

CT Neck Parathyroid 4D

Updated 05/02/24

Reviewed 05/14/25

Indications - hyperparathyroidism, parathyroid hyperplasia, parathyroid adenoma, elevated PTH level, hypercalcemia.

GENERAL SCAN NOTES

Remove any metal from the imaging field of view (particularly dentures).

Use non metallic markers for palpable areas. Do not use metallic skin markers areas due to streak artifact.

Patient positioning is very important to decrease beam hardening artifact from shoulders:

Place rolled towel/sheet between patient's shoulder blades to drop shoulders posteriorly.

Have patient pull a folded sheet/towel wrapped around foot with both hands to pull shoulders towards feet.

Instruct patient to not swallowing during imaging.

Topogram - orbital floor through inferior aspect of main pulmonary artery.

Craniocaudal coverage - orbital floor through inferior aspect of main pulmonary artery on all phases.

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

IV Contrast:

Administer **100 mL Omnipaque-300**.

Inject at **4 mL/sec** followed by 40 mL saline flush, 20-gauge or larger in forearm or more proximal.

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.

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SIEMENS PARAMETERS & RECONS

For the **Pre Contrast**, **25 secs** and **85 secs** phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	150	on	NA	0.80	16	0.8	0.75	15.6
Go Up 32	spiral	130	102	on	on 155	0.80	32	0.7	1.0	11.2
Sensation 64	spiral	120	150	on	NA	0.90	64	0.6	1.0	11.6
Definition 64	spiral	120	165	on	on	0.80	64	0.6	1.0	13.0
Go Top 64	spiral	120	119	on	on 155	0.80	64	0.6	1.0	6.5
Drive 128	spiral	120	116	on	on	0.80	128	0.6	1.0	6.5
Force 192	spiral	120	116	on	on	0.80	192	0.6	1.0	4.3

PRE CONTRAST

Name of Series	Thick	Interval	Kernel	Window	Recon Direction
AX SOFT	3.0	3.0	Br40 / B31s	abdomen	head/feet
COR SOFT	3.0	3.0	Br40 / B31s	abdomen	front/back

25 SEC DELAY PHASE

AX 25 SECS	3.0	3.0	Br40 / B31s	abdomen	head/feet
COR 25 SECS	3.0	3.0	Br40 / B31s	abdomen	front/back
SAG 25 SECS	3.0	3.0	Br40 / B31s	abdomen	left/right
AX 25 SECS THINS	1.0	1.0	Br40 / B31s	abdomen	head/feet

85 SEC DELAY PHASE

AX 85 SECS	3.0	3.0	Br40 / B31s	abdomen	head/feet
COR 85 SECS	3.0	3.0	Br40 / B31s	abdomen	front/back
SAG 85 SECS	3.0	3.0	Br40 / B31s	abdomen	left/right
AX 85 SECS THINS	1.0	1.0	Br40 / B31s	abdomen	head/feet

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GE PARAMETERS & RECONS

For the Pre Contrast, 25 secs and 85 secs phases:

	Scan Type	SFOV	kV	mA Range	Noise Index	Smart mA	Slice Thick	Beam Coll	Pitch	Speed	Rot Time	Dose Red	ASIR	Scan Time
LS 16	helical	large	120	100-440	8.60	on	2.5	10	1.375	13.75	0.6	NA	NA	8.7
Opt 540	helical	large	120	100-440	8.60	on	2.5	10	1.375	13.75	0.6	NA	NA	8.7
LS VCT 64	helical	small body	120	100-335	9.10	on	2.5	40	0.984	39.375	0.5	30	30	2.5
Disc VCT 64	helical	small body	120	100-335	9.10	on	2.5	40	0.984	39.375	0.5	NA	NA	2.5

PRE CONTRAST

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX PRE	2.5	2.5	std full	400/40	head/feet
COR PRE	2.5	2.5	std full	400/40	front/back

Must be first recon.

25 SEC DELAY PHASE

AX 25 SECS	2.5	2.5	std full	400/40	head/feet
COR 25 SECS	2.5	2.5	std full	400/40	front/back
SAG 25 SECS	2.5	2.5	std full	400/40	left/right
AX 25 SECS AX THINS	1.25	1.25	std full	400/40	head/feet

Must be first recon.

85 SEC DELAY PHASE

AX 85 SECS	2.5	2.5	std full	400/40	head/feet
COR 85 SECS	2.5	2.5	std full	400/40	front/back
SAG 85 SECS	2.5	2.5	std full	400/40	left/right
AX 85 SECS AX THINS	1.25	1.25	std full	400/40	head/feet

Must be first recon.

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PHILIPS PARAMETERS & RECONS

For the **Pre Contrast**, **25 secs** and **85 secs** phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	129	22	on	0.80	64	0.625	0.75	4.7

PRE CONTRAST

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX SOFT	3.0	3.0	B	soft tissue neck	3	head/feet
COR SOFT	3.0	3.0	B	soft tissue neck	3	front/back

25 SEC DELAY PHASE

AX 25 SECS	3.0	3.0	B	soft tissue neck	3	head/feet
COR 25 SECS	3.0	3.0	B	soft tissue neck	3	front/back
SAG 25 SECS	3.0	3.0	B	soft tissue neck	3	left/right
AX 25 SECS THINS	1.0	1.0	B	soft tissue neck	3	head/feet

85 SEC DELAY PHASE

AX 85 SECS	3.0	3.0	B	soft tissue neck	3	head/feet
COR 85 SECS	3.0	3.0	B	soft tissue neck	3	front/back
SAG 85 SECS	3.0	3.0	B	soft tissue neck	3	left/right
AX 85 SECS THINS	1.0	1.0	B	soft tissue neck	3	head/feet