

# CT Peds Extremity

Updated 05/04/24

Reviewed 05/15/25

Indications - pain, trauma, fracture, extremity weakness, mass, infection.

**NEVER perform a multiphase or without and with exam on a pediatric patient unless approved by a rad.**

## GENERAL SCAN NOTES

Remove any metal from the imaging field of view.

Topogram/Coverage - As per adult MSK protocols.

Scan through entire fracture if one is present.

Adjust FOV (field of view) on topogram to smallest without cropping anatomy.

IV Contrast: Weight-based Omnipaque-300, inject at 2 mL/sec, 22-gauge or larger, 60 secs scan delay.

For **GE scanners**, it is essential for the 1st recon thickness on the scanner to match the 1st recon thickness in this protocol book for the prescribed Noise Index to be valid. The 1st recon should generally be the thickest recon in the protocol.

## SIEMENS PARAMETERS & RECONS

|               | Scan Mode | kV  | mAs | Care Dose | Care kV & Lvl | Pitch | Acq | Coll | Rot Time |
|---------------|-----------|-----|-----|-----------|---------------|-------|-----|------|----------|
| Sensation 16  | spiral    | 120 | 60  | on        | NA            | 0.80  | 16  | 0.75 | 1.00     |
| Go Up 32      | spiral    | 110 | 161 | on        | on 170        | 1.50  | 32  | 0.7  | 1.00     |
| Sensation 64  | spiral    | 120 | 60  | on        | NA            | 0.90  | 64  | 0.6  | 1.00     |
| Definition 64 | spiral    | 100 | 77  | on        | on            | 0.80  | 64  | 0.6  | 1.00     |
| Go Top 64     | spiral    | 100 | 224 | on        | on 170        | 1.50  | 64  | 0.6  | 1.00     |
| Drive 128     | spiral    | 100 | 54  | on        | on            | 0.80  | 128 | 0.6  | 1.00     |
| Force 192     | spiral    | 100 | 35  | on        | <b>off</b>    | 0.80  | 192 | 0.6  | 1.00     |

| Name of Series | Thick | Interval | Kernel      | Window     | IR Lvl | Recon Direction |
|----------------|-------|----------|-------------|------------|--------|-----------------|
| AX BONE        | 2.0   | 2.0      | Br59 / B60s | bone/osteo | 3      | head/feet       |
| COR BONE       | 2.0   | 2.0      | Br59 / B60s | bone/osteo | 3      | front/back      |
| SAG BONE       | 2.0   | 2.0      | Br59 / B60s | bone/osteo | 3      | left/right      |
| AX SOFT        | 2.0   | 2.0      | Br40 / B30s | abdomen    | 3      | head/feet       |

Add the following recons if the indication is **soft tissue** related.

|          |     |     |             |         |   |            |
|----------|-----|-----|-------------|---------|---|------------|
| COR SOFT | 2.0 | 2.0 | Br40 / B30s | abdomen | 3 | front/back |
| SAG SOFT | 2.0 | 2.0 | Br40 / B30s | abdomen | 3 | left/right |

Perform all reconstructions using the planes prescribed on the images in the adult MSK protocols.

# CT Peds Extremity

## GE PARAMETERS & RECONS

For **LightSpeed 16** and **Optima 540** scanners:

|                             | Scan Type | kV  | mA Range | Noise Index | Smart mA | Slice Thick | Beam Coll | Pitch | Speed | Rot Time |
|-----------------------------|-----------|-----|----------|-------------|----------|-------------|-----------|-------|-------|----------|
| 0-20 lbs (0-9 kgs)          | helical   | 80  | 50-100   | 11.31       | on       | 2.5         | 20        | 1.375 | 27.50 | 0.5      |
| 21-60 lbs (9-27.2 kgs)      | helical   | 100 | 50-100   | 14.14       | on       | 2.5         | 20        | 1.375 | 27.50 | 0.5      |
| 61-100 lbs (27.3-45.4 kgs)  | helical   | 100 | 50-100   | 16.97       | on       | 2.5         | 20        | 1.375 | 27.50 | 0.5      |
| 101-200 lbs (45.5-90.7 kgs) | helical   | 120 | 50-100   | 19.80       | on       | 2.5         | 20        | 1.375 | 27.50 | 0.5      |
| >200 lbs (>90.8 kgs)        | helical   | 120 | 50-150   | 25.46       | on       | 2.5         | 20        | 1.375 | 27.50 | 0.5      |

For **LightSpeed & Discovery VCT 64** scanners:

|                             |         |     |        |       |    |     |    |       |       |     |
|-----------------------------|---------|-----|--------|-------|----|-----|----|-------|-------|-----|
| 0-20 lbs (0-9 kgs)          | helical | 80  | 50-100 | 11.31 | on | 2.5 | 40 | 1.375 | 55.00 | 0.5 |
| 21-60 lbs (9-27.2 kgs)      | helical | 100 | 50-100 | 14.14 | on | 2.5 | 40 | 1.375 | 55.00 | 0.5 |
| 61-100 lbs (27.3-45.4 kgs)  | helical | 100 | 50-100 | 16.97 | on | 2.5 | 40 | 1.375 | 55.00 | 0.5 |
| 101-200 lbs (45.5-90.7 kgs) | helical | 120 | 50-100 | 19.80 | on | 2.5 | 40 | 1.375 | 55.00 | 0.5 |
| >200 lbs (>90.8 kgs)        | helical | 120 | 50-150 | 25.46 | on | 2.5 | 40 | 1.375 | 55.00 | 0.5 |

| Name of Series | Thickness  | Interval   | Recon Algorithm  | Window Width/Level | Recon Direction  |
|----------------|------------|------------|------------------|--------------------|------------------|
| <b>AX BONE</b> | <b>2.5</b> | <b>2.5</b> | <b>bone full</b> | <b>2500/480</b>    | <b>head/feet</b> |
| COR BONE       | 2.5        | 2.5        | bone full        | 2500/480           | front/back       |
| SAG BONE       | 2.5        | 2.5        | bone full        | 2500/480           | left/right       |
| AX SOFT        | 2.5        | 2.5        | std full         | 400/40             | head/feet        |

**Must be first recon.**

Add the following recons if the indication is **soft tissue** related.

|          |     |     |          |        |            |
|----------|-----|-----|----------|--------|------------|
| COR SOFT | 2.5 | 2.5 | std full | 400/40 | front/back |
| SAG SOFT | 2.5 | 2.5 | std full | 400/40 | left/right |

## PHILIPS PARAMETERS & RECONS

|              | Scan Mode | kV  | Avg mAs | Dose Index | 3D Dose | Pitch | Detect | Colli | Rot Time |
|--------------|-----------|-----|---------|------------|---------|-------|--------|-------|----------|
| Incisive 128 | helical   | 120 | 94      | 23         | on      | 1.00  | 64     | 0.625 | 0.75     |

| Name of Series | Thick | Interval | Filter | Window  | iDose | Recon Direction |
|----------------|-------|----------|--------|---------|-------|-----------------|
| AX BONE        | 3.0   | 3.0      | YC     | bone    | 2     | head/feet       |
| COR BONE       | 3.0   | 3.0      | YC     | bone    | 2     | front/back      |
| SAG BONE       | 3.0   | 3.0      | YC     | bone    | 2     | left/right      |
| AX SOFT        | 3.0   | 3.0      | B      | abdomen | 2     | head/feet       |

Add the following recons if the indication is **soft tissue** related.

|          |     |     |   |         |   |            |
|----------|-----|-----|---|---------|---|------------|
| COR SOFT | 3.0 | 3.0 | B | abdomen | 2 | front/back |
| SAG SOFT | 3.0 | 3.0 | B | abdomen | 2 | left/right |