Imaging Protocol – CT Trauma Body Post Contrast / Siemen's and GE

**Protocols designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

CONTINUED

Scan Parameters:

Labs obtained by the Emergency Department
Intravenous contrast at the discretion of the Radiologist

Patient Positioning:

- Both arms raised above the head for optimal image quality.
- If only one arm can be raised, secure the opposing arm along the patient's side
- If both arms are unable to be raised, secure the arms along the patient's side

Post contrast- To include above apices through symphysis pubis

Delay- (*Delay time is dependent on the urgency induced by the patient condition)*
To include above diaphragm through bladder

CTDI: ≤ 25 mGy
Detector Rows: 128
Detector Configuration: 0.625
Rotation time: 0.35
Pitch: 0.992 mA: 550 kV: 120
Auto mA: on
Smart mA: on
Noise Index: 15.4

Reconstruction Parameters:

Post Contrast

Recon 1: Axial Soft Tissue through the entire scan range
2.5 mm slice thickness
2.5 mm slice increment
Algorithm: Standard
W/L: 400/40
ASIR: 50

Recon 2: Axial Lung through the entire scan range
2.5 mm slice thickness
2.5 mm slice increment
Algorithm: Lung
W/L: 1600/-600
ASIR: none

Recon 3: (reformat set) Axial Bone Recon of the Chest used for 3D Ribs:
0.625 mm slice thickness
0.3125 mm slice increment
Algorithm: Bone
W/L: 400/40

*** 3D Ribs** – use recon 3 to create a 3D Volume Rendered rotation and 3D Bone Window rotation of the ribs. Each series will have approx. 24 images in a Left to Right rotation.

Recon 4: Coronal Body
3.0 mm slice thickness
3.0 mm slice increment
Algorithm: General
W/L: 400/40
ASIR: None

Include the following reconstructions when a Thoracic and Lumbar Spine are ordered

Axial Soft Tissue Thoracic Spine
1.25 mm slice thickness
1.25 mm slice increment
DFOV 20 cm
Algorithm: Standard
W/L 400/40
ASIR: 50%

Axial Bone Thoracic Spine
1.25 mm slice thickness
1.25 mm slice increment
DFOV 20 cm
Algorithm: Bone Plus
W/L: 3000/500
ASIR: 50%

Thoracic Spine Sagittal Coronal MPR
2.0 mm slice thickness
1.5 mm slice increment
Algorithm: Bone
W/L: 3000/500

Thoracic Spine Bone MPR
2.0 mm slice thickness
1.5 mm slice increment
Algorithm: Bone
W/L: 3000/500

Axial Soft Tissue Lumbar Spine
1.25 mm slice thickness
1.25 mm slice increment
DFOV 15 cm
Algorithm: Standard
W/L: 400/40
ASIR: 50%

Axial Bone Lumbar Spine
1.25 mm slice thickness
1.25 mm slice increment
DFOV 15 cm
Algorithm: Bone Plus
W/L: 3000/500
ASIR: 50%

Lumbar Spine Sagittal MPR
2.0 mm slice thickness
1.5 mm slice increment
Algorithm: Bone
W/L: 3000/500

Lumbar Spine Coronal MPR
2.0 mm slice thickness
1.5 mm slice increment
Algorithm: Bone
W/L: 3000/500

Scan Parameters:

Labs obtained by the Emergency Department
Intravenous contrast at the discretion of the Radiologist

Patient Positioning:

- Both arms raised above the head for optimal image quality.
- If only one arm can be raised, secure the opposing arm along the patient's side
- If both arms are unable to be raised, secure the arms along the patient's side

Post contrast- To include above apices through symphysis pubis

Delay- (*Delay time is dependent on the urgency induced by the patient condition)*
To include above diaphragm through bladder

CTDI: ≤ 25 mGy
Detector Rows: 64
Detector Configuration: 0.625
Rotation time: 0.5
Pitch: 0.984:1
mA: 440
kV: 120
Auto mA: on
Smart mA: on
Noise Index: 15

Reconstruction Parameters:

Post Contrast

Recon 1: Axial Soft Tissue through the entire scan range
5 mm slice thickness
5 mm slice increment
Algorithm: Standard
Window: Mediastinum
ASIR: 20

Recon 2: Axial Lung through the entire scan range
5 mm slice thickness
5 mm slice increment
Algorithm: Lung
Window: Lung
ASIR: none

Recon 3: (reformat set)
Axial Bone Recon of the Chest used for 3D Ribs:
1.25 mm slice thickness
0.625 mm slice increment
Algorithm: Bone
Window: Bone

*** 3D Ribs** – use recon 3 to create a 3D Volume Rendered rotation and 3D Bone Window rotation of the ribs. Each series will have approx. 24 images in a Left to Right rotation.

Recon 4: Coronal Body
2.5 mm slice ASIR: none
thickness
2.5 mm slice increment
Algorithm: Standard
Window: Mediastinum
ASIR: 20

Recon 5: Axial Delay
5 mm slice thickness
5 mm slice increment
Algorithm: Standard
Window: Mediastinum
ASIR: 20

Sternum Recon*
Sagittal MPR of the Chest
2.5 mm slice thickness
2.5 mm slice increment
Algorithm: Bone
Window: Bone
ASIR: none

Axial Spine Recon*
Without Order
Sagittal MPR entire spine
2.5 mm slice thickness
2.5 mm slice increment
Algorithm: Bone
Window: Bone
ASIR: none

Include the following reconstructions when a Thoracic and Lumbar Spine are ordered
Focused DFOV
Axial Soft Tissue Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Algorithm: Standard
Window: Mediastinum
ASIR: none
Axial Bone Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Algorithm: Bone
Window: Bone
ASIR: none
Thoracic Spine Sagittal Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Algorithm: Bone
Window: Bone
Thoracic Spine Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Algorithm: Bone
Window: Bone
Axial Soft Tissue Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Algorithm: Standard
Window: Mediastinum
ASIR: none
Axial Bone Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Algorithm: Bone
Window: Bone
ASIR: none
Lumbar Spine Sagittal MPR
1.25 mm slice thickness
1.25 mm slice increment
Algorithm: Bone
Window: Bone
Lumbar Spine Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Algorithm: Bone
Window: Bone

Scan Parameters:

Labs obtained by the Emergency Department
Intravenous contrast at the discretion of the Radiologist

Patient Positioning:

- Both arms raised above the head for optimal image quality.
- If only one arm can be raised, secure the opposing arm along the patient's side
- If both arms are unable to be raised, secure the arms along the patient's side

Post contrast- To include above apices through symphysis pubis

Delay- (*Delay time is dependent on the urgency induced by the patient condition)*
To include above diaphragm through bladder

CTDI: ≤ 25 mGy
Quality Reference mAs: 210
Pitch: 0.6
CARE Dose4D: ON
Detector Rows: 128
Detector Configuration 0.6
CARE kV: 120
Rotation time: 0.5

Reconstruction Parameters:

Post Contrast

Recon 1: Axial Soft Tissue through the entire scan range
5 mm slice thickness
5 mm slice increment
Kernel: Br38
Window: Mediastinum
SAFIRE: 2

Recon 2: Axial Lung through the entire scan range
5 mm slice thickness
5 mm slice increment
Kernel: Br38
Window: Lung
SAFIRE: 0

Recon 3: (reformat set)
Axial Bone Recon of the Chest used for 3D Ribs:
1.0 mm slice thickness
0.5 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

*** 3D Ribs** – use recon 3 to create a 3D Volume Rendered rotation and 3D Bone Window rotation of the ribs. Each series will have approx. 24 images in a Left to Right rotation.

Recon 4: Coronal Body
5.0 mm slice thickness
5.0 mm slice increment
Kernel: I41f medium
Window: Abdomen
SAFIRE: 2

Recon 5: Axial Delay
5 mm slice thickness
5 mm slice increment
Kernel: I41f medium
Window: Abdomen
SAFIRE: 2

Sternum Recon*
Sagittal MPR of the Chest
2.0 mm slice thickness
2.0 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Axial Spine Recon*
Without Order
Sagittal MPR entire Spine
2.0 mm slice thickness
2.0 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Include the following reconstructions when a Thoracic and Lumbar Spine are ordered

Focused DFOV

Axial Soft Tissue Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel I41f medium
Window: Spine
SAFIRE: 2

Axial Bone Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Thoracic Spine Sagittal Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Thoracic Spine Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Axial Soft Tissue Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: I41f medium
Window: Spine
SAFIRE: 2

Axial Bone Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Lumbar Spine Sagittal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Scan Parameters:

Labs obtained by the Emergency Department
Intravenous contrast at the discretion of the Radiologist

Patient Positioning:

- Both arms raised above the head for optimal image quality.
- If only one arm can be raised, secure the opposing arm along the patient's side
- If both arms are unable to be raised, secure the arms along the patient's side

Post contrast- To include above apices through symphysis pubis

Delay- (*Delay time is dependent on the urgency induced by the patient condition)*
To include above diaphragm through bladder

CTDI: ≤ 25 mGy
Quality Reference mAs: 200
Pitch: 1.0
CARE Dose4D: ON
Detector Rows: 64
Detector Configuration 0.6
CARE kV: 120 (Optimize slider 7)
Rotation time: 0.5

Reconstruction Parameters:

Post Contrast

Recon 1: Axial Soft Tissue through the entire scan range
5 mm slice thickness
5 mm slice increment
Kernel: I41f medium
Window: Abdomen
SAFIRE: 2

Recon 2: Axial Lung through the entire scan range
5 mm slice thickness
5 mm slice increment
Kernel: I71f very sharp ASA
Window: Lung
SAFIRE: 0

Recon 3: (reformat set)
Axial Bone Recon of the Chest used for 3D Ribs:
1.0 mm slice thickness
0.5 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

*** 3D Ribs** – use recon 3 to create a 3D Volume Rendered rotation and 3D Bone Window rotation of the ribs. Each series will have approx. 24 images in a Left to Right rotation.

Recon 4: Coronal Body
2.0 mm slice thickness
2.0 mm slice increment
Kernel: I41f medium
Window: Abdomen
SAFIRE: 2

Recon 5: Axial Delay
5 mm slice thickness
5 mm slice increment
Kernel: I41f medium
Window: Abdomen
SAFIRE: 2

Sternum Recon*
Sagittal MPR of the Chest
2.0 mm slice thickness
2.0 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Axial Spine Recon*
Without Order
Sagittal MPR entire Spine
2.0 mm slice thickness
2.0 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Include the following reconstructions when a Thoracic and Lumbar Spine are ordered

Focused DFOV

Axial Soft Tissue Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel I41f medium
Window: Spine
SAFIRE: 2

Axial Bone Thoracic Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Thoracic Spine Sagittal Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Thoracic Spine Coronal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Axial Soft Tissue Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: I41f medium
Window: Spine
SAFIRE: 2

Axial Bone Lumbar Spine
2.5 mm slice thickness
2.5 mm slice increment
DFOV 15 cm
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0

Lumbar Spine Sagittal MPR
1.25 mm slice thickness
1.25 mm slice increment
Kernel: B70s Sharp
Window: Osteo
SAFIRE: 0