

CT Chest Full High-Res

Updated 05/01/24

Reviewed 05/14/25

Indications - interstitial lung disease (ILD), pulmonary fibrosis, interstitial pulmonary fibrosis (IPF), usual interstitial pneumonitis (UIP), nonspecific interstitial pneumonitis (NSIP), bronchiectasis, asbestosis, sarcoidosis, hypersensitivity pneumonitis, connective tissue disease, rheumatoid, scleroderma and pneumoconiosis.

Only use this full HRCT protocol if ordered as full HRCT or protocolled by rad.

Use CT chest HRCT charges. Do not use regular CT chest charges.

GENERAL SCAN NOTES

Move the patient's arms over his/her head if possible. Remove any metal from the imaging field of view.

Have the patient cough a few times to clear secretions. This reduces incidence of small lung nodules.

Topogram - lung apices through diaphragm (obtained during end inspiration).

Craniocaudal scan coverage:

Supine end inspiration phase - **lung apices** through **adrenal glands** (obtained during end inspiration).

Supine end expiration phase - **lung apices** through **diaphragm** (obtained during end inspiration).

Prone end inspiration phase - **carina** through **diaphragm** (obtained during end inspiration).

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

Scan parameters for the supine end inspiratory phase are the same as routine chest protocol.

Scan parameters for the supine end expiratory and prone end inspiratory phases are the same as low-dose chest protocol.

IV Contrast: 100 mL Omnipaque-300, inject at 2 mL/sec, 30 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.

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SIEMENS PARAMETERS & RECONS

For the Supine End Inspiration phase:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	100	on	NA	1.15	16	0.75	0.5	10.9
Go Up 32	spiral	130	51	on	on 80	1.50	32	0.7	0.8	7.1
Sensation 64	spiral	120	100	on	NA	1.40	64	0.6	0.5	5.6
Definition 64	spiral	120	110	on	on	1.20	64	0.6	0.5	6.5
Go Top 64	spiral	120	62	on	on 80	1.20	64	0.6	0.33	2.1
Drive 128	spiral	120	66	on	on	1.20	128	0.6	0.5	3.3
Force 192	spiral	110	51	on	on	1.20	192	0.5	0.5	2.6

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX INSP LUNG	3.0	3.0	Bl57 / B70f	lung	3	head/feet
AX INSP SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	head/feet
COR INSP SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	front/back
SAG INSP SOFT	3.0	3.0	Br40 / B41f	mediastinum	3	left/right
AX INSP HRCT	1.0	5.0	Bl57 / B70f	lung	3	head/feet
COR INSP HRCT	1.0	5.0	Bl57 / B70f	lung	3	front/back
AX INSP THINS	1.0	0.8	Br40 / B41f	mediastinum	3	head/feet
AX INSP MIPS	8.0	3.0	Br40 / B41f	lung	3	head/feet

For the Supine End Expiration and Prone End Inspiration phases:

	Scan Mode	kV	mAs	Care Dose	Care kV & Lvl	Pitch	Acq	Coll	Rot Time	Scan Time
Sensation 16	spiral	120	60	on	NA	1.15	16	0.75	0.5	10.9
Go Up 32	spiral	130	31	on	on 80	1.50	32	0.7	0.8	7.1
Sensation 64	spiral	120	60	on	NA	1.40	64	0.6	0.5	5.6
Definition 64	spiral	120	66	on	on	1.20	64	0.6	0.5	6.5
Go Top 64	spiral	120	37	on	on 80	1.20	64	0.6	0.33	2.1
Drive 128	spiral	120	40	on	on	1.20	128	0.6	0.5	3.3
Force 192	spiral	110	31	on	on	1.20	192	0.5	0.5	2.6

Name of Series	Thick	Interval	Kernel	Window	IR Lvl	Recon Direction
AX EXP HRCT	1.0	5.0	Bl57 / B70f	lung	3	head/feet
AX PRONE HRCT	1.0	5.0	Bl57 / B70f	lung	3	head/feet

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GE PARAMETERS & RECONS

For the Supine End Inspiration phase:

	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	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
Opt 540	helical	large	120	100-440	16.36	on	2.5	20	1.375	27.50	0.5	NA	NA	5.5
LS VCT 64	helical	large body	120	100-650	18.38	on	2.5	40	1.375	55.00	0.4	50	50	2.2
Disc VCT 64	helical	large body	120	100-650	18.38	on	2.5	40	1.375	55.00	0.4	NA	NA	2.2

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX INSP LUNG	2.5	2.5	lung	1600/-600	head/feet
AX INSP SOFT	2.5	2.5	std full	400/40	head/feet
COR INSP SOFT	2.5	2.5	std full	400/40	front/back
SAG INSP SOFT	2.5	2.5	std full	400/40	left/right
AX INSP HRCT	1.25	5.0	bone plus full	1600/-600	head/feet
COR INSP HRCT	1.25	5.0	bone plus full	1600/-600	front/back
AX INSP THINS	1.25	1.0	std full	400/40	head/feet
AX INSP MIPS	8.0	3.0	std full	1600/-600	head/feet

Must be first recon.

For the Supine End Expiration and Prone End Inspiration 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	100-300	36.20	on	1.25	20	1.375	27.50	0.5	NA	NA	5.5
Opt 540	helical	large	120	100-300	36.20	on	1.25	20	1.375	27.50	0.5	NA	NA	5.5
LS VCT 64	helical	large body	120	50-300	36.01	on	1.25	40	0.984	39.375	0.5	30	70	3.8
Disc VCT 64	helical	large body	120	50-300	36.01	on	1.25	40	0.984	39.375	0.5	NA	NA	3.8

Name of Series	Thickness	Interval	Recon Algorithm	Window Width/Level	Recon Direction
AX EXP HRCT	1.25	5.0	bone plus full	1600/-600	head/feet
AX PRONE HRCT	1.25	5.0	bone plus full	1600/-600	head/feet

Must be first recon.

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PHILIPS PARAMETERS & RECONS

For the **Supine End Inspiration** phase:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	92	19	on	1.00	64	0.625	0.75	5.6

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX INSP LUNG	3.0	3.0	YA	lung	3	head/feet
AX INSP SOFT	3.0	3.0	B	mediastinum	3	head/feet
COR INSP SOFT	3.0	3.0	B	mediastinum	3	front/back
SAG INSP SOFT	3.0	3.0	B	mediastinum	3	left/right
AX INSP HRCT	1.0	5.0	YA	lung	3	head/feet
COR INSP HRCT	1.0	5.0	YA	lung	3	front/back
AX INSP THINS	1.0	0.75	B	mediastinum	3	head/feet
AX INSP MIPS	8.0	2.0	B	lung	3	head/feet

For the **Supine End Expiration** and **Prone End Inspiration** phases:

	Scan Mode	kV	Avg mAs	Dose Index	3D Dose	Pitch	Detect	Colli	Rot Time	Scan Time
Incisive 128	helical	120	55	19	on	1.00	64	0.625	0.75	5.6

Name of Series	Thick	Interval	Filter	Window	iDose	Recon Direction
AX EXP HRCT	1.0	5.0	YA	lung	3	head/feet
AX PRONE HRCT	1.0	5.0	YA	lung	3	head/feet