

# TRAUMA HEAD, FACE, & C-SPINE

|                                                                                                                                                            |                                                                |             |             |           |        |
|------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------|-------------|-------------|-----------|--------|
| Protocol to Use                                                                                                                                            | 1.13 Trauma Head / Face / Cspine                               |             |             |           |        |
| HDI/VDI                                                                                                                                                    |                                                                |             |             |           |        |
| Patient position:                                                                                                                                          | Supine Head First                                              |             |             |           |        |
| Exam specific instructions:                                                                                                                                | Include MAR if patient has post surgical external hardware     |             |             |           |        |
| Indication:                                                                                                                                                | Headache, syncope, trauma, seizure, stroke, tumor, memory loss |             |             |           |        |
| Notes:                                                                                                                                                     |                                                                |             |             |           |        |
| CONTRAST:                                                                                                                                                  | Oral:                                                          | None        |             |           |        |
|                                                                                                                                                            | IV:                                                            | None        |             |           |        |
|  SERIES 1:<br>Lateral Scout                                                | GE<br>120kV/10mA                                               |             |             |           |        |
| GE                                                                                                                                                         | GE 64 2nd FL                                                   | GE 64 ER    | GE 64 OLY   | GE CTS ER | PET CT |
|                                                                                                                                                            | OM S150/I450                                                   | OM S150/I75 | OM S180/I50 |           |        |
|  SERIES 2: Scan caudocranial from base of skull through vertex of the head |                                                                |             |             |           |        |
| GE                                                                                                                                                         | GE 64 2nd FL                                                   | GE 64 ER    | GE 64 OLY   | GE CTS ER | PET CT |
| Scan Type                                                                                                                                                  | Helical                                                        | Helical     | Helical     |           |        |
| Detector Config                                                                                                                                            | 20mm                                                           | 20mm        | 20mm        |           |        |
| Rotation                                                                                                                                                   | 0.5                                                            | 0.5         | 0.5         |           |        |
| Pitch/Speed                                                                                                                                                | 0.5/10.62                                                      | .531/10.62  | 0.531/10.62 |           |        |
| SFOV                                                                                                                                                       | Head                                                           | Head        | Head        |           |        |
| kV                                                                                                                                                         | 120                                                            | 120         | 120         |           |        |
| mA Range                                                                                                                                                   | 335                                                            | 255         | 245         |           |        |
| NI                                                                                                                                                         | N/A                                                            | N/A         | N/A         |           |        |
| Prep Group                                                                                                                                                 | N/A                                                            | N/A         | N/A         |           |        |
| DFOV (cm)                                                                                                                                                  | 24                                                             | 24          | 24          |           |        |
| % Dose Reduction                                                                                                                                           | 30                                                             | 30          | 40          |           |        |
| ASIR %                                                                                                                                                     | 30                                                             | 30          | 40          |           |        |
| CTDI (mGy)                                                                                                                                                 | 55.48                                                          | 43.2        | 44.26       |           |        |
| XR29 Dose Notification (mGy)                                                                                                                               | 75                                                             | 75          | 75          |           |        |

|                   | <b>RECON 1</b> | <b>RECON 2</b> | <b>RECON 3</b> | <b>REFORMAT 1</b> | <b>REFORMAT 2</b>                   |
|-------------------|----------------|----------------|----------------|-------------------|-------------------------------------|
| Series Descripton | Axial ST Head  | Head Bone      | Head ST Thin   | Angled Axial      | Coronal ST                          |
| Type              | Axial          | Axial          | Axial          | Axial             | Coronal                             |
| Start             | Skull Base     | Skull Base     | Skull Base     | Skull Base        | Frontal Sinus                       |
| End               | Skull Vertex   | Skull Vertex   | Skull Vertex   | Skull Vertex      | Posterior Skull                     |
| Angle             | 0              | 0              | 0              | Angled to OM      | Perpendicular to Planum Sphenoidale |
| Image Order       | Caudocranial   | Caudocranial   | Caudocranial   | Caudocranial      | Anterior to Posterior               |
| Filter            | Standard       | Bone           | Standard       | Standard          | Standard                            |
| Windowing         | C40/W80        | C600/W3400     | C40/W80        | C40/W80           | C40/W80                             |
| Render Mode       | Average        | Average        | Average        | Average           | Average                             |
| Slice (mm)        | 2.5            | 1.25           | 0.625          | 5                 | 2.5                                 |
| Increment (mm)    | 2.5            | 1.25           | 0.625          | 5                 | 2.5                                 |
| FOV in mm         | 24             | 24             | 24             | 24                | 24                                  |

|                   | <b>REFORMAT 1</b> | <b>RECON 9-If Needed</b> | <b>RECON 10-If Needed</b> |
|-------------------|-------------------|--------------------------|---------------------------|
| Series Descripton | Sagittal Head     | Head MAR ST              | Head MAR Bone             |

|                |              |              |              |
|----------------|--------------|--------------|--------------|
| Type           | Axial        | Axial        | Axial        |
| Start          | Left         | Skull Base   | Skull Base   |
| End            | Right        | Skull Vertex | Skull Vertex |
| Angle          | 0            | 0            | 0            |
| Image Order    | Caudocranial | Caudocranial | Caudocranial |
| Filter         | Standard     | Standard     | Bone         |
| Windowing      | C40/W80      | C40/W400     | C350/W2000   |
| Render Mode    | Average      | Average      | Average      |
| Slice (mm)     | 2.5          | 2.5          | 1.25         |
| Increment (mm) | 2.5          | 2.5          | 1.25         |
| FOV in mm      | 24           | 24           | 24           |

|  <b>SERIES 3: Scan craniocaudal from above frontal sinus to either hard palate or below mandible</b> |              |             |             |           |        |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|-------------|-----------|--------|
| GE                                                                                                                                                                                  | GE 64 2nd FL | GE 64       | GE 64 OLY   | GE CTS ER | PET CT |
| Scan Type                                                                                                                                                                           | Helical      | Helical     | Helical     |           |        |
| Detector Config                                                                                                                                                                     | 20mm         | 20mm        | 20mm        |           |        |
| Rotation                                                                                                                                                                            | 0.5          | 0.4         | 0.4         |           |        |
| Pitch/Speed                                                                                                                                                                         | 0.5/10.62    | 0.531/10.62 | 0.531/10.62 |           |        |
| SFOV                                                                                                                                                                                | Head         | Head        | Head        |           |        |
| kV                                                                                                                                                                                  | 120          | 120         | 120         |           |        |
| mA Range                                                                                                                                                                            | 120          | 85          | 70          |           |        |
| NI                                                                                                                                                                                  | N/A          | N/A         | N/A         |           |        |
| Prep Group                                                                                                                                                                          | N/A          | N/A         | N/A         |           |        |
| DFOV (cm)                                                                                                                                                                           | 18           | 18          | 18          |           |        |
| % Dose Reduction                                                                                                                                                                    | 30           | 50          | 50          |           |        |
| ASIR %                                                                                                                                                                              | 40           | 50          | 50          |           |        |
| CTDI (mGy)                                                                                                                                                                          | 11.19        | 11.46       | 10.1        |           |        |
| XR29 Dose Notification (mGy)                                                                                                                                                        | 50           | 50          | 50          |           |        |

|                   | RECON 1             | RECON 2             | RECON 3             | REFORMAT 1    | REFORMAT 2                   |
|-------------------|---------------------|---------------------|---------------------|---------------|------------------------------|
| Series Descripton | Axial Face ST       | Axial Face Bone     | Thin Face Bone      | Sagittal Bone | Coronal Bone                 |
| Type              | Axial               | Axial               | Axial               | Sagittal      | Coronal                      |
| Start             | Above Frontal Sinus | Above Frontal Sinus | Above Frontal Sinus | Left          | Tip of Nose                  |
| End               | Through mandible    | Through mandible    | Through Mandible    | Right         | Though Mastoid Air Cells     |
| Angle             | 0                   | 0                   | 0                   | 90            | Perpendicular to Hard Palate |
| Image Order       | Craniocaudal        | Craniocaudal        | Craniocaudal        | Left to Right | Anterior to Posterior        |
| Filter            | Standard            | Bone Plus           | Bone Plus           | Bone Plus     | Bone Plus                    |
| Windowing         | C40/W350            | C300/W2000          | C300/W2500          | C300/W2000    | C300/W2000                   |
| Render Mode       | Average             | Average             | Average             | Average       | Average                      |
| Slice (mm)        | 2.5                 | 1.25                | 0.625               | 1.25          | 1.25                         |
| Increment (mm)    | 2.5                 | 1.25                | 0.625               | 1.25          | 1.25                         |
| FOV in mm         | 18                  | 18                  | 18                  | 18            | 18                           |

|                   | RECON 3      | REFORMAT 3 | RECON 9-If Needed | RECON 10-If Needed |
|-------------------|--------------|------------|-------------------|--------------------|
| Series Descripton | Thin Face ST | Coronal ST | MAR Face Bone     | MAR Face ST        |

|                |                     |                              |                     |                     |
|----------------|---------------------|------------------------------|---------------------|---------------------|
| Type           | Axial               | Coronal                      | Axial               | Axial               |
| Start          | Above Frontal Sinus | Tip of Nose                  | Above Frontal Sinus | Above Frontal Sinus |
| End            | Through Mandible    | Though Mastoid Air Cells     | Through mandible    | Through mandible    |
| Angle          | 0                   | Perpendicular to Hard Palate | 0                   | 0                   |
| Image Order    | Craniocaudal        | Anterior to Posterior        | Craniocaudal        | Craniocaudal        |
| Filter         | Standard            | Standard                     | Bone                | Standard            |
| Windowing      | C40/W350            | C40/W350                     | C350/W2000          | C40/W350            |
| Render Mode    | Average             | Average                      | Average             | Average             |
| Slice (mm)     | 0.625               | 2.5                          | 2.5                 | 2.5                 |
| Increment (mm) | 0.625               | 2.5                          | 2.5                 | 2.5                 |
| FOV in mm      | 18                  | 18                           | 18                  | 18                  |

|  <b>SERIES 4: Scan craniocaudal from above skull base to mid T2</b> |              |             |           |           |        |
|-----------------------------------------------------------------------------------------------------------------------------------------------------|--------------|-------------|-----------|-----------|--------|
| GE                                                                                                                                                  | GE 64 2nd FL | GE 64 ER    | GE 64 OLY | GE CTS ER | PET CT |
| Scan Type                                                                                                                                           | Helical      | Helical     |           |           |        |
| Detector Config                                                                                                                                     | 40mm         | 40mm        |           |           |        |
| Rotation                                                                                                                                            | 0.5          | 0.5         |           |           |        |
| Pitch/Speed                                                                                                                                         | .984/39.37   | 0.984/39.37 |           |           |        |
| SFOV                                                                                                                                                | Small Body   | Small Body  |           |           |        |
| kV                                                                                                                                                  | 120          | 120         |           |           |        |
| mA Range                                                                                                                                            | 50-560       | 50-560      |           |           |        |
| NI                                                                                                                                                  | 12.22        | 17.28       |           |           |        |
| Prep Group                                                                                                                                          | N/A          | N/A         |           |           |        |
| DFOV (cm)                                                                                                                                           | 20           | 20          |           |           |        |
| % Dose Reduction                                                                                                                                    | 40           | 40          |           |           |        |
| ASIR %                                                                                                                                              | 40           | 40          |           |           |        |
| CTDI (mGy)                                                                                                                                          | 12.58        | 11.61       |           |           |        |
| XR29 Dose Notification (mGy)                                                                                                                        | 30           | 30          |           |           |        |

|                   | RECON 1          | RECON 2          | RECON 3      | RECON 4          | REFORMAT 1   |
|-------------------|------------------|------------------|--------------|------------------|--------------|
| Series Descripton | C Spine ST       | C Spine Bone     | C Spine Lung | C Spine ST Thin  | Sagittal ST  |
| Type              | Axial            | Axial            | Axial        | Axial            | Sagittal     |
| Start             | Above Skull Base | Above Skull Base | Apicies      | Above Skull Base | Left         |
| End               | Mid T2           | Mid T2           | Mid T2       | Mid T2           | Right        |
| Image Order       | Craniocaudal     | Craniocaudal     | Craniocaudal | Craniocaudal     | Craniocaudal |
| Filter            | Standard         | Bone Plus        | Lung         | Standard         | Standard     |
| Windowing         | C40/W350         | C350/W2000       | C-500/W2000  | C40/W350         | C40/W350     |
| Render Mode       | Average          | Average          | Average      | Average          | Average      |
| Slice (mm)        | 2.5              | 1.25             | 2.5          | 0.625            | 2.5          |
| Increment (mm)    | 2.5              | 1.25             | 2.5          | 0.625            | 2.5          |
| FOV (mm)          | 20               | 20               | 30           | 20               | 20           |

|                   | RECON 5           | REFORMAT 2    | REFORMAT 3   | RECON 9          | RECON 10         |
|-------------------|-------------------|---------------|--------------|------------------|------------------|
| Series Descripton | C Spine Bone Thin | Sagittal Bone | Coronal Bone | C Spine MAR ST   | C Spine MAR Bone |
| Type              | Axial             | Sagittal      | Coronal      | Axial            | Axial            |
| Start             | Above Skull Base  | Left          | Anterior     | Above Skull Base | Above Skull Base |

|                |              |              |              |              |              |
|----------------|--------------|--------------|--------------|--------------|--------------|
| End            | Mid T2       | Right        | Posterior    | Mid T2       | Mid T2       |
| Image Order    | Craniocaudal | Craniocaudal | Craniocaudal | Craniocaudal | Craniocaudal |
| Filter         | Bone Plus    | Bone Plus    | Bone Plus    | Standard     | Bone         |
| Windowing      | C350/W2000   | C350/W2000   | C350/W2000   | C40/W350     | C350/W2000   |
| Render Mode    | Average      | Average      | Average      | Average      | Average      |
| Slice (mm)     | 0.625        | 1.25         | 1.25         | 2.5          | 1.25         |
| Increment (mm) | 0.625        | 1.25         | 1.25         | 2.5          | 1.25         |
| FOV (mm)       | 20           | 20           | 20           | 20           | 20           |

|                                     |
|-------------------------------------|
| Send to PACs                        |
|                                     |
| Approving Radiologist / Review Date |