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 does not lock or detent to the wall bucky, and the plate usage resembles 'free plating' rather than a bucky tray

Simulated Exposures



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

Joint Mobility in Simulation



• Patient: Axial rotation, adjustable anteroposteriorly and mediolaterally

Bone variations

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.







• A healthy bone version

• A pathological version featuring a proximal humerus fracture



Known Limitations

We acknowledge that, as of software version v1.8.0, the radiographic tube does not detent to the wall bucky and the plate usage resembles 'free plating' not bucky tray. Additionally, the patient cannot perform internal or external rotations of the shoulder joint to accurately simulate standard radiographic views.

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.



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

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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 elbow. Additional views may be possible, check the patient's range of motion and the available bones.

Included Anatomy



- Radius
- Ulna

Joint Mobility in Simulation

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

Bone variations

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.







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, as of software version v1.8.0, 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

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

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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.





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

As of software version v1.8.0, the wrist does not properly interact with the pillow during pillow-assisted exposures, which may affect positioning accuracy.

This issue is known, and improvements are planned for future updates.

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 detector is setup for use as "free plating".

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



- L3, L4, L5
- Right and left femur

Joint Mobility in Simulation

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

Bone variations

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.





1. A healthy bone version

- 2. A pathological version featuring a collum femoris fracture
- 3. A pathological version featuring an ossis pubis fracture



Known Limitations

We acknowledge that, as of software version v1.8.0, the radiographic tube does not lock or detent to the radiographic table, and the table does not support a table bucky. We are aware that this is standard practice for hip and pelvis imaging and are working to address these limitations in future updates. Additionally, we recognize that the hip joint needs to allow greater flexion in the cranial direction to better support axial projections.

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"

 \bigcirc 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



- Fibula
- Femur
- Patela

Joint Mobility in Simulation



• Patient: Adjustable craniocaudally and mediolaterally

Bone variations

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.







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

Known Limitations

We acknowledge that, as of software version v1.8.0, the patient remains in a supine position and cannot be positioned standing. For lateral knee imaging, only a crosstable 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

Joint Mobility in Simulation

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

Bone variations

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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.





1. A healthy bone version

- 2. A pathological version featuring a lateralm malleolus fracture
- 3. A pathological version featuring a medial malleolus fracture

Known Limitations

We acknowledge that, as of software version v1.8.0, 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.



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

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

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.

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

Known Limitations

No known limitations for this simulation as of version v1.8.0

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.

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".

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

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, as of software version v1.8.0, 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.

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".

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

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, as of software version v1.8.0, 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.

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, with no drawer

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

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, as of software version v1.8.0, 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.

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".

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

Joint Mobility in Simulation

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

Bone variations

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, as of software version v1.8.0, 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.

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".

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

Joint Mobility in Simulation

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

Bone variations

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, as of software version v1.8.0, 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.