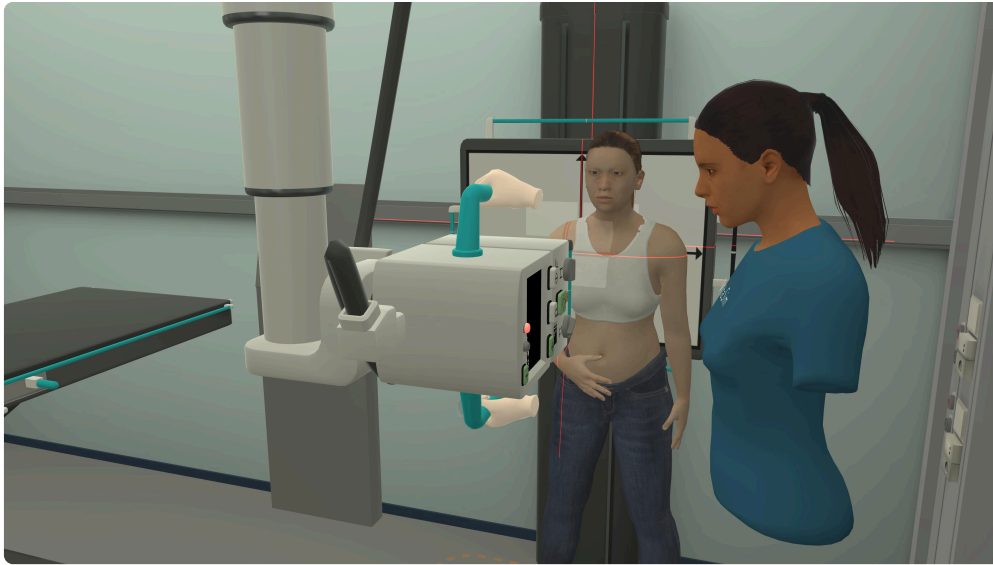


# Shoulder simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The radiographic tube locks and detents to the wall bucky, enabling standard bucky tray operation.

## Simulated Exposures



The simulation is confirmed to be capable of supporting at least the following views: **AP Abducted, PA Tangential, and Apical**. Additional views may be possible, check the joint mobility and the available bones.

## Included Anatomy



- Primary bones: Humerus, scapula, clavicle
- Adjacent structures: Ribs 1-6 (partial), upper thoracic spine, lower cervical spine

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Joint Mobility in Simulation



- Patient: Axial rotation, adjustable anteroposteriorly and mediolaterally
- Shoulder: Internal and external rotation

## Bone variations



- A healthy bone version
- A pathological version featuring a proximal humerus fracture

## Known Limitations



We acknowledge that the patient is able to rotate the shoulder joint, but arm movement that would reposition the shoulder blade (scapula) backward or forward is not yet supported. This means standard internal and external rotation is simulated, but active scapular motion through arm extension or flexion is not included in this version.

We are working to address these limitations in future updates.

# Elbow - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector setup uses "free plating".

## Simulated Exposures



The simulation is confirmed to be capable of supporting at least the following views: **PA**, **Lateral**, and **Oblique** elbow. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Humerus
- Radius
- Ulna

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Joint Mobility in Simulation



- Shoulder: Internal and external rotation.
- Elbow: Flex and extend.
- Patient: Adjustable anteroposteriorly and mediolaterally

## Bone variations



1. A healthy bone version.
2. A distal humerus fracture.
3. A radial head fracture.
4. An ulnar olecranon fracture.

## Known Limitations



We acknowledge that, the forearm cannot supinate or pronate, which is an important joint mobility feature for accurately simulating elbow exposures.

We are working to address this limitation in future updates.

# Wrist - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector setup uses "free plating", as the seated patient cannot be positioned for a bucky.

## Simulated Exposures



The simulation is confirmed to be capable of supporting at least the following views: **PA**, **Lateral**, and **Oblique** wrist. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



Forearm: Radius, Ulna  
Hand: Carpal bones, Metacarpals, Phalanges

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.

## Joint Mobility in Simulation



- Shoulder: Internal and external rotation, as well as lateral and medial elevation
- Elbow: Flex and extend.
- Forearm: Pronate and supinate.
- Wrist: Flexion, extension, adduction, and abduction.
- Patient: Adjustable anteroposteriorly and mediolaterally

## Bone variations



1. A healthy bone version.
2. A pathological version featuring a Colles' fracture.
3. A post-operative case featuring a volar locking plate.



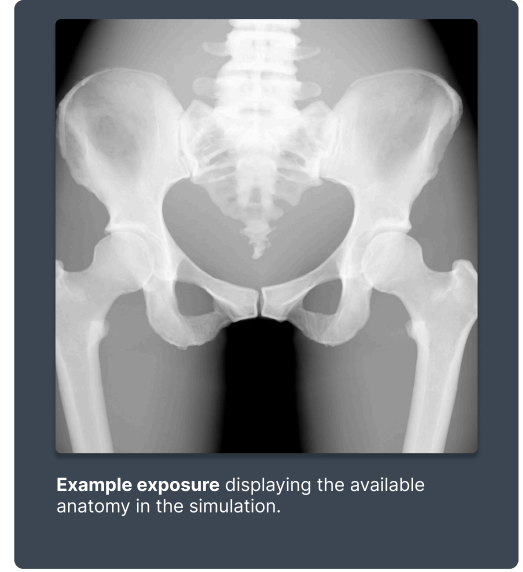
## Known Limitations



The wrist simulation does not provide any positioning pillows.

# Hip and Pelvic - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The radiographic tube locks and detents to the wall and table bucky, enabling standard bucky tray operation. Detector can be used with both bucky and table-top.

## Simulated Exposures



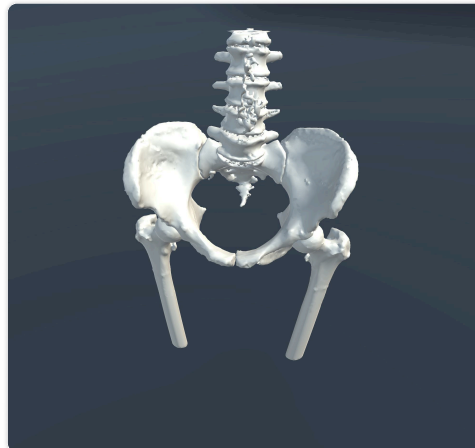
The simulation is confirmed to be capable of supporting at least the following views: **AP**, **Lateral**, and **Axial**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Ilium, Ischium, Pubis, Sacrum, Coccyx
- L3, L4, L5
- Right and left femur

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Joint Mobility in Simulation



- Hip: Internal and external femur rotation on both legs
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



1. Supine with healthy bones
2. Supine with a collum femoris fracture
3. Supine with an ossis pubis fracture
4. Standing with healthy bones

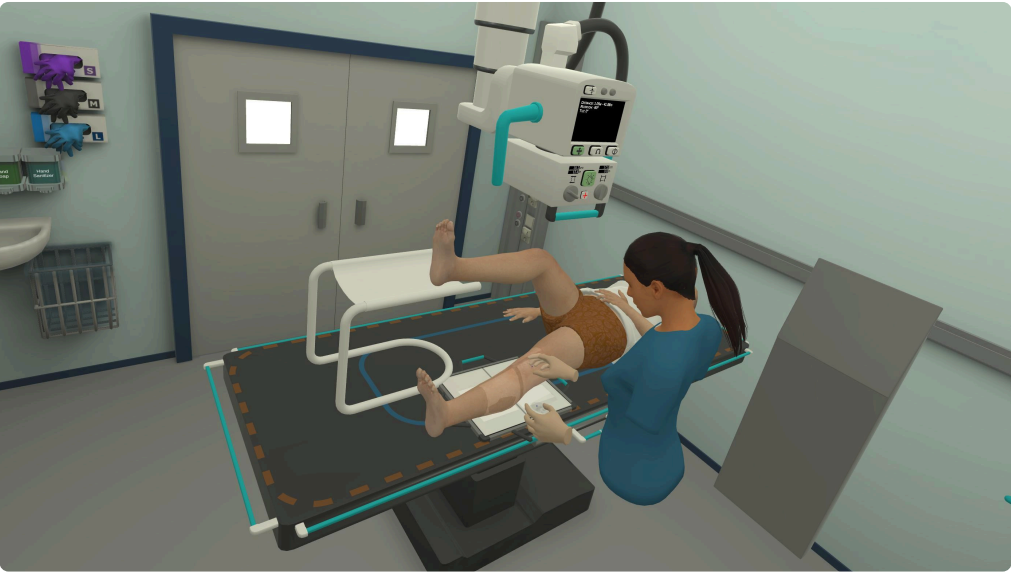
## Known Limitations



No known limitations for this simulation as of version v1.9.0

# Knee - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality

The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods

The detector is setup for use as "free plating" and with a mobile detector cart.

Note: The patient is set up for a cross-table lateral projection

## Simulated Exposures

The simulation is confirmed to be capable of supporting at least the following views: **AP**, and **Cross-table Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy

- Tibia
- Fibula
- Femur
- Patella

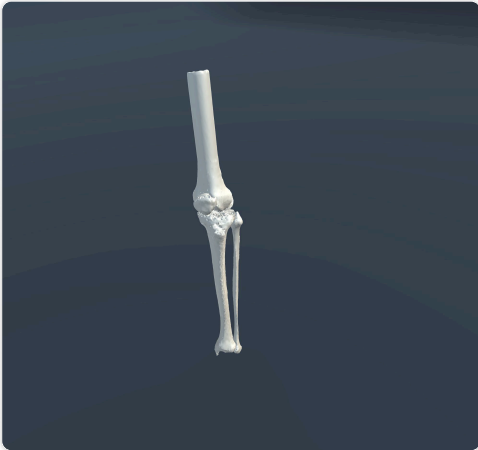
The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.

## Joint Mobility in Simulation

- Hip: Internal and external hip rotation
- Leg: Adduction and abduction
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations

1. A healthy bone version
2. A pathological version featuring osteoarthritis



## Known Limitations

We acknowledge that the patient remains in a supine position and cannot be positioned standing. For lateral knee imaging, only a cross-table projection is currently possible, as the patient cannot be rotated onto their side. We are aware that these are limitations for standard knee imaging practices and are working to address them in future updates.

# Ankle - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use as "free plating", as the patient is supine on the table.

## Simulated Exposures



The simulation is confirmed to be capable of supporting at least the following views: **AP**, **Oblique**, and **Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Tibia
- Fibula
- Tarsal bones
- Metatarsal bones
- Phalanges

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.

## Joint Mobility in Simulation



- Foot: Plantarflexion and dorsiflexion
- Hip: Internal and external rotation
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



1. A healthy bone version
2. A pathological version featuring a lateral malleolus fracture
3. A pathological version featuring a medial malleolus fracture



## Known Limitations



We acknowledge that the ankle joint lacks sufficient internal rotation to accurately simulate certain projections. This limitation might affect the ability to position the foot correctly for views that require medial rotation. We are aware of this issue and are working to improve joint mobility in future updates.

# Foot - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use as "free plating", as the patient is recumbent on the table.

## Simulated Exposures



The simulation is confirmed to be capable of supporting at least the following views: **AP, Oblique, Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Tibia
- Fibula
- Tarsal bones
- Metatarsal bones
- Phalanges

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.

## Joint Mobility in Simulation



- Foot: Plantarflexion and dorsiflexion for lateral body position
- Hip: Internal and external rotation for lateral body position
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



1. A healthy bone version
2. A pathological version featuring a 5th metatarsal avulsion fracture



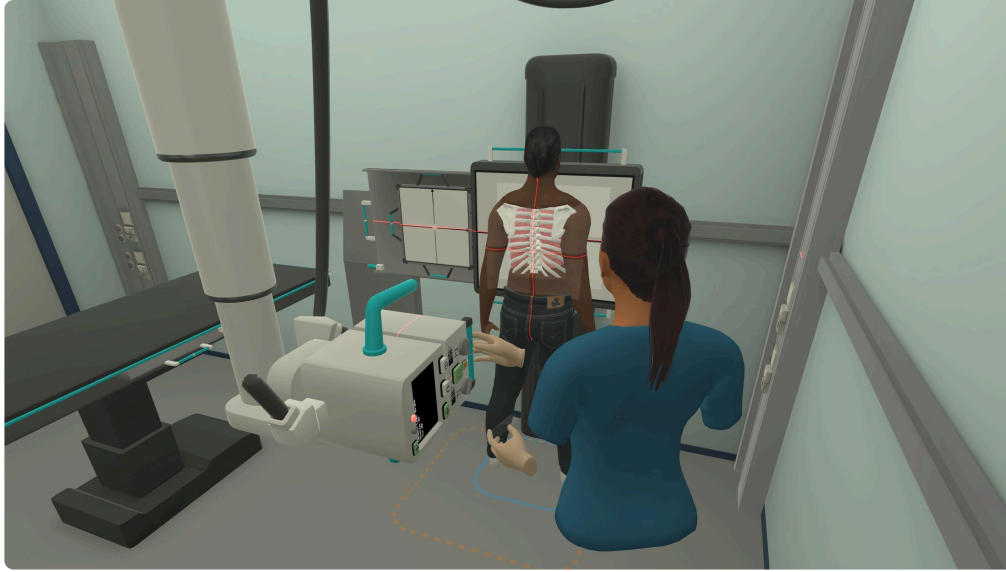
## Known Limitations



No known limitations for this simulation as of version v1.9.0

# Bony Ribs - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use with wall bucky

## Simulated Exposures



The simulation is confirmed to support at least the following views: **AP, PA, AP Anilateral, Posterior Axillary, and Anterior Axillary**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Thoracic vertebrae, scapulae, clavicles
- Ribs 1–10 (bilateral), sternum, upper lumbar spine, lower cervical spine

## Joint Mobility in Simulation



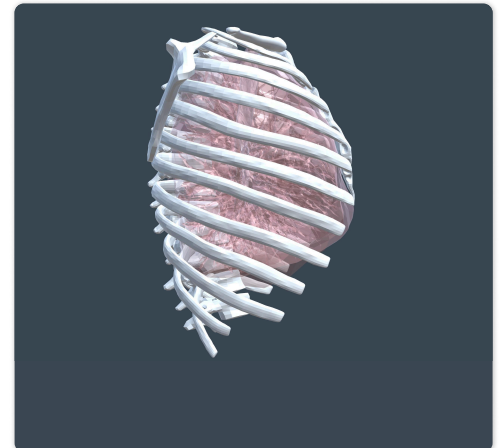
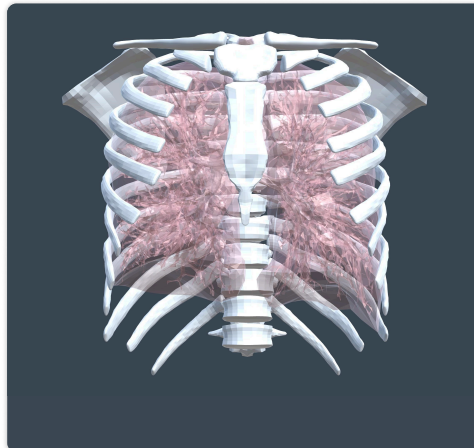
The rib phantom does not feature joint mobility but can be freely picked up and repositioned as needed.

## Bone variations



- A healthy bone version

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Known Limitations



We acknowledge that the rib anatomy exhibits a low presence of trabecular bone structure, limiting the realism of radiographic representation. Additionally, there is no functionality to simulate lung inspiration or expiration, which restricts the ability to replicate thoracic imaging under dynamic respiratory conditions.

# Skull - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use as "free plating" or table bucky.

## Simulated Exposures



The simulation is confirmed to support at least the following views: **Supine PA, Lateral, and PA Axial**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Cranium, upper cervical spine (C1–C6), occipital condyles
- Frontal, parietal, temporal, occipital, sphenoid, ethmoid bones (all unpaired or bilateral)

## Joint Mobility in Simulation



- Cranium: Flexion, extension, and rotation (left and right) via atlanto-occipital and atlantoaxial joints.
- Jaw: Depress and elevate through the temporomandibular joint.
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



- A healthy bone version

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Known Limitations



We acknowledge that, the skull simulation is limited to supine patient positioning only. This constraint restricts the ability to replicate standard radiographic projections that require upright or prone positioning. For this we refer to the **C-spine simulation**.

# C-spine - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector setup uses wall bucky.

## Simulated Exposures



The simulation is confirmed to support at least the following cervical spine projections: **AP**, **AP axial**, **Oblique**, and **Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Cranium, cervical spine
- Thoracic vertebrae, scapulae, clavicles
- Ribs 1–10 (bilateral), sternum, upper lumbar spine

## Joint Mobility in Simulation



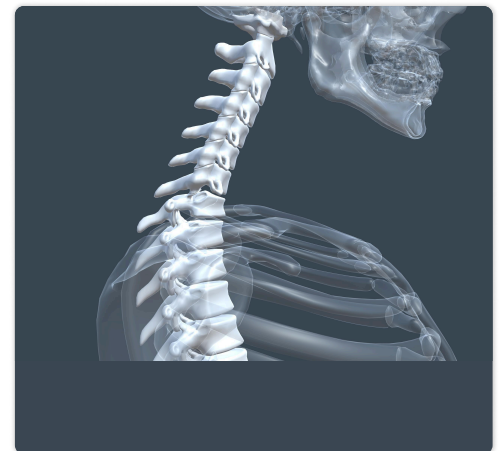
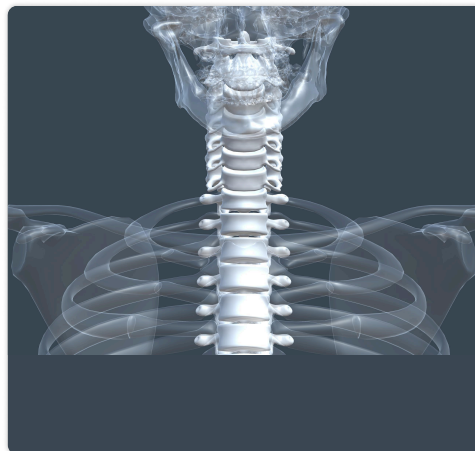
- Head: Flexion, extension, and rotation via upper cervical joints.
- Neck: Bends, tilts, and rotates via cervical spine.
- Jaw: Opens and closes via temporomandibular joint.
- Patient: Rotates axially for in-plane adjustment.

## Bone variations



- A healthy bone version

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Known Limitations



We acknowledge that the C-spine simulation is limited to erect patient positioning only. This constraint restricts the ability to replicate standard radiographic projections that require prone positioning. For this we refer to the **Skull simulation**.

# L-spine - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use with the table bucky.

## Simulated Exposures



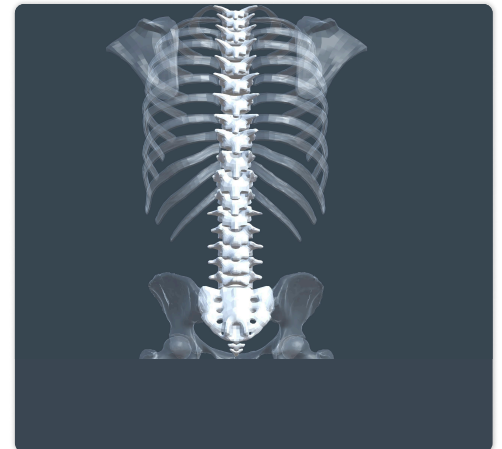
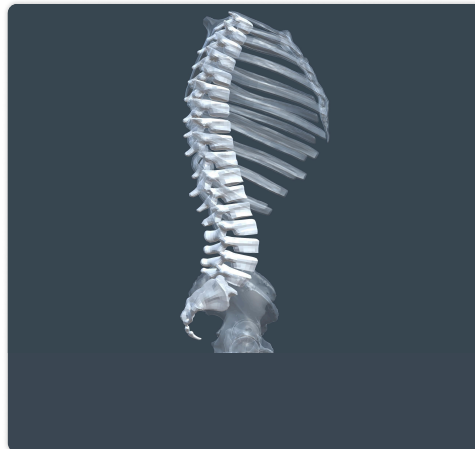
The simulation is confirmed to support at least the following cervical spine projections: **AP, Lateral L5-S1, Oblique, and Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Thoracic vertebrae, scapulae
- Ribs 1-10 (bilateral), sternum
- Lumbar spine
- Pelvic

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Joint Mobility in Simulation



- Patient: Lateral rotation onto right side for decubitus positioning
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



- A healthy bone version

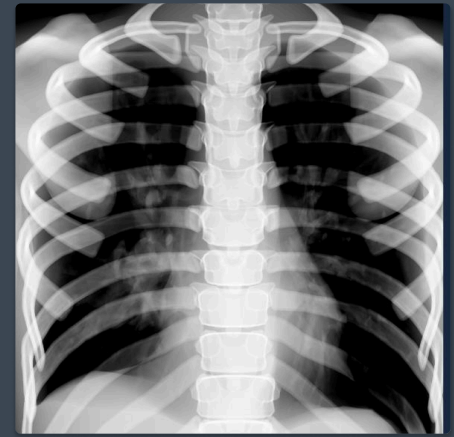
## Known Limitations



We acknowledge that the L-spine simulation is limited to recumbent patient positioning only. This constraint restricts the ability to replicate standard radiographic projections that require prone or erect positioning. Additionally, the vertebrae are represented with a low presence of trabecular bone structures, which may limit the realism of radiographic appearance, particularly in evaluations of bone quality and internal architecture.

# T-spine - simulation preview and details

This document outlines the simulation module's available anatomy, imaging capabilities, and technical features. It is intended to help readers understand the simulation's functionality and limitations for educational use. While not designed for diagnostic-quality imaging, the simulator provides sufficiently detailed images for practicing radiographic positioning techniques. Read more below.



**Example exposure** displaying the available anatomy in the simulation.

**NOTICE:** The **example exposure** is not intended to represent a specific view, ideal standard, or diagnostic-quality image. It is provided solely to demonstrate the anatomy available in the simulator. Please note that exposure responses in the X-ray Simulator will vary based on user-controlled functionality – such as tube positioning, technical factors, and patient alignment. This tool is designed as an interactive simulator and does not guarantee ideal or good imaging outcomes unless operated correctly.

## Radiographic Tube Functionality



The radiographic tube has a full range of motion, including vertical (up/down), horizontal (side-to-side), tilt, and rotation. The cassette can also be rotated, and collimation size is adjustable.

## Detector Methods



The detector is setup for use with the table bucky.

## Simulated Exposures



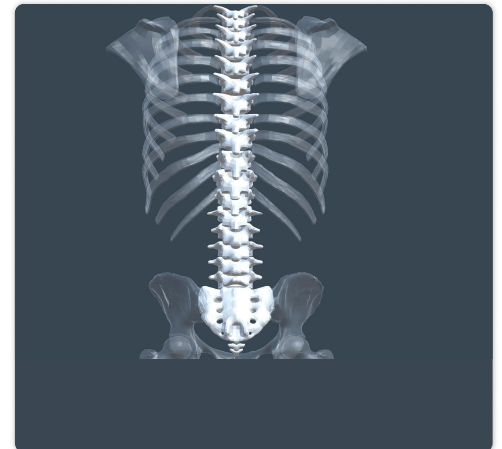
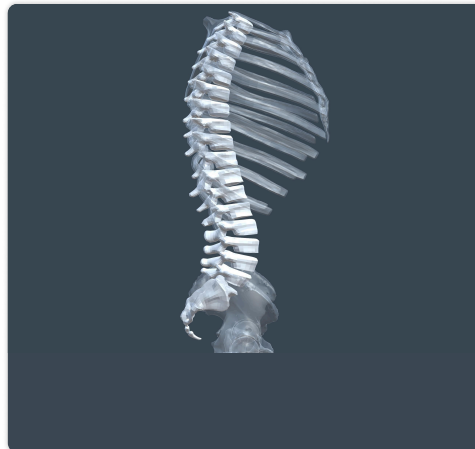
The simulation is confirmed to support at least the following cervical spine projections: **AP**, and **Lateral**. Additional views may be possible, check the patient's range of motion and the available bones.

## Included Anatomy



- Thoracic vertebrae, scapulae
- Ribs 1–10 (bilateral), sternum
- Lumbar spine
- Pelvic

The range of possible exposures in the simulation is determined by the available 3D-bone anatomy. Below, we provide a visualization of the bone anatomy, specifically for the healthy variation, which is accessible for exposure within the simulation.



## Joint Mobility in Simulation



- Patient: Lateral rotation onto right side for decubitus positioning
- Patient: Adjustable craniocaudally and mediolaterally

## Bone variations



- A healthy bone version

## Known Limitations



We acknowledge that the T-spine simulation is limited to recumbent patient positioning only. This constraint restricts the ability to replicate standard radiographic projections that require prone or erect positioning. Additionally, the vertebrae are represented with a low presence of trabecular bone structures, which may limit the realism of radiographic appearance, particularly in evaluations of bone quality and internal architecture.