**Hi RES Extremity - (04/18/2011)**

CTDI: ~13 mGy per acquisition

Used for evaluation of:
- Ankle
- Elbow
- Hand
- Wrist
- Foot / Calcaneous
- Toes
- Fingers

**PT Preparation:** Place anatomy of interest in true anatomical position (Please note reason for protocol changes)

**Billing:**
1. CT Upper/Lower Extremity of concern without contrast, with contrast, or without and with contrast
2. IV Contrast if used

**Setup:**
1. AP and lateral scouts from above/below through above/below the anatomy of interest

**DFOV:**
1. Focused DFOV ~10 to 15cm; appropriate for anatomy of interest.

**Scan Parameters:**
1. IV Contrast:
   a. at the discretion of the Radiologist
   b. 80-150 ml of 300 mg/dl non-ionic contrast @ 2 ml/sec
2. 60 second delay
3. Scan from above above/below through above/below the anatomy of interest

**Reconstructions:**
1. Recon 1 is an axial bone data set
2. Recon 2 is for soft tissue evaluation
3. Recon 3 is for bone MPR’s
   - MPR’s should be reconstructed at 1 mm x 1 mm
4. IF 3D’s are requested an additional reconstruction with a thin increment with a 50% overlap and a smooth kernel/algorithim will be needed.
   (i.e. Recon 3 with a smooth kernel/algorithim)

**PACS Series:** Topogram, Axial Bone, Axial ST, Coronal, Sagittal, 3D (VRT) is needed

*Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*
**Hi-Res Extremity**

<table>
<thead>
<tr>
<th>Scanner</th>
<th>Phillips 6</th>
<th>Emotion 16</th>
<th>Sensation 16</th>
<th>Definition 20</th>
<th>Sensation 64</th>
<th>GE 4</th>
<th>GE 16</th>
<th>GE 64</th>
</tr>
</thead>
<tbody>
<tr>
<td>Scan Type</td>
<td>Spiral</td>
<td>Spiral</td>
<td>Spiral</td>
<td>Spiral</td>
<td>Spiral</td>
<td>Spiral</td>
<td>Spiral</td>
<td></td>
</tr>
<tr>
<td>Rotation Time (sec)</td>
<td>0.75</td>
<td>1</td>
<td>1.0</td>
<td>0.8</td>
<td>0.8</td>
<td>0.6</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Detector Configuration</td>
<td>6 x 0.75</td>
<td>6 x 0.75</td>
<td>20 x 0.6</td>
<td>20 x 0.6</td>
<td>4 x 1.25</td>
<td>16 x 0.625</td>
<td>32 x 0.625</td>
<td></td>
</tr>
<tr>
<td>Pitch</td>
<td>0.75</td>
<td>0.6</td>
<td>0.5</td>
<td>0.6</td>
<td>1.5</td>
<td>.938</td>
<td>.969</td>
<td></td>
</tr>
<tr>
<td>Speed(mm/rot)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>15</td>
<td>9.37</td>
<td>19.37</td>
<td></td>
</tr>
<tr>
<td>Scan FOV</td>
<td>Small</td>
<td>Small</td>
<td>Small</td>
<td>Small</td>
<td>Small</td>
<td>Small</td>
<td>Small</td>
<td></td>
</tr>
<tr>
<td>Auto mA range</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>80-300</td>
<td>80-300</td>
<td>80-300</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Noise Index</td>
<td>n/a</td>
<td>n/a</td>
<td>n/a</td>
<td>15</td>
<td>15</td>
<td>15</td>
<td></td>
<td></td>
</tr>
<tr>
<td>mAs</td>
<td>200</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>eff.mAs (care dose)</td>
<td>150</td>
<td>175</td>
<td>175</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>kVp</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td>120</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Manual mA</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

**Reconstruction Parameters**

**Recon 1 for bone**

<table>
<thead>
<tr>
<th>DFOV</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm/ Kernel</td>
<td>D</td>
<td>B70</td>
<td>B70</td>
<td>B70</td>
<td>Bone</td>
<td>Bone</td>
</tr>
<tr>
<td>WW/WL</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slice thickness (mm)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Slice Increment (mm)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.25</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**Recon 2 for soft tissue**

<table>
<thead>
<tr>
<th>DFOV</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm/ Kernel</td>
<td>C</td>
<td>B41</td>
<td>B41</td>
<td>B41</td>
<td>Standard</td>
<td>Standard</td>
</tr>
<tr>
<td>WW/WC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slice thickness (mm)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.25</td>
<td>1.25</td>
</tr>
<tr>
<td>Slice Increment (mm)</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1</td>
<td>1.25</td>
<td>1.25</td>
</tr>
</tbody>
</table>

**Recon 3 for 1x1 (1.25 x 1.25) MPR’s**

<table>
<thead>
<tr>
<th>DFOV</th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Algorithm/ Kernel</td>
<td>D</td>
<td>B70</td>
<td>B70</td>
<td>B70</td>
<td>Bone</td>
<td>Bone</td>
</tr>
<tr>
<td>WW/WC</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Slice thickness (mm)</td>
<td>.75</td>
<td>.75</td>
<td>0.6</td>
<td>0.6</td>
<td>1.25</td>
<td>0.625</td>
</tr>
<tr>
<td>Slice Increment (mm)</td>
<td>.5</td>
<td>.5</td>
<td>0.6</td>
<td>0.6</td>
<td>.625</td>
<td>0.625</td>
</tr>
</tbody>
</table>

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

**PT Preparation:** Place anatomy of interest in true anatomical position (Please note reason for protocol changes)

**Ankle Arthrogram:**
Scan range to include affected ankle

If a patient presents with either a partial or total joint replacement it is necessary to provide a pre and a post arthrogram CT scan

**Setup:**
1. Lateral scout to include distal tibia/fibula through entire calcaneus

**DFOV:**
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include distal tibia/fibula through entire calcaneus

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

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Elbow Arthrogram:
Scan range to include affected elbow
If a patient presents with either a partial or total joint replacement it is necessary to provide a pre and a post arthrogram CT scan

Setup:
1. AP scout from distal Humerus through proximal forearm

DFOV:
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include distal Humerus through proximal forearm

Proper alignment for MPR’s:

- Align axial into true coronal and sagittal planes
- Align coronal into true axial and sagittal
- Align sagittal into true coronal and axial planes

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

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Setup:

1. AP scout to include entire carpals thru entire finger tips.

DFOV:

1. Focused DFOV appropriate for anatomy of interest

Scan to include entire carpals thru entire finger tips.

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

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Setup:
1. AP scout to include entire wrist.

DFOV:
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include entire wrist.

*Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality
Foot/Calcaneous

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Setup:
Lateral scout to include above ankle joint through entire foot

DFOV:
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include above ankle joint through entire foot
3. Limit the DFOV to the hind foot if only concerned about the calcaneous

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

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Setup:
Lateral scout to include entire toes

DFOV:
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include entire toes
3. Limit the DFOV to the digit of concern and the adjacent digits

Coronal Range

Sagittal Range
Fingers

PT Preparation: Place anatomy of interest in true anatomical position
(Please note reason for protocol changes)

Setup:
AP scout to include just below wrist through entire fingers

DFOV:
1. Focused DFOV appropriate for anatomy of interest
2. Scan to include entire fingers
3. Limit the DFOV to the digit of concern and the adjacent digits

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