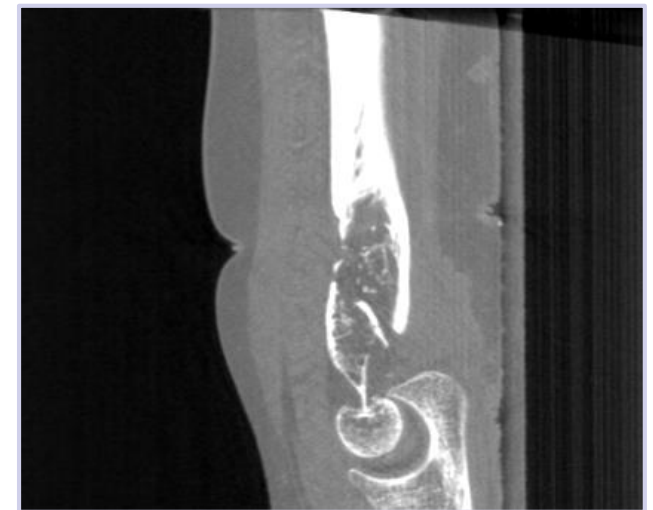
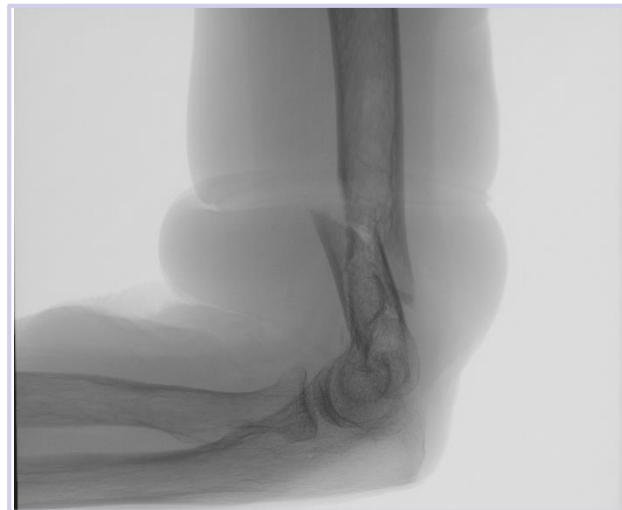
## Master



- Example: L-182511-L
- Fractures similar to:
  - AO 13-C1 - C3.x

Pre-fracturing

Post-fracturing



Fractures similar to: AO 13- A2-A3

Pre-fracturing

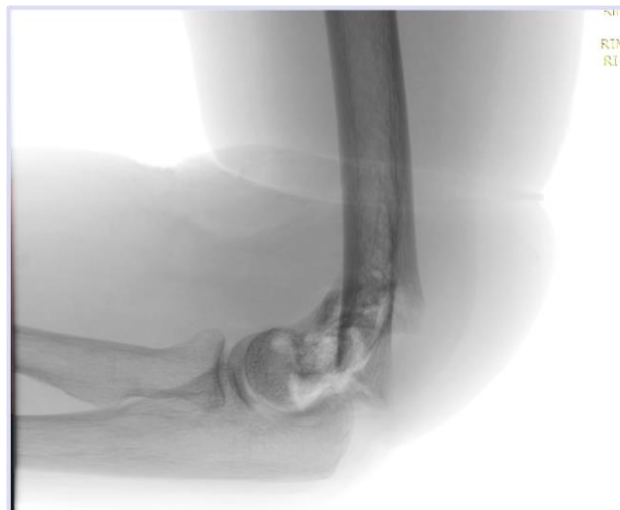
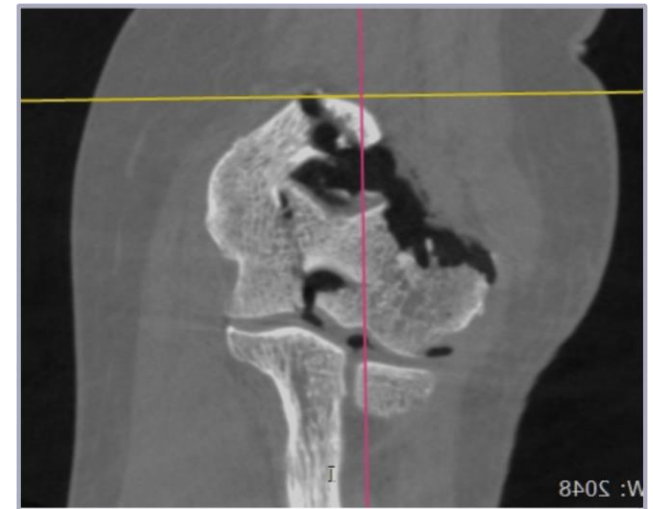
Post-fracturing



Fractures similar to: AO 13-B1- B3

Pre-fracturing

Post-fracturing



Fractures similar to: AO 13-C1 – C3.x



*level of complexity*

## Moderate



- Example: L-160727-R
- Fractures similar to:
  - AO 21-A2
  - Mason 2

## Advanced



- Example: L-160693-R
- Fractures similar to:
  - AO 21-C1/C2
  - Mason 3

## Master



- Example: L-161341-R
- Fractures similar to:
  - Terrible Triad
  - Mason 4

Pre-fracturing

Post-fracturing



Fractures similar to: AO 21-A2, Mason 2

Pre-fracturing

Post-fracturing

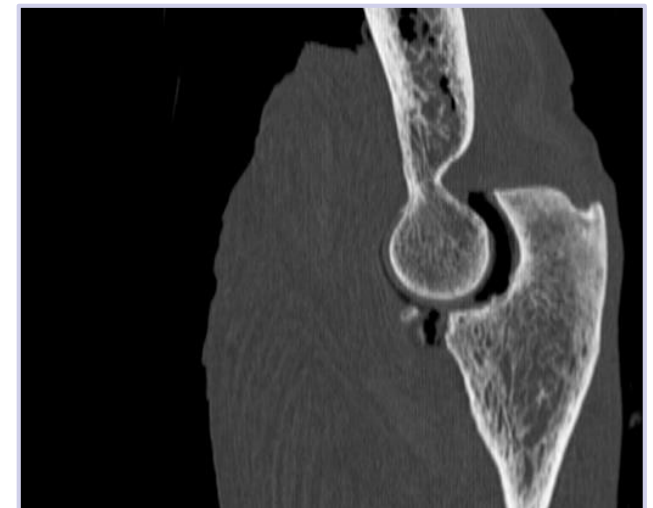


Fractures similar to: AO 21-C1/C2, Mason 3

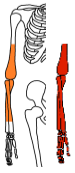


Pre-fracturing

Post-fracturing



Fractures similar to: Terrible Triad, Mason 4



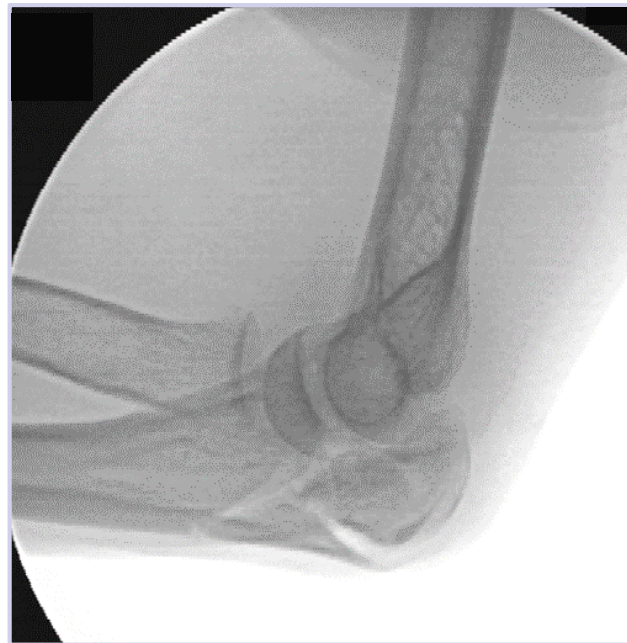
*level of complexity*

## Moderate



- Example: L-161866-L
- Fractures similar to:
  - AO 21-B1
  - Mayo type II A

## Advanced



- Example: L-161850-R
- Fractures similar to:
  - AO 21-B1.3
  - Mayo type II B

## Master



- Example: L-161788-L
- Fractures similar to:
  - AO 21-C2/3
  - Monteggia-like
  - Mayo type III

Pre-fracturing

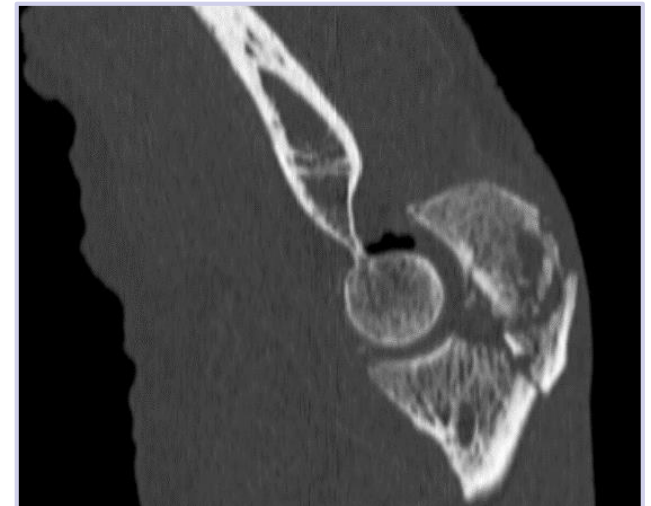
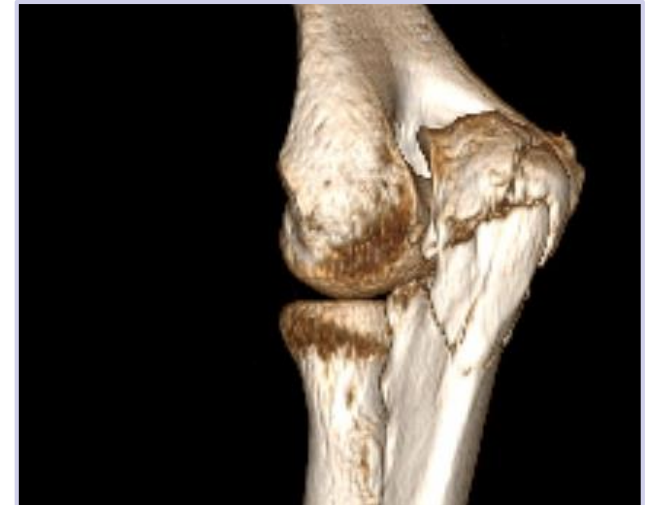
Post-fracturing



Fractures similar to: AO 21-B1, Mayo type II A

Pre-fracturing

Post-fracturing



Fractures similar to: AO 21-B1.3, Mayo type II B

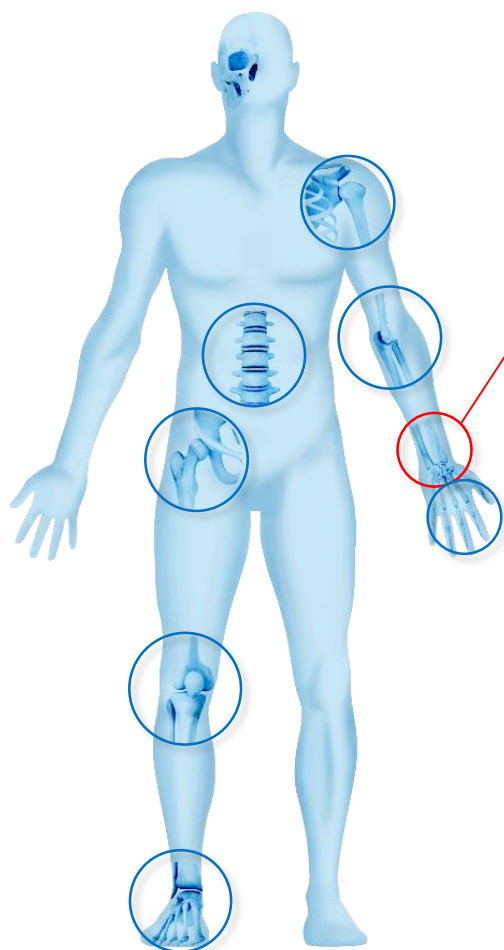
Pre-fracturing



Post-fracturing

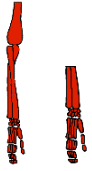


Fractures similar to:AO 21-C2/3, Monteggia-like, Mayo type III

# Fracture portfolio – Wrist



	Anatomic area	Bone
1	Shoulder: Prox. Humerus	Clavicula Scapula
2	Elbow: Dist. Humerus	Prox. Radius Prox. Ulna
3	<b>Wrist: Dist. Radius/Ulna</b>	
4	Hand: Carpals	Metacarpals Phalanges
5	<p>Available in two typical specimen dimensions</p> <div style="display: flex; justify-content: space-around;"> <div style="text-align: center;"> <p><b>EB2</b></p> <ul style="list-style-type: none"> <li>• Half of Humerus</li> <li>• To fingertip</li> </ul>  </div> <div style="text-align: center;"> <p><b>WR</b></p> <ul style="list-style-type: none"> <li>• Mid-Radius</li> <li>• To fingertip</li> </ul>  </div> </div>	
6		
7		Patella
8		
9		Phalanges
10	Spine: Upper Cervical	Subaxial Cervical Thoracic/lumbar Sacrum
11	Peri-prosthetics: <i>Various anatomic areas under development</i>	



*level of complexity*

## Moderate



- Example: L-160673-L
- Fractures similar to:
  - AO 23-A2/A3

## Advanced



- Example: L-161926-L
- Fractures similar to:
  - AO A23-B1-3/C1

## Master



- Example: L-171666-R
- Fractures similar to:
  - AO 23-C3.x

Pre-fracturing

Post-fracturing



Fractures similar to: AO 23-A2/A3



Pre-fracturing

Post-fracturing



Fractures similar to: AO A23-B1-3/C1

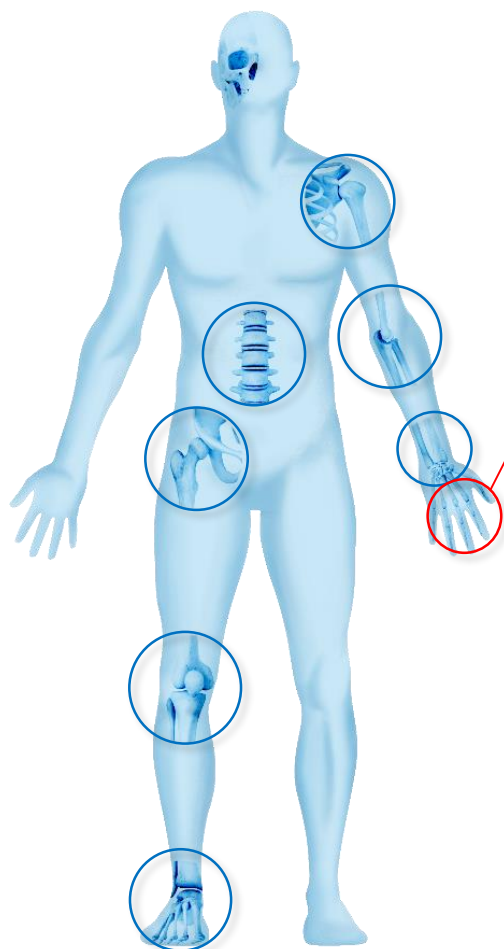
Pre-fracturing

Post-fracturing



Fractures similar to: AO 23-C3.x

# Fracture portfolio – Hand



	Anatomic area	Bone		
1	Shoulder:	Prox. Humerus	Clavicula	Scapula
2	Elbow:	Dist. Humerus	Prox. Radius	Prox. Ulna
3	Wrist:	Dist. Radius/Ulna		
4	<b>Hand:</b>	<b>Carpals</b>	<b>Metacarpals</b>	<b>Phalanges</b>
5	Hip:	Acetabulum	Prox. Femur	
6				
7				Patella
8				
9				Phalanges
10				Thoracic/lumbar Sacrum
11	Peri-prosthetics:	<i>Various anatomic areas under development</i>		

Available in two typical specimen dimensions

## HA

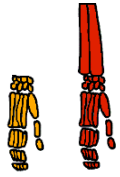
- Carpals
- To fingertip



## WR

- Mid-Radius
- To fingertip





*level of complexity*

## Moderate



- Example: L-161926-L  
Fractures similar to:
  - Moderate scaphoid

## Advanced



- Example: L-160143-L  
Fractures similar to:
  - Adv. triquetrum fracture
  - Adv. scaphoid fracture

## Master



- Example: L-161889-L  
Fractures similar to:
  - Perilunate dislocation

Pre-fracturing

Post-fracturing



Similar to: Moderate scaphoid fracture

Pre-fracturing



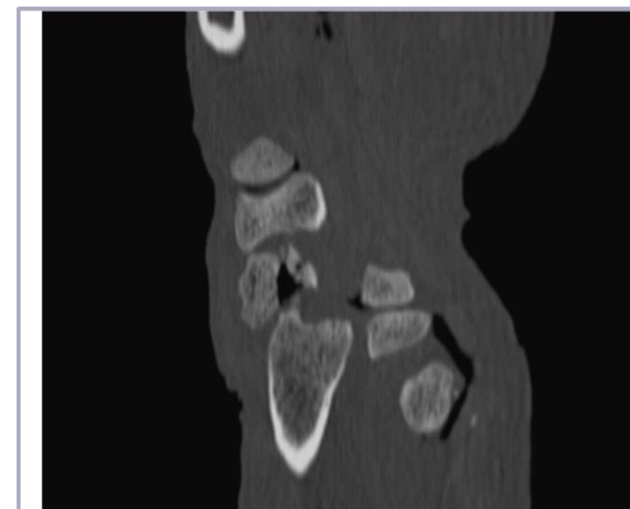
Post-fracturing



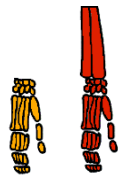
Similar to: Adv. triquetrum fracture, adv. scaphoid fracture

Pre-fracturing

Post-fracturing



Similar to: Perilunate dislocation



*level of complexity*

## Moderate



- Example: L-162004-R  
Fractures similar to:
  - Fracture of Metacarpal bone II and III

## Advanced



- Example: L-161341-R  
Fractures similar to:
  - Dislocated Fractures of Metacarpal bone I-III

## Master

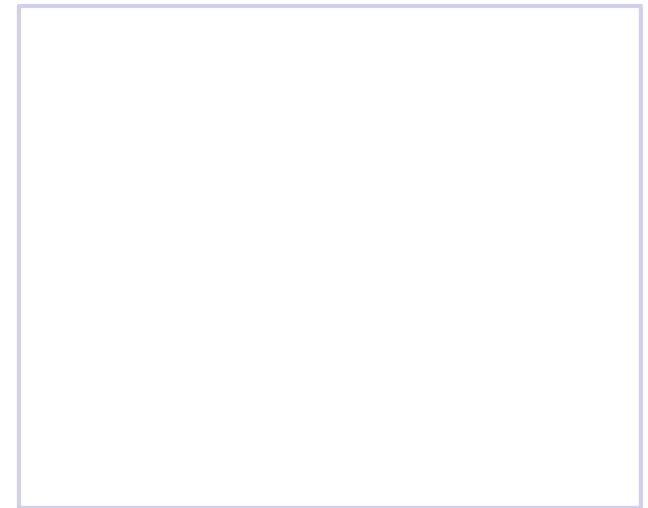
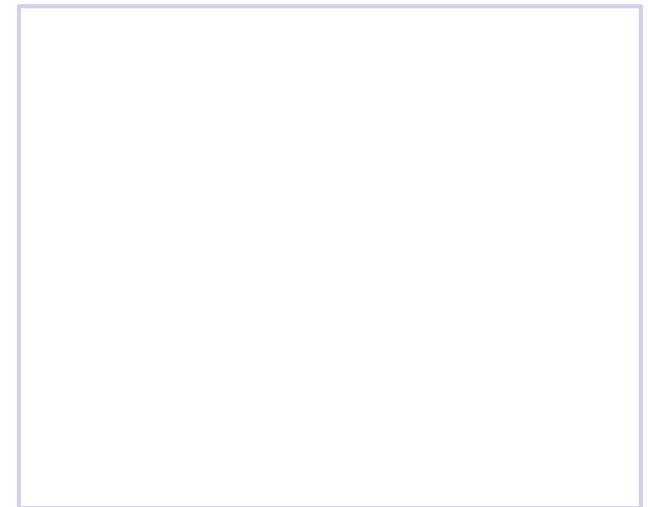


- Example: I-170435-R  
Fractures similar to:
  - Double Fracture of Metacarpalbone III



Pre-fracturing

Post-fracturing



Similar to: Fracture of Metacarpal bone II and III

Pre-fracturing

Post-fracturing

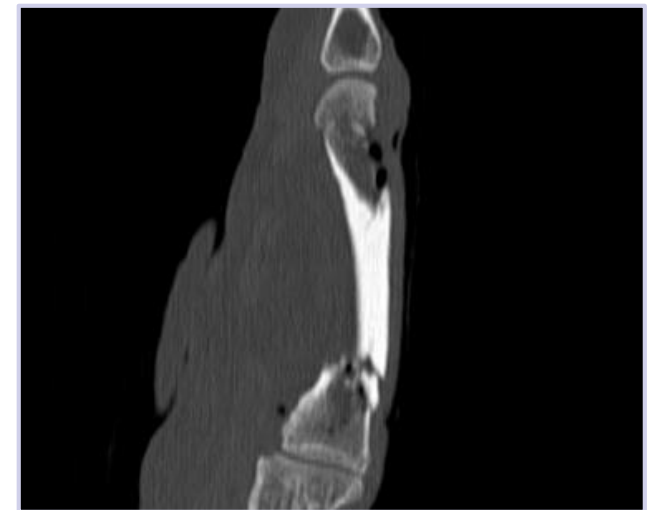


Similar to: Fracture of Metacarpal bone I and III

Pre-fracturing

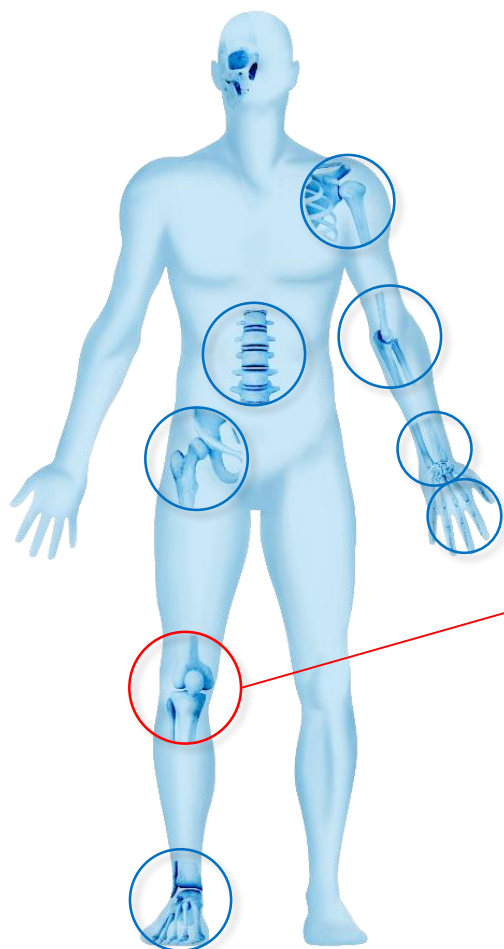


Post-fracturing



Similar to: Double Fracture of Metacarpalbone III

# Fracture portfolio – Knee

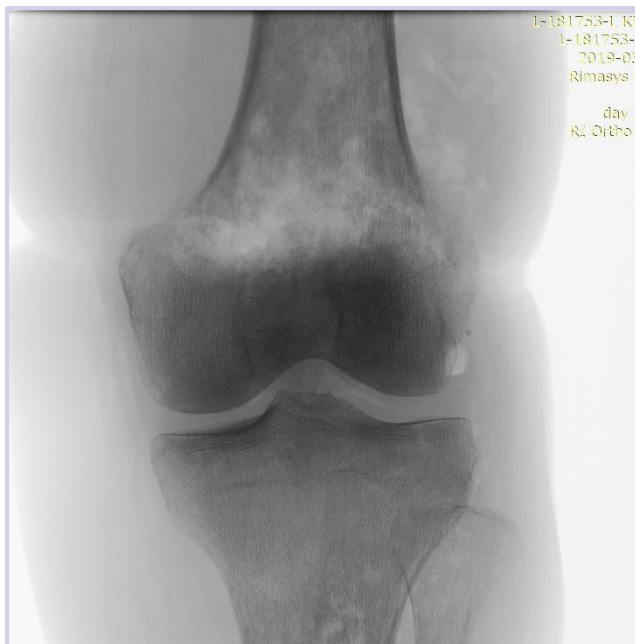


	Anatomic area	Bone		
1	Available in two typical specimen dimensions			
2				
3			<p><b>KN1</b></p> <ul style="list-style-type: none"> <li>• Mid-Femur</li> <li>• Mid-Tibia</li> </ul>	<p><b>KN2</b></p> <ul style="list-style-type: none"> <li>• Mid-Femur</li> <li>• To toe tip</li> </ul>
4				
5				
6				
7	<b>Knee:</b> Dist. Femur	Prox. Tibia/Fibula   Patella		
8	Ankle:	Dist. Tibia/Fibula		
9	Foot:	Calcaneus/Talus   Metatarsals   Phalanges		
10	Spine:	Upper Cervical   Subaxial Cervical   Thoracic/lumbar   Sacrum		
11	Peri-prosthetics:	<i>Various anatomic areas under development</i>		



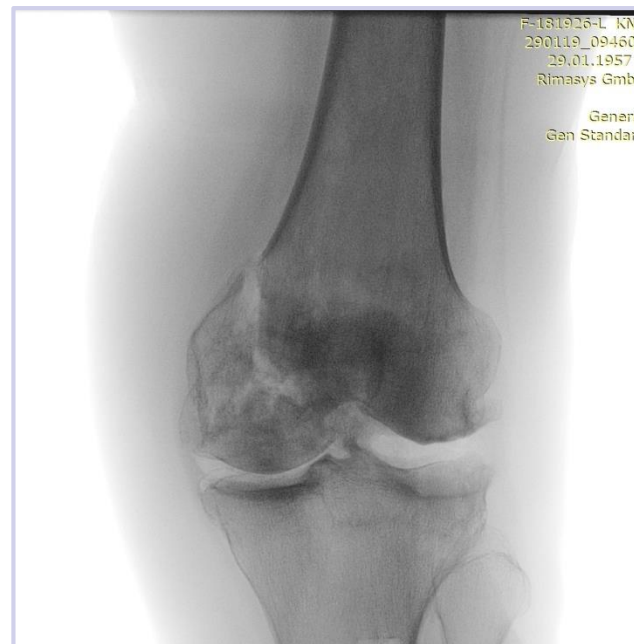
*level of complexity*

## Moderate



- Example: F-181753-L
- Fractures similar to:
  - AO 33-A2-A3

## Advanced



- Example: F-181926-L
- Fractures similar to:
  - AO 33-B1-B3

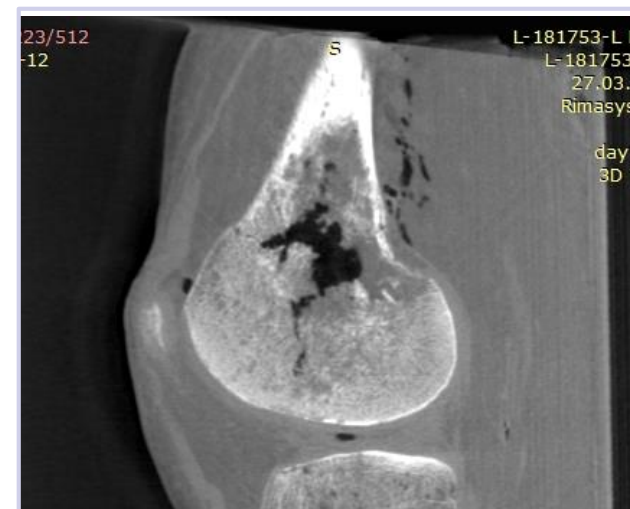
## Master



- Example: L-182586-R
- Fractures similar to:
  - AO 33-C1-C3.x

Pre-fracturing

Post-fracturing



Fractures similar to: AO 33-A2-A3

Pre-fracturing

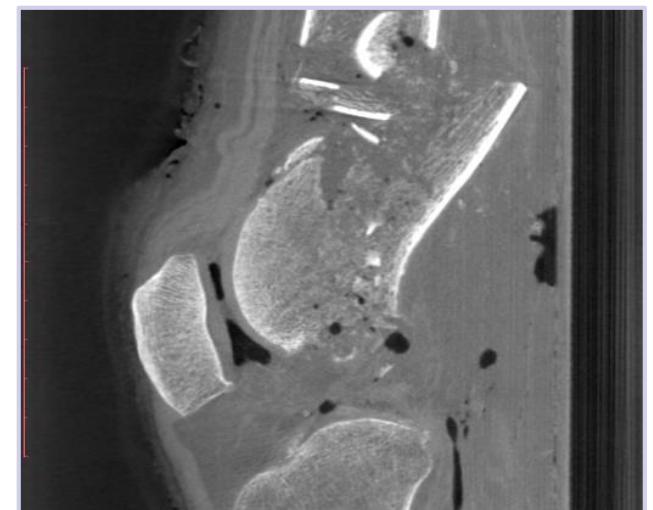
Post-fracturing



Fractures similar to: AO 33-B1-B3

Pre-fracturing

Post-fracturing



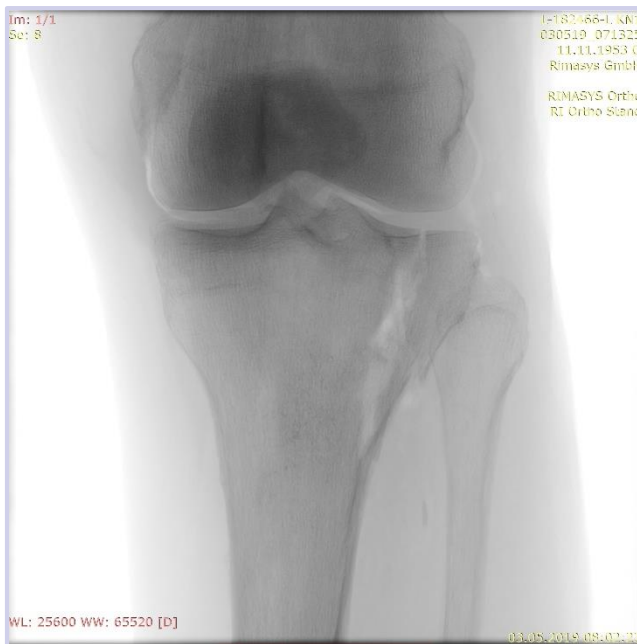
Fractures similar to: AO 33-C1-C3





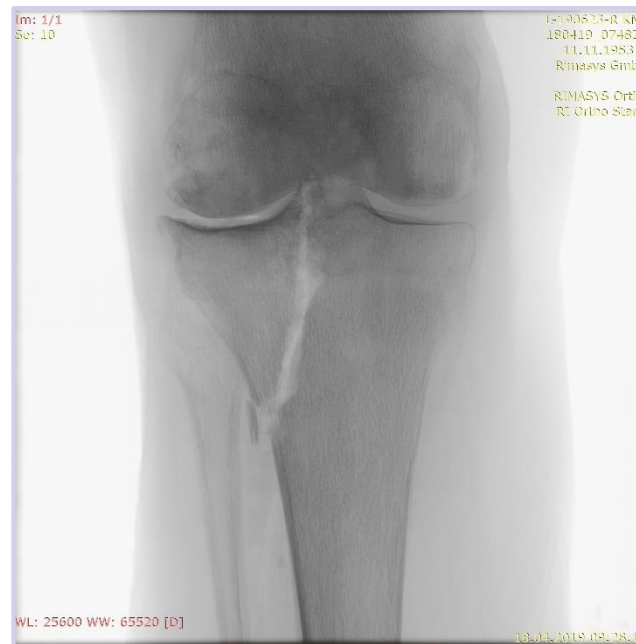
*level of complexity*

## Moderate



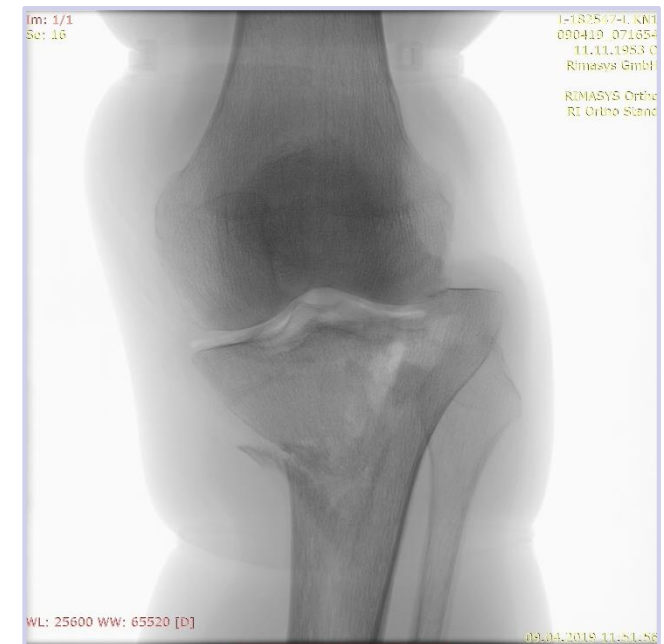
- Example: L-182466-L
- Fractures similar to:
  - AO 41-A3/B1
  - Schatzker I

## Advanced



- Example: L-190623-R
- Fractures similar to:
  - AO 41-B2/C1
  - Schatzker II - III

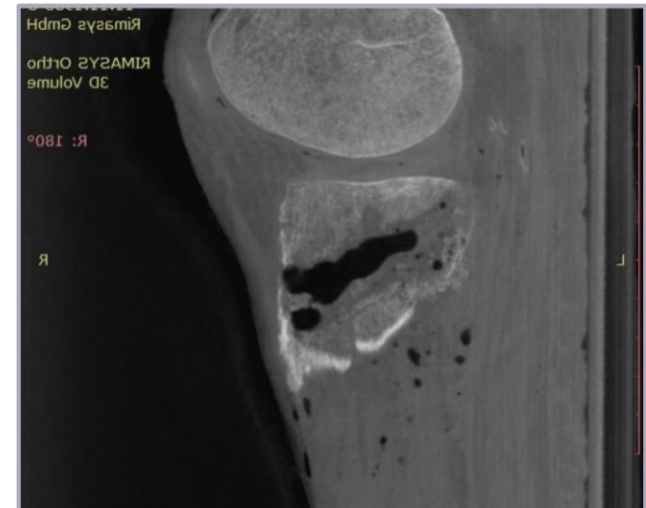
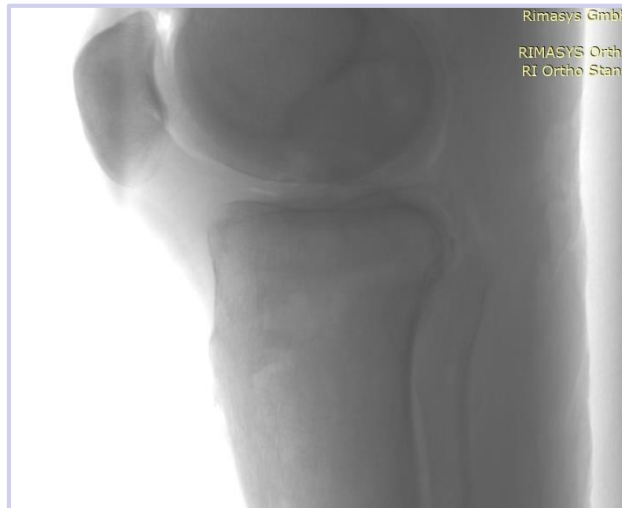
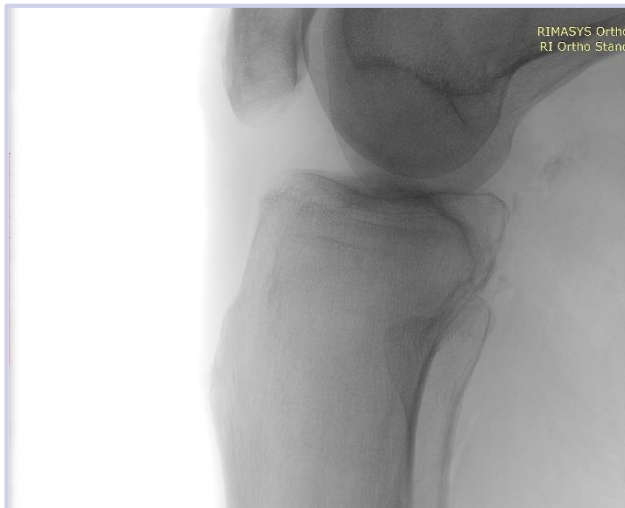
## Master



- Example: L-182547-L
- Fractures similar to:
  - AO 41-C2 - C3
  - Schatzker IV - VI

Pre-fracturing

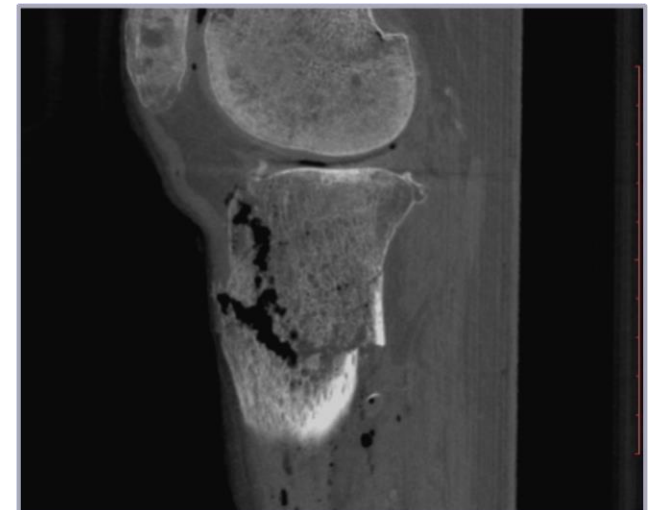
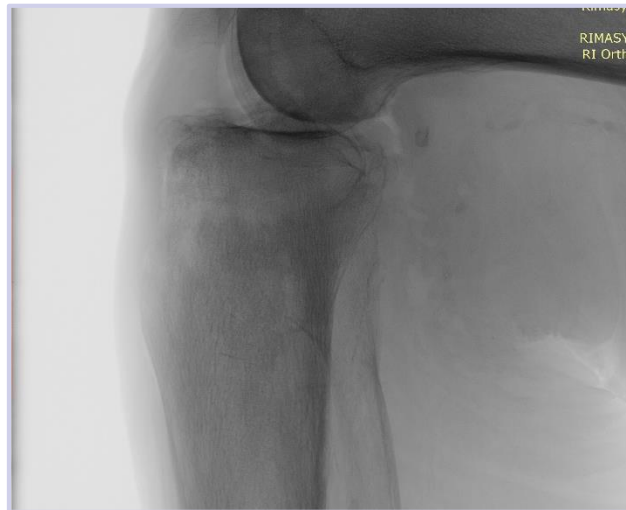
Post-fracturing



Fractures similar to: AO 41-A3/B1, Schatzker I

Pre-fracturing

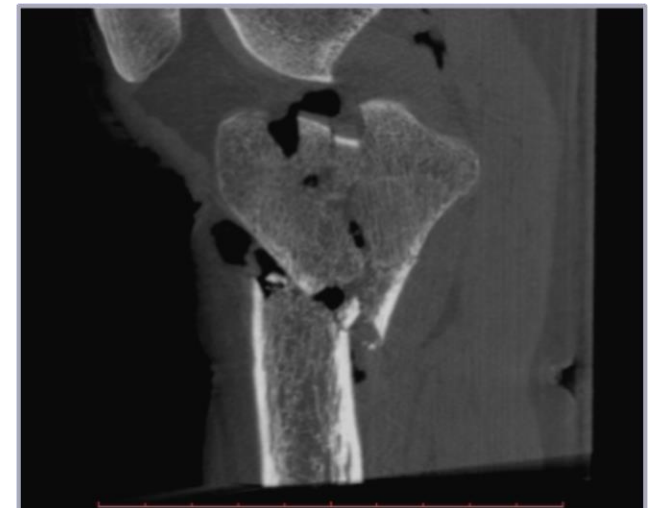
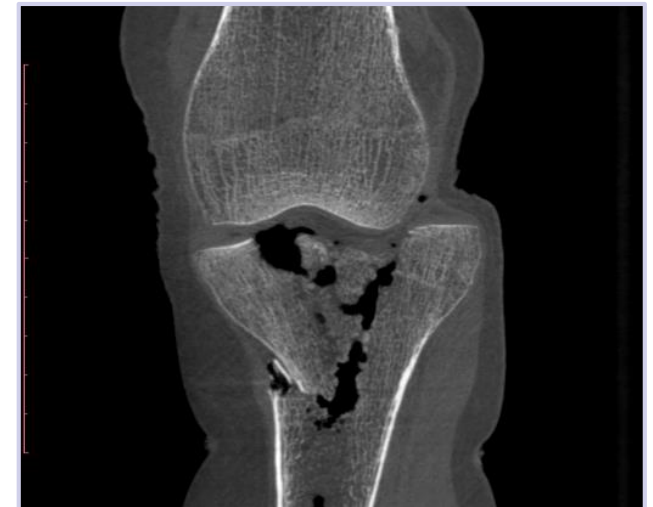
Post-fracturing



Fractures similar to: AO 41-B3/C1, Schatzker II - III

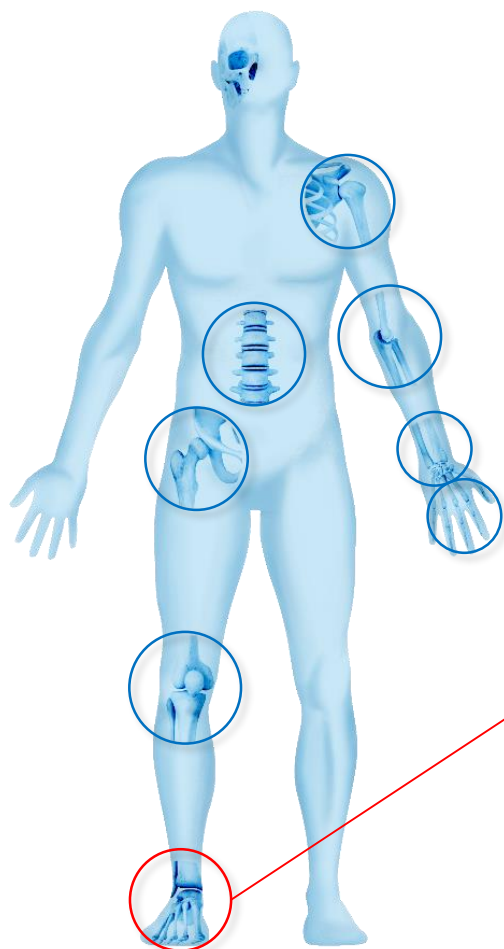
Pre-fracturing

Post-fracturing



Fractures similar to: AO 41-C2 - C3, Schatzker IV - VI

# Fracture portfolio – Ankle

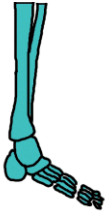


	Anatomic area	Bone		
1	Shoulder: Prox. Humerus	Clavicula	Scapula	
2	Elbow: Dist. Humerus	Prox. Radius	Prox. Ulna	
3	Wrist: Dist. Radius	Metacarpals	Phalanges	
4	Hand: Dist. Radius	Prox. Femur		
5	Forearm: Dist. Radius	Prox. Tibia/Fibula	Patella	
6	Hand: Dist. Radius	Prox. Tibia/Fibula	Patella	
7	Knee: Dist. Femur	Prox. Tibia/Fibula	Patella	
8	<b>Ankle: Dist. Tibia/Fibula</b>			
9	Foot: Calcaneus/Talus	Metatarsals	Phalanges	
10	Spine: Upper Cervical	Subaxial Cervical	Thoracic/lumbar	Sacrum
11	Peri-prosthetics: <i>Various anatomic areas under development</i>			

Available in one typical specimen dimension

**FT**

- Mid-Tibia
- To toe tip



*level of complexity*

## Moderate



- Example: F-1603388-L
- Fractures similar to:
  - AO 43-A3/B1

## Advanced



- Example: F-1508564-R
- Fractures similar to:
  - AO 43-B3/C1-C2

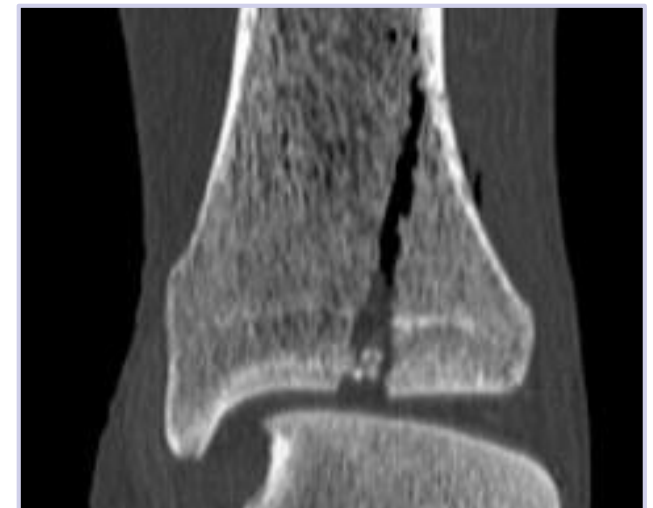
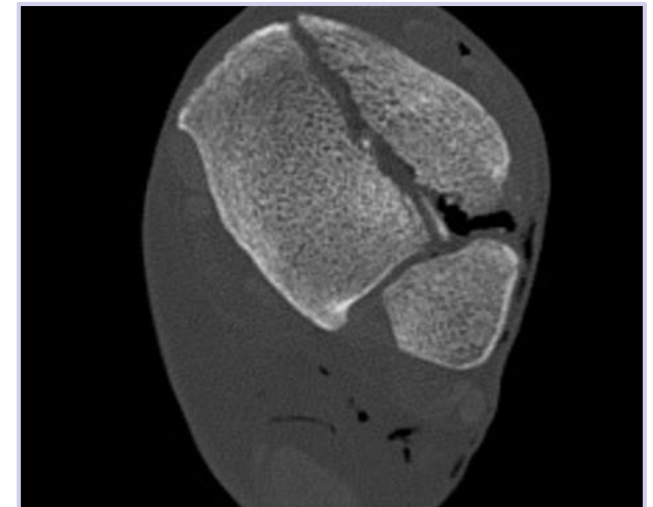
## Master



- Example: F-1603388-R
- Fractures similar to:
  - AO 43-C3.x

Pre-fracturing

Post-fracturing

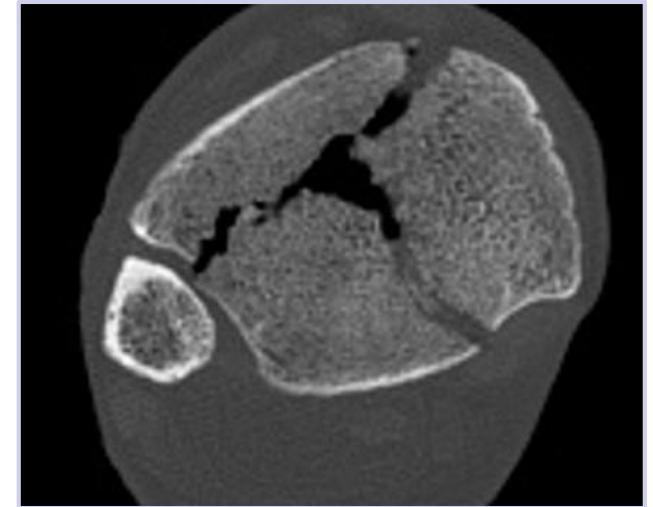
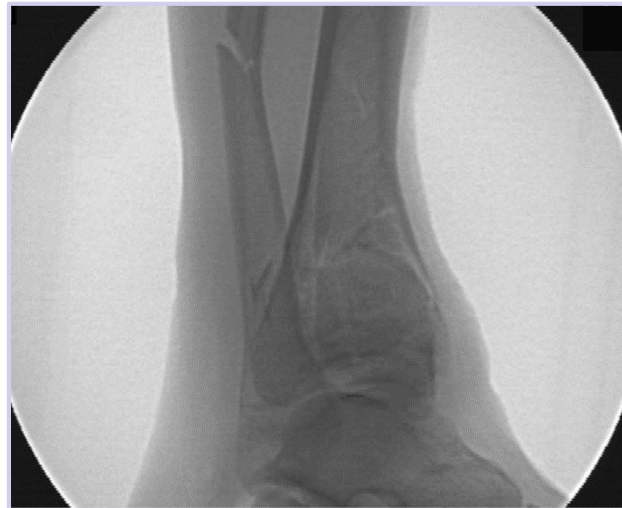


Fractures similar to: AO 43-A3/B1

Pre-fracturing



Post-fracturing

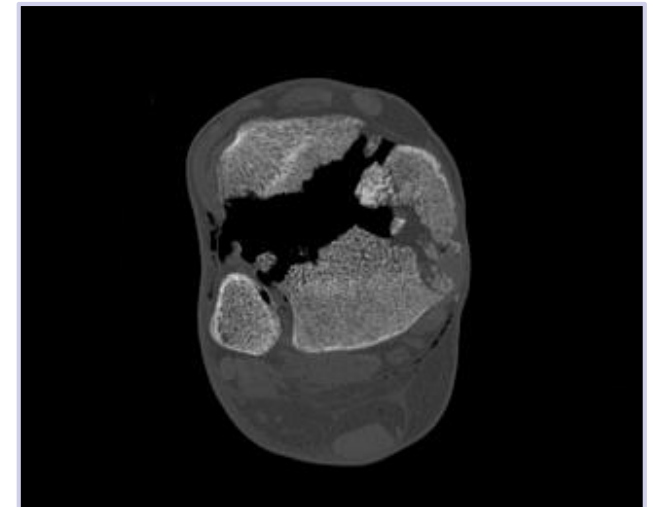


Fractures similar to: AO 43-B3/C1-C2



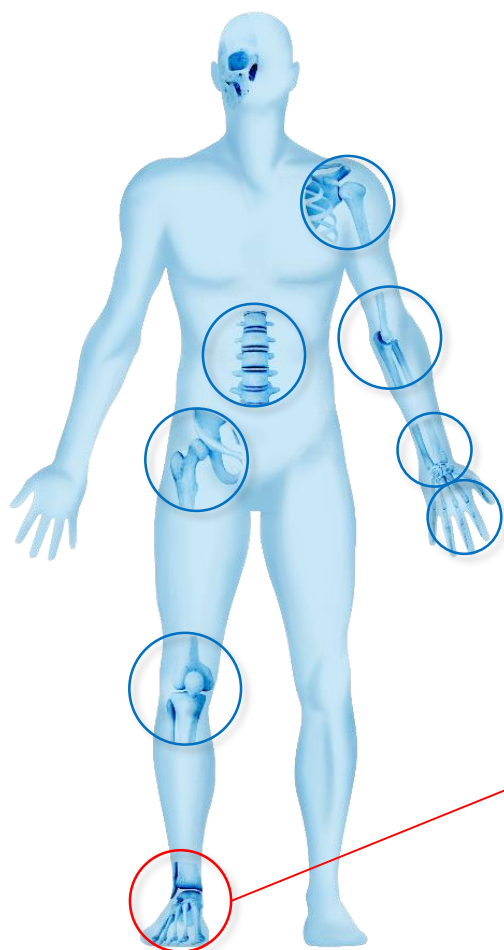
Pre-fracturing

Post-fracturing



Fractures similar to AO 43-C3.x:

# Fracture portfolio – Foot



	Anatomic area	Bone		
1	Shoulder:	Prox. Humerus	Clavicula	Scapula
2	Elbow:	Dist. Humerus	Prox. Radius	Prox. Ulna
3	Wrist:	Dist. Radius/Ulna	Metacarpals	Phalanges
4	Hand:	Metacarpals	Phalanges	
5	Forearm:	Prox. Femur		
6	Upper leg:			
7	Lower leg:	Prox. Tibia/Fibula	Patella	
8	Ankle:	Dist. Tibia/Fibula		
9	Foot:	Calcaneus/Talus	Metatarsals	Phalanges
10	Spine:	Upper Cervical	Subaxial Cervical	Thoracic/lumbar Sacrum
11	Peri-prosthetics:	Various anatomic areas under development		

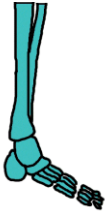
Available in one typical specimen dimension

**FT**

- Mid-Tibia
- To toe tip

Available to order

Under Development / upon request  
(2-6 months)



*level of complexity*

## Moderate



- Example: M-150725-L
- Fractures similar to:
  - Simple non-displaced
  - Extreme beak

## Advanced



- Example: L-170895-L
- Fractures similar to:
  - Displaced calcaneus

## Master

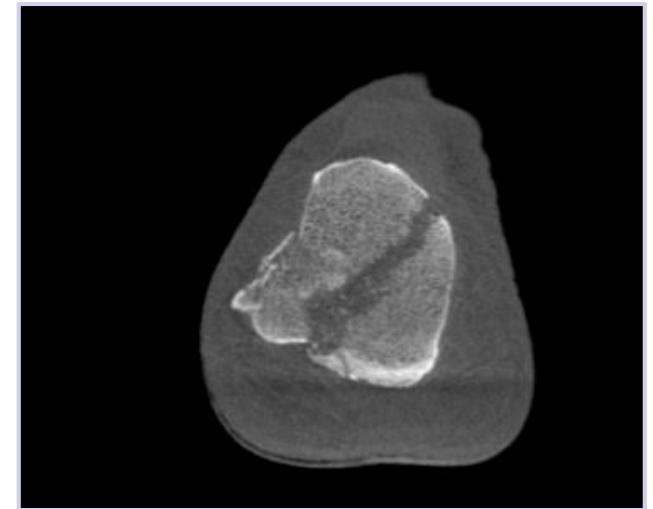
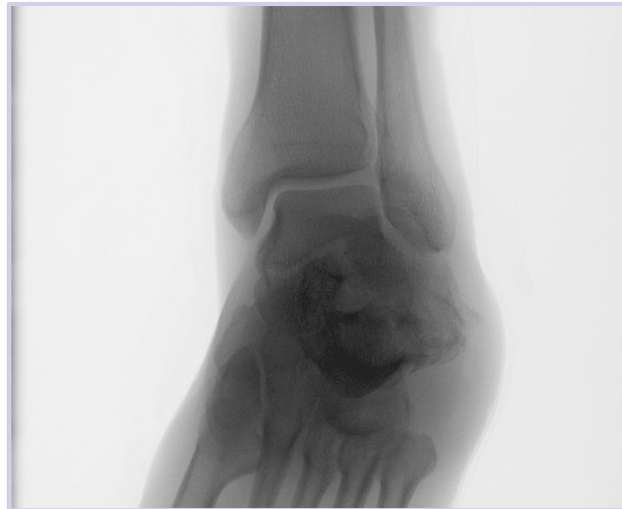


- Example: L-170808-L
- Fractures similar to:
  - Displaced calcaneus and talus

Pre-fracturing



Post-fracturing

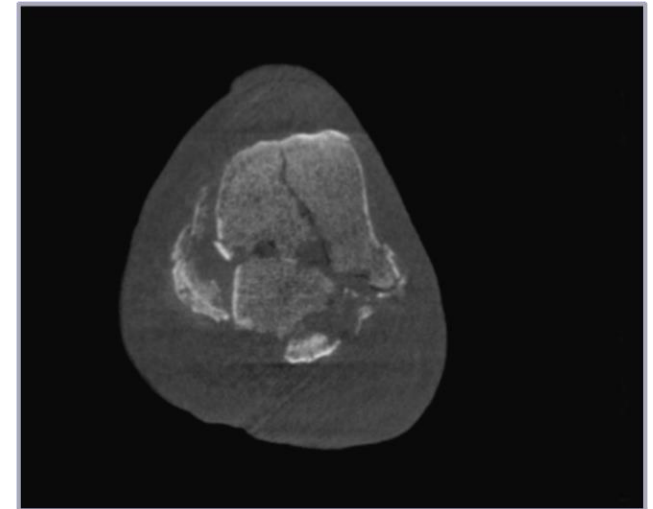


Fractures similar to: Simple non-displaced, extreme beak

Pre-fracturing



Post-fracturing

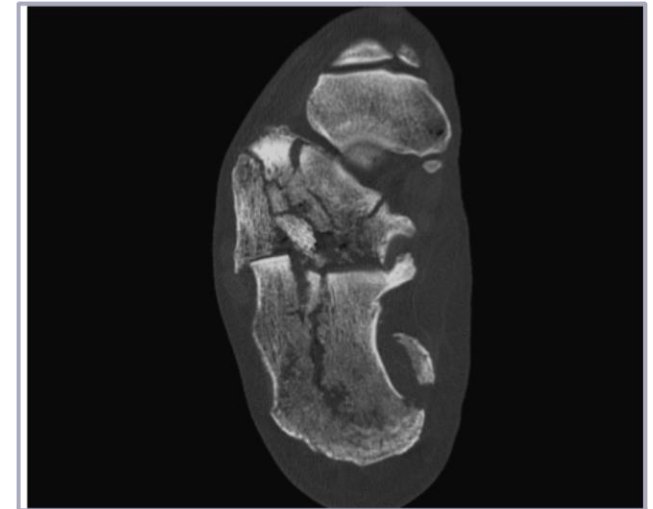


Fractures similar to: Simple non-displaced, extreme beak

Pre-fracturing



Post-fracturing



Fractures similar to: Displaced calcaneus and talus

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