

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*

PAGE(S)	DETAILS / MACHINE	Version	Origination Date	Initial approval Physicist	Initial Approval Radiologists
1	TABLE OF CONTENTS	X	X	X	X
2 - 3	GE REVOLUTION 256	V1.0	2021 0901	2021 0902	2021 0927
4 - 5	GE OPTIMA 660	V3.3	2021 0826	2021 0902	2021 0927
6 – 7	SIEMENS 128	V1.0	2021 0901	2021 0902	2021 0927
8 - 9	SIEMENS DEFINITION AS 64	V3.3	2021 0826	2021 0902	2021 0927

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

<p>Reconstruction Parameters:</p> <p>Post Contrast</p> <p>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</p> <p>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</p> <p>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</p> <p>* 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.</p> <p>Recon 4: Coronal Body 3.0 mm slice thickness 3.0 mm slice increment Algorithm: General W/L: 400/40 ASIR: None</p>	<p><u>Include the following reconstructions when a Thoracic and Lumbar Spine are ordered</u></p> <p>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%</p> <p>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%</p> <p>Thoracic Spine Sagittal Coronal MPR 2.0 mm slice thickness 1.5 mm slice increment Algorithm: Bone W/L: 3000/500</p> <p>Thoracic Spine Bone MPR 2.0 mm slice thickness 1.5 mm slice increment Algorithm: Bone W/L: 3000/500</p> <p>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%</p> <p>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%</p> <p>Lumbar Spine Sagittal MPR 2.0 mm slice thickness 1.5 mm slice increment Algorithm: Bone W/L: 3000/500</p> <p>Lumbar Spine Coronal MPR 2.0 mm slice thickness 1.5 mm slice increment Algorithm: Bone W/L: 3000/500</p>
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- 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: \leq 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

<p>Reconstruction Parameters:</p> <p>Post Contrast</p> <p>Recon 1: Axial Soft Tissue through the entire scan range 5 mm slice thickness 5 mm slice increment Algorithm: Standard Window: Mediastinum ASIR: 20</p> <p>Recon 2: Axial Lung through the entire scan range 5 mm slice thickness 5 mm slice increment Algorithm: Lung Window: Lung ASIR: none</p> <p>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</p> <p>* 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.</p> <p>Recon 4: Coronal Body 2.5 mm slice ASIR: none thickness 2.5 mm slice increment Algorithm: Standard Window: Mediastinum ASIR: 20</p> <p>Recon 5: Axial Delay 5 mm slice thickness 5 mm slice increment Algorithm: Standard Window: Mediastinum ASIR: 20</p> <p>Sternum Recon* Sagittal MPR of the Chest 2.5 mm slice thickness 2.5 mm slice increment Algorithm: Bone Window: Bone ASIR: none</p> <p>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</p>	<p><i>Include the following reconstructions when a Thoracic and Lumbar Spine are ordered</i></p> <p>Focused DFOV</p> <p>Axial Soft Tissue Thoracic Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Algorithm: Standard Window: Mediastinum ASIR: none</p> <p>Axial Bone Thoracic Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Algorithm: Bone Window: Bone ASIR: none</p> <p>Thoracic Spine Sagittal Coronal MPR 1.25 mm slice thickness 1.25 mm slice increment Algorithm: Bone Window: Bone</p> <p>Thoracic Spine Coronal MPR 1.25 mm slice thickness 1.25 mm slice increment Algorithm: Bone Window: Bone</p> <p>Axial Soft Tissue Lumbar Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Algorithm: Standard Window: Mediastinum ASIR: none</p> <p>Axial Bone Lumbar Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Algorithm: Bone Window: Bone ASIR: none</p> <p>Lumbar Spine Sagittal MPR 1.25 mm slice thickness 1.25 mm slice increment Algorithm: Bone Window: Bone</p> <p>Lumbar Spine Coronal MPR 1.25 mm slice thickness 1.25 mm slice increment Algorithm: Bone Window: Bone</p>
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Intravenous contrast at the discretion of the Radiologist

Patient Positioning:

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- 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: \leq 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

<p>Reconstruction Parameters:</p> <p>Post Contrast</p> <p>Recon 1: Axial Soft Tissue through the entire scan range 5 mm slice thickness 5 mm slice increment Kernel: Br38 Window: Mediastinum SAFIRE: 2</p> <p>Recon 2: Axial Lung through the entire scan range 5 mm slice thickness 5 mm slice increment Kernel: Br38 Window: Lung SAFIRE: 0</p> <p>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</p> <p>* 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.</p> <p>Recon 4: Coronal Body 5.0 mm slice thickness 5.0 mm slice increment Kernel: I41f medium Window: Abdomen SAFIRE: 2</p> <p>Recon 5: Axial Delay 5 mm slice thickness 5 mm slice increment Kernel: I41f medium Window: Abdomen SAFIRE: 2</p> <p>Sternum Recon* Sagittal MPR of the Chest 2.0 mm slice thickness 2.0 mm slice increment Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p> <p>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</p>	<p><i>Include the following reconstructions when a Thoracic and Lumbar Spine are ordered</i></p> <p>Focused DFOV</p> <p>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</p> <p>Axial Bone Thoracic Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p> <p>Thoracic Spine Sagittal Coronal MPR 1.25 mm slice thickness 1.25 mm slice increment Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p> <p>Thoracic Spine Coronal MPR 1.25 mm slice thickness 1.25 mm slice increment Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p> <p>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</p> <p>Axial Bone Lumbar Spine 2.5 mm slice thickness 2.5 mm slice increment DFOV 15 cm Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p> <p>Lumbar Spine Sagittal MPR 1.25 mm slice thickness 1.25 mm slice increment Kernel: B70s Sharp Window: Osteo SAFIRE: 0</p>
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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: \leq 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