Austin Radiological Association

CT Neuro Protocols

PROTOCOLS

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

Spine Thoracic.....

Spine Lumbar.....

Spine Geck.....

Spine Mazor.....

Spine Stealth/Stryker .....

Spine Total Combo.....

Temporal Bones.....

Temporal Bones Vanderbilt.....

TMJ.....

TMJ Concepts.....

Head DBS Lead.....

Protocol Review.....

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

ARA DIAGNOSTIC IMAGING

IV CATHETER GUIDELINES

Catheter	Injection Rate	PSI
BD Nexiva Diffusics		
24g	Less than or equal to 2cc/sec	325
22g	Less than 4cc/sec	325
20g	Greater than 4cc/sec	325
B Braun Safety Introcan		
24g	HAND INJECTION ONLY	
22g	Less than or equal to 2cc/sec	300
20g	Less than or equal to 4cc/sec	300
18g	Less than or equal to 6cc/sec	300
B Braun Safety 3 Introcan		
24g	Less than or equal to 2.5cc/sec	300
22g	Less than or equal to 3.5cc/sec	300
20g	Less than or equal to 6cc/sec	300

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CAROTID/NECK CTA - Revised-5/20/2022

CTDI: ~10-25mGy

Setup:

- Neck positioned on flat table top
- Retract shoulders as much as possible
- Head First Supine PA/Lateral scout from below the aortic arch through the bottom half of the orbits

DFOV: Preferred 15 cm (18 cm can be used when the required anatomy is not displayed in a 15cm DFOV)

Exam:

1. CTA Neck
    - Scan from the floor of the sella through the level of arch (includes great vessel origins and most of the arch)
    - Smart Prep or Bolus Tracking in the descending aorta (trigger set at 80 HU on Siemens) (45 HU on GE)
    - 10 second monitoring delay on Bolus Tracking/Smart Prep

Contrast:

- at the discretion of the Radiologist
- 75ml of 320- 370 mg/dl non-ionic contrast @ 5 ml/sec
- See IV Catheter Guidelines

Injector Setup:

- 30ml Saline Flush @ 5ml/sec
- 75ml Omnipaque 350 @ 5ml/sec
- 100ml Saline Flush @ 5ml/sec

PACS Series:

- 1x1 CTA axial (source Images)
- 1x1 CTA Soft Tissue Coronal MIP
- 1x1 CTA Soft Tissue Sagittal MIP
- 3D Imaging (RT/LT Carotid/Vertebral Slabs, VR Overlay)
- Patient Protocol/Dose Report

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CAROTID PROTOCOLS

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	0.5		Rotation Time (sec)	0.5	
Pitch	1	1	1		Pitch	0.969:1	
Scan FOV	Large	Large	Small		Speed (mm/rot)	19.37	
CareDose4D	On	On	On		Scan FOV	Large	
Quality ref mAs	150	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	0	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Recon 1 Carotid					**Recon 1 ST Carotid**		
Kernel	I31f Med Smooth	I31f Med Smooth	I31f Med Smooth		Algorithm	Standard	
Window	CT angio	Larynx	Larynx		Window Width/ Level	700/80	
SAFIRE/ADMIRE	2	2	2		Slice Thickness (mm)	1.25	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	1.25	
Slice Increment (mm)	1	1	1		Type	Full	
Reformat set					**Recon 2 Recons**		
Kernel	I30f Med Smooth	I30f Med Smooth	I26f Med Smooth		Algorithm	Standard	
Window	CT angio	Larynx	Larynx		Window Width/ Level	700/80	
SAFIRE/ADMIRE	2	2	1		Slice Thickness (mm)	0.625	
Slice Thickness (mm)	0.75	0.75	0.75		Slice Increment (mm)	0.625	
Slice Increment (mm)	0.5	0.5	0.5		Type	Plus	
Coronal/ Sagittal					ASIR	none	
Kernel	I31f Med Smooth	I31f Med Smooth	I31f Med Smooth		**Recon 3 Bone**		
Window	CT angio	angio	CT angio		Algorithm	Bone Plus	
SAFIRE/ADMIRE	2	2	2		Window Width/ Level	1500/450	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
					Type	Plus	
					ASIR	Full	
					Recon 4 ST		
					Algorithm	STND	
					Window Width/ Level	700/80	
					Slice Thickness (mm)	1.25	
					Slice Increment (mm)	0.625	
					Type		
					ASIR	Full	

V1.1 **Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

CISTERNOGRAM - Revised-7/12/2019

CTDI: ~15mGy

****Protocol to be discussed with Performing Radiologist****

****Scan can be done Prone or Supine depending which position they leak****

Setup: 1. Prone, Lateral scout, no gantry angle

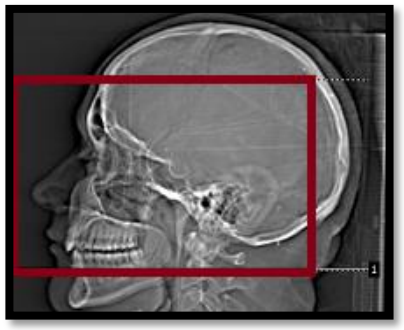
2. Scout from tip of the nose though skull

3. Patient Positioning:

- Prone Chin up and/or Supine as requested by the Radiologist ****marker on RT cheek****

4. Scan anterior to the tip of the nose through the ventricles

DFOV: Preferred 25 cm



PACS Series

- **1x1 Pre** Coronal Bone, Coronal ST, Axial Bone, Axial ST, Sagittal Bone, Sagittal ST
- **1x1 Post** Coronal Bone, Coronal ST, Axial Bone, Axial ST, Sagittal Bone, Sagittal ST
- Patient Protocol/Dose Report

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CISTERNOGRAM PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1	1	0.5		Rotation Time (sec)	0.5	
Pitch	1	1	1		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	On	On	On		Scan FOV	Large	
Quality ref mAs	35	50	125		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		5 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
ST Cor/Sag					**Recon 1 ST**		
Kernel	I31f Med Smooth	I31f Med Smooth	I31f Med Smooth		Algorithm	Standard	
Window	Sinus	Sinus	Sinus		Window Width/ Level	700/80	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	2.5	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	2.5	
Slice Increment (mm)	1	1	1		Type	Full	
Bone Cor/Sag					ASIR	SS20	
Kernel	H70h Very Sharp	H70h Very Sharp	H70h Very Sharp		**Recon 2 Bone**		
Window	Inner Ear	Inner Ear	Inner Ear		Algorithm	Standard	
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	700/80	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
Reformat ST					Type	Full	
Kernel	I31f Med Smooth	I31f Med Smooth	I31f Med Smooth		ASIR		
Window	Sinus	Sinus	Sinus		**Recon 3 ST Reformat**		
SAFIRE/ADMIRE	0	0	0		Algorithm	Standard	
Slice Thickness (mm)	0.75	0.75	0.75		Window Width/ Level	700/80	
Slice Increment (mm)	0.5	0.5	0.5		Slice Thickness (mm)	0.625	
Reformat Bone					Slice Increment (mm)	0.625	
Kernel	H70h Very Sharp	H70h Very Sharp	H70h Very Sharp		Type	Full	
Window	Inner Ear	Inner Ear	Inner Ear		ASIR		
SAFIRE/ADMIRE	0	0	0		**Recon 4 Bone Reformat**		
Slice Thickness (mm)	0.75	0.75	0.75		Algorithm	Standard	
Slice Increment (mm)	0.5	0.5	0.5		Window Width/ Level	700/80	
					Slice Thickness (mm)	0.625	
					Slice Increment (mm)	0.625	
					Type	Full	
					ASIR		

V1.1 **Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

CRANIOFACIAL - Revised-7/31/2018

Not to exceed CTDIvol of 15 mGy

This protocol is used when routine Craniofacial, Craniofacial Medical Modeling, BIOMET modeling or Impantech are requested

Setup: PA/Lateral scout from below the mandible through the top of the skull

Place skin marker on the patient's right cheek prior to scanning

Reconstructions:

- 3mm x 3mm Oblique MPR's of the brain should be parallel to the skull base and extend from the skull base through the top of the skull

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- Topogram
- 1x1 Axial Soft Tissue 25cm DFOV (CD Data Set)
- 1x1 Axial Bone
- 1x1 Bone Coronal
- 1x1 Bone Sagittal
- 3x3 Soft Tissue Oblique MPR Axial
- VRT Rotation/Tumble (3D)
- Patient Protocol/Dose Report

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CRANIOFACIAL PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	1	1	1		Rotation Time (sec)	0.5
Pitch	0.85	0.8	0.8		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	On	On	On		Scan FOV	Large
Quality ref mAs	35	35	35		Auto mA range	100-500
kVp	130				kVp	120
ref kVp		130	120		Smart mA	off
Optimize Slider position		5 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CD Data Set					**ST Brain**	
Kernel	H31s Med Smooth	H31s Med Smooth	J37s Med Smooth		Algorithm	Standard
Window	Sinus	Sinus	Cerebrum		Window Width/ Level	350/40
SAFIRE/ADMIRE	0	0	2		Slice Thickness (mm)	1.25
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	1.25
Slice Increment (mm)	1	1	1		Type	Full
Bone					ASIR	SS20
Kernel	H70s Med Smooth	J70h Very Sharp	J70h Very Sharp		**Bone**	
Window	Inner Ear	Inner Ear	Cranial Bone		Algorithm	Bone Plus
SAFIRE/ADMIRE	0	0	1		Window Width/ Level	1500/450
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Cor/Sag					Type	Full
Kernel	H70s Med Smooth	J70h Very Sharp	J70h Very Sharp		ASIR	
Window	Inner Ear	Inner Ear	Cranial Bone		**3D**	
SAFIRE/ADMIRE	0	0	1		Algorithm	Bone Plus
Slice Thickness (mm)	1	1	1		Window Width/ Level	350/40
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	1.25
Axial Oblique					Slice Increment (mm)	0.6
Kernel	H70s Med Smooth	H31s Med Smooth	J37s Med Smooth		Type	Plus
Window	Cerebrum	Inner Ear	Cerebrum		ASIR	
SAFIRE/ADMIRE	0	0	2		**Bone Reformat**	
Slice Thickness (mm)	3	3	3		Algorithm	Bone Plus
Slice Increment (mm)	3	3	3		Window Width/ Level	1500/450
Reformat					Slice Thickness (mm)	1.25
Kernel	H70s Med Smooth	H31s Med Smooth	J30s Med Smooth		Slice Increment (mm)	0.6
Window	Cerebrum	Inner Ear	Cerebrum		Type	Plus
SAFIRE/ADMIRE	0	0	1		ASIR	None
Slice Thickness (mm)	0.6	0.6	0.75		**ST Reformat**	
Slice Increment (mm)	0.3	0.3	0.3		Algorithm	STND

V1.1 **Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

DENTAL - Revised-12/21/2017

CTDI: ~15 mGy

Setup:

- Supine, lateral scout from below the mandible through the frontal sinuses

Scan parameters:

- Supine helical scan from below the mandible through the frontal sinuses
- 18 cm DFOV is preferred (range 15-22cm)
- If the scan is performed with and without contrast, the bone reconstructions only need to be done on the post-contrast scan

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

Send Reformat set to SyngoVia

PACS Series:

- 1x1 Axial Bone
- 1x1 Axial Soft Tissue
- 1x1 Coronal Bone
- 1x1 Sagittal Bone
- Panorex (3d)
- Para- Axial Dental (3d)
- Patient Protocol/Dose Report

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DENTAL PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1	1	1		Rotation Time (sec)	0.5	
Pitch	1	1	1		Pitch	0.969:1	
Scan FOV	Large	Large	Small		Speed (mm/rot)	39.37	
CareDose4D	On	On	On		Scan FOV	Large	
Quality ref mAs	35	50	125		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		5 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial Bone					**Dental ST**		
Kernel	H70h Very Sharp	H70h Very Sharp	H70h Very Sharp		Algorithm	Standard	
Window	Inner Ear	Inner Ear	Inner Ear		Window Width/ Level	350/40	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	1.25	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	1.25	
Slice Increment (mm)	1	1	1		Type	Full	
Axial ST					ASIR		
Kernel	I31f Med Smooth	I31f Med Smooth	H41s Med +		**Dental Bone**	Bone Plus	
Window	Sinus	Sinus	Sinuses		Algorithm	1500/450	
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	1.25	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	Full	
Reformat					Type	SS20	
Kernel	I31f Med Smooth	I31f Med Smooth	H70h Very Sharp		ASIR		
Window	Inner Ear	Inner Ear	Inner Ear		**Reformat Bone**		
SAFIRE/ADMIRE	0	0	0		Algorithm	Standard	
Slice Thickness (mm)	0.75	0.75	0.6		Window Width/ Level	1500/450	
Slice Increment (mm)	0.3	0.3	0.3		Slice Thickness (mm)	0.625	
					Slice Increment (mm)	0.625	

CTDI: ~75 mGy

Setup:

- Supine, PA/Lateral scout from below the hard palate thru the head
- Occlusional plane perpendicular to table
- Center at EM
- BB to be placed on the Right Ear

Scan parameters:

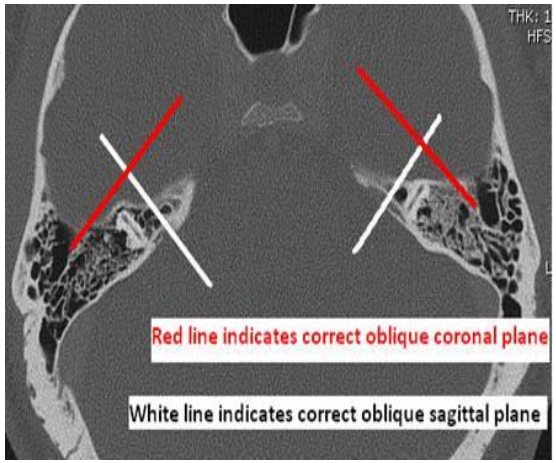
- Supine helical scan from below the hard palate to include top of head
- Include tip of nose and back of head
- 25 cm DFOV is preferred / 15 cm DFOV on Unilateral RT/LT

Contrast:

At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 50 second delay

PACS Series:

- Topogram/Scout
- 0.625 x 0.625 Axial Bone through entire head ; 25 DFOV ; WW 350 – WL 50
- 0.5 x 0.5 Coronal Bone through entire head ; 25 DFOV ; WW 350 – WL 50
- 0.5 x 0.5 Sagittal Bone through entire head ; 25 DFOV ; WW 350 – WL 50
- 0.5 x 0.5 Right Coronal Oblique Temporal Bone ; 15 DFOV ; WW 4000 – WL 700
- 0.5 x 0.5 Left Coronal Oblique Temporal Bone ; 15 DFOV ; WW 4000 – WL 700
- 0.5 x 0.5 Right Sagittal Oblique Temporal Bone ; 15 DFOV ; WW 4000 – WL 700
- 0.5 x 0.5 Left Sagittal Oblique Temporal Bone ; 15 DFOV ; WW 4000 – WL 700
- Dose report
- ***PT to take CD- 1st CD with Axial Data only, 2nd CD with everything***



**SEE ATTACHED PROTCOL BELOW FOR SCAN SPECIFIC REQUIREMENTS

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CT Dean Protocol

Positioning
Occlusional plane perpendicular to table
Center at EM

Scan Region
Include top of the head to the hard palate
Include tip of nose and back of the head

Raw Scan Data

Axial, Helical Scan
Thickness 0.625
Interval: 0.625
Speed: 10.62 @ 0.531:1
SFOV: Head
kV: 140 WW: 350 WL: 50
mA: 400auto
Total Exposure Time: 5.64
Noise Index: 7.00
Smart mA: Turn On
CTDI Volume: 75

Recon 2 (Thins)

Thickness: 0.625
Interval: 0.312
Recon Type: Bone Plus
Recon option: Full IQ Enhance Plus
WW: 4000 WL: 700

Reformats
Coronal – through entire head (tip of nose to back of head) 0.5 X 0.5 – 25FOV – 4000W 700L
Sagittal – through entire head (top of head to the hard palate) 0.5 X 0.5 – 25 FOV – 4000W 700L
Stenver – R and L sides – 0.5 X 0.5 – 15 FOV – 4000W 700L
Poschl – R and L sides – 0.5 X 0.5 – 15 FOV – 4000W 700L

When finished with this exam please burn one CD with the Raw Axial Sequence and One CD with everything.

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HEAD - Revised-12/02/2022

CTDI: ~35-60mGy (do not exceed the ACR recommended 75mGy)

Setup:

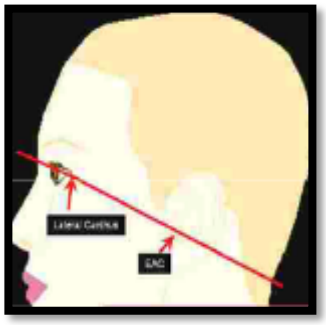
1. Supine, PA/Lateral scouts
2. Patient Positioning: Tilt the patients head so that a line connecting the lateral canthus of the eye and the EAC is perpendicular to the CT tabletop (see below). Angle the gantry if you cannot place the patient's head within 15 degrees of the proper setup angle.
3. Start scans at the bottom of the skull base and scan through the top of the head

DFOV: Preferred 20 cm (Range 18-22)

Contrast:

1. at the discretion of the Radiologist
2. 100 ml of 350 mg iodine/ml non-ionic contrast
3. Minimum 5 minute delay after the administration of IV contrast
4. See IV Catheter Guidelines

Coronals-line dorsum sellae to
Anterior arch of C1 line or perpendicular to hard palate



Positioning

PACS Series:

- 3x3 Brain
- 3x3 Bone (Only needed on one series not both)
- 3X3 Coronal ST
- Patient Protocol/Dose Report

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HEAD PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
					Recon 1 Brain		
Axial Brain					Algorithm	Standard	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		Window Width/ Level	80/35	
Window	Cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	2.5	
SAFIRE/ADMIRE	0	0	2		Slice Increment (mm)	2.5	
Slice Thickness (mm)	3	3	3		Type	Full	
Slice Increment (mm)	3	3	3		ASIR	SS30	
					Recon 2 Bone		
Axial Bone					Algorithm	Bone	
Kernel	J80s Very Sharp	J70h Very Sharp	J70h Very Sharp		Window Width/ Level	3000/800	
Window	Cranial bone	Cranial bone	Cranial bone		Slice Thickness (mm)	2.5	
SAFIRE/ADMIRE	0	0	1		Slice Increment (mm)	2.5	
Slice Thickness (mm)	3	3	3		Type	Full	
Slice Increment (mm)	3	3	3		ASIR	SS20	
					Recon 2 Trauma Reformat		
Coronal ST					Algorithm	STND	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		Window Width/ Level	100/50	
Window	Cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	0	0	2		Slice Increment (mm)	0.625	
Slice Thickness (mm)	3	3	3		Type	Full	
Slice Increment (mm)	3	3	3		ASIR	None	

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

HEAD CTA - Revised-10/02/2024

CTDI: ~ 30-50 mGy / acquisition

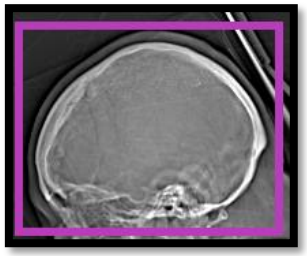
Setup

- Head First Supine
- See CT Head Protocol for scan and reconstruction parameters

DFOV: Preferred 20 cm

Exam:

- Routine Brain without contrast
- CTA Head Only
  - Scan from C1 through the top of the head (NO GANTRY TILT)
  - Smart Prep or Bolus Tracking in descending aorta at the aortic arch (trigger set to 60 HU on Siemens) (50 HU on GE)
  - 10 second monitoring delay on Bolus Tracking/Smart Prep
- Routine Post Contrast Brain @ 5 minutes



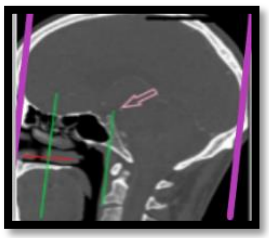
Scan Range

Contrast:

- at the discretion of the Radiologist
  - 50ml Omnipaque 350 @ 5ml/sec *See IV Catheter Guidelines*
  - 100ml Saline Flush @ 5ml/sec

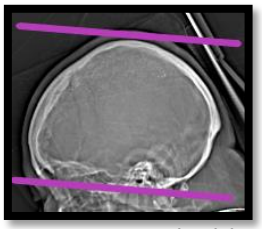
PACS Series:

- Topogram
- 3x3 Pre contrast brain
- 1x1 CTA Axial source images
- 1x1 CTA Coronal/Sagittal MIP
- 16 x1 CTA Axial Oblique MIP
- 3x3 Post contrast brain
- 3x3 Bone (Only needed on the post contrast brain)
- Dose Report



1x1 Coronal MIP

1x1 Sagittal MIP



16x1 CTA Axial Oblique

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HEAD CTA PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	0.5		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	1		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	19.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	275		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial/Cor/Sag							
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		**Recon 1 Brain**		
Window	cerebrum	cerebrum	Base Orbita		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	80/35	
Slice Thickness (mm)	1	3	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	3	1		Slice Increment (mm)	2.5	
Axial Oblique					Type	Full	
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		ASIR	SS30	
Window	cerebrum	Cerebrum	Base Orbita				
SAFIRE/ADMIRE	2	0	2		**Recon 2 Angio**		
Slice Thickness (mm)	16	16	16		Algorithm	Standard	
Slice Increment (mm)	1	1	1		Window Width/ Level	450/60	
Reformat					Slice Thickness (mm)	1.25	
Kernel	J30s	J37sMedsmooth	H20f Smooth		Slice Increment (mm)	1.25	
Window	cerebrum	Cerebrum	Cerebrum		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	3	3	0.75				
Slice Increment (mm)	3	3	0.5		**Recon CTA Brain**		
Pre/Post Contrast Brain					Algorithm	Standard	
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		Window Width/ Level	700/80	
Window	cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	0.625	
SAFIRE/ADMIRE	2	0	2		Slice Increment (mm)	0.625	
Slice Thickness (mm)	3	3	3		Type	Plus	
Slice Increment (mm)	3	3	3		ASIR	SS30	
Post Contrast Bone							
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp				
Window	Cranial bone	Cranial bone	Cranial Bone				
SAFIRE/ADMIRE	2	0	1				
Slice Thickness (mm)	1	3	3				
Slice Increment (mm)	1	3	3				

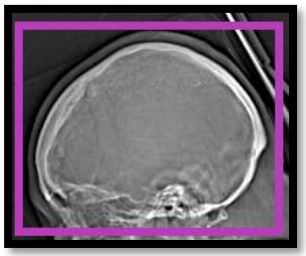
V1.1 **Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

HEAD CTA/CTV-COMBO – 10/02/2024

CTDI: ~ 30-50 mGy / acquisition

Setup:

- Head First Supine
- See CT Head Protocol for scan and reconstruction parameters



Scan Range

DFOV: Preferred 20 cm

Exam:

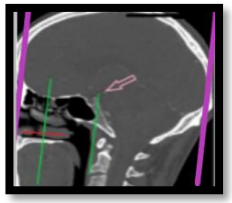
- Routine Brain without contrast
- CTA Head Only (NO TILT)
  - Scan from C1 through the top of the head
  - Smart Prep or Bolus Tracking in descending aorta at the aortic arch (trigger set to 60 HU on Siemens) (50 HU on GE)
  - 10 second monitoring delay on Bolus Tracking/Smart Prep
- CTV Head (NO TILT)
  - Scan from C1 through the top of the head immediately following completion of CTA
- Routine Post Contrast Brain @ 5 minutes

Contrast:

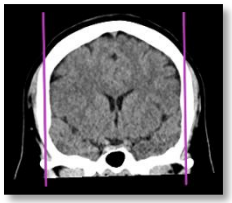
- at the discretion of the Radiologist
- 75 ml of 350 mg iodine/ml non-ionic contrast @ 5 ml/sec *See IV Catheter Guidelines

Injector Setup:

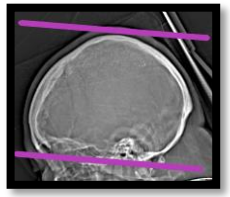
- 30 ml Saline Flush @ 5ml/sec
- 75 ml Omnipaque 350 @ 5ml/sec
- 100 ml Saline Flush @ 5ml/sec



1x1 Coronal MIP



1x1 Sagittal MIP



16x1 Axial Oblique MIP

PACS Series:

- Topogram
- 3x3 Pre contrast brain
- 1x1 CTA Axial source images
- 1x1 CTA Coronal MIP
- 1x1 CTA Sagittal MIP
- 16x1 CTA Axial Oblique MIP
- 1x1 CTV Axial source images
- 1x1 CTV Coronal MIP
- 1x1 CTV Sagittal MIP
- 3x3 Post contrast brain
- 3x3 Bone (Only needed on the post contrast brain)
- 3D lab will create and submit CPR, VRT and MIP images
- Dose Report

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HEAD CTA/CTV PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	19.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	275		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CTA/CTV Axial/Cor/Sag						
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		**Recon 1 Brain**	
Window	Cerebrum	Cerebrum	Base Orbita		Algorithm	Standard
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	80/35
Slice Thickness (mm)	1	3	1		Slice Thickness (mm)	2.5
Slice Increment (mm)	1	3	1		Slice Increment (mm)	2.5
Axial Oblique					Type	Full
Kernel	J30s	J37sMedsmooth	J37f Med Smooth		ASIR	SS30
Window	Cerebrum	Cerebrum	Base Orbita			
SAFIRE/ADMIRE	2	0	2		**Angio Brain**	
Slice Thickness (mm)	16	16	16		Algorithm	Standard
Slice Increment (mm)	1	1	1		Window Width/ Level	450/60
Reformat					Slice Thickness (mm)	1.25
Kernel	J30s	J37sMedsmooth	H20f Smooth		Slice Increment (mm)	1.25
Window	Cerebrum	Cerebrum	Cerebrum		Type	Full
SAFIRE/ADMIRE	2	0	0		ASIR	None
Slice Thickness (mm)	3	3	0.75			
Slice Increment (mm)	3	3	0.5		**Venogram Brain**	
Pre/Post Contrast Brain					Algorithm	Standard
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		Window Width/ Level	450/60
Window	Cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	1.25
SAFIRE/ADMIRE	2	0	2		Slice Increment (mm)	1.25
Slice Thickness (mm)	3	3	3		Type	Full
Slice Increment (mm)	3	3	3		ASIR	None
Post Contrast Bone						
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		**Reformat**	
Window	Cranial bone	Cranial bone	Cranial Bone		Algorithm	Standard
SAFIRE/ADMIRE	2	0	1		Window Width/ Level	700/80
Slice Thickness (mm)	3	3	3		Slice Thickness (mm)	0.625
Slice Increment (mm)	3	3	3		Slice Increment (mm)	0.625

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

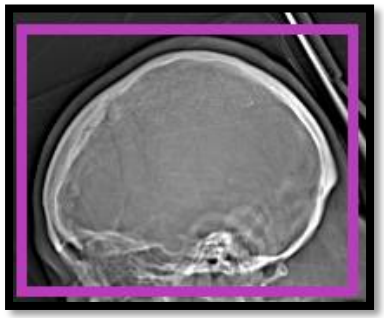
HEAD VENOGRAM - Revised-12/29/2023

CTDI: ~55mGy / acquisition

Setup:

- Head First Supine
- See CT Head Protocol for scan and reconstruction parameters

DFOV: Preferred 20 cm



Exam:

- Routine Brain without contrast
- CTV Head (NO GANTRY TILT)
  - Scan from C1 through the top of the head
- Routine Post Contrast Brain
  - 5 minute delay

Contrast:

*At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast@4ml/sec with a 45 second scan delay

- See IV Catheter Guidelines

PACS Series:

- Topogram
- 3x3 Pre contrast brain
- 1x1 CTV Axial source images
- 1x1 CTV Coronal MIP
- 1x1 CTV Sagittal MIP
- 3x3 Post contrast brain
- 3x3 Bone (Only needed on the post contrast scan)
- Protocol Page/Dose Report

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

HEAD VENOGRAM PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	19.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	275		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CTV Axial/Cor/Sag						
Kernel	J30s	J37sMedsmooth	J37f Med Smooth		**Recon 1 Brain**	
Window	cerebrum	cerebrum	Base Orbita		Algorithm	Standard
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	80/35
Slice Thickness (mm)	1	3	1		Slice Thickness (mm)	2.5
Slice Increment (mm)	1	3	1		Slice Increment (mm)	2.5
Axial Oblique					Type	Full
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		ASIR	SS30
Window	cerebrum	Cerebrum	Base Orbita			
SAFIRE/ADMIRE	2	0	2		**CTV Brain**	
Slice Thickness (mm)	3	3	3		Algorithm	Standard
Slice Increment (mm)	3	3	1		Window Width/ Level	700/80
Reformat					Slice Thickness (mm)	1.25
Kernel	J30s	J37sMedsmooth	J30f Med Smooth		Slice Increment (mm)	1.25
Window	cerebrum	Cerebrum	Base Orbita		Type	Full
SAFIRE/ADMIRE	2	0	2		ASIR	None
Slice Thickness (mm)	3	3	0.75			
Slice Increment (mm)	3	3	0.5		**Reformat**	
Pre/Post Contrast Brain					Algorithm	Standard
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		Window Width/ Level	700/80
Window	cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	0.625
SAFIRE/ADMIRE	2	0	2		Slice Increment (mm)	0.625
Slice Thickness (mm)	3	3	3		Type	Plus
Slice Increment (mm)	3	3	3		ASIR	SS30
Post Contrast Bone						
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp			
Window	Cranial bone	Cranial bone	Cranial Bone			
SAFIRE/ADMIRE	2	0	1			
Slice Thickness (mm)	3	3	3			
Slice Increment (mm)	3	3	3			

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

HEAD AND NECK CTA - Revised-10/02/2024

CTDI: ~ 20-50 mGy / acquisition

Setup:

- Head first Supine
- See CT Head Protocol for Routine head scan and reconstruction parameters

DFOV: Preferred 20 cm (Range 18-22)

Exam:

1. Routine Brain without contrast
2. CTA Head and Neck
   - Scan from the top of the head through the level of the arch (includes great vessel origins and most of the arch)
   - Smart Prep or Bolus Tracking in the Descending aorta (trigger set at 40 HU on Siemens) (40 HU on GE)
   - 10 second monitoring delay on Bolus Tracking/Smart Prep
   - Routine Post Contrast Brain @ a 5 minute delay

Contrast:

- at the discretion of the Radiologist
- 100ml of 350 mg iodine/ml non-ionic contrast @ 5ml/sec *See IV Catheter Guidelines
- 30ml Saline Flush @ 5ml/sec
- 100ml Omnipaque 350 @ 5ml/sec
- 100ml Saline Flush @ 5ml/sec

PACS Series:

- Topogram
- 3x3 Pre contrast (Brain)
- 1x1 CTA axial (source images)
- 1x1 Coronal MIP
- 1x1 Sagittal MIP
- 16 x 1 Axial Oblique MIP (Brain)
- 3x3 Post contrast (Brain) / 3x3 Post Contrast Bone (Head only)
- Patient Protocol/Dose Report

Back to Neuro Protocol Page

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

HEAD AND NECK CTA PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64
Scan Type	spiral	spiral	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6
Rotation Time (sec)	0.6	0.5	1
Pitch	0.8	0.3	0.55
Scan FOV	Large	Large	Large
CareDose4D	on	on	on
Quality ref mAs	190	125	275
kVp	110		
ref kVp		120	120
Optimize Slider position		3 w/o contrast	3 w/o contrast
Optimize Slider position		7 w/ contrast	7 w/ contrast
CTA Axial/Cor/Sag			
Kernel	J30s	J37sMedsmooth	I31f Med Smooth
Window	cerebrum	cerebrum	Larynx
SAFIRE/ADMIRE	2	0	2
Slice Thickness (mm)	1	3	1
Slice Increment (mm)	1	3	1
Axial Oblique			
Kernel	J30s	J37sMedsmooth	I31f Med Smooth
Window	cerebrum	Cerebrum	CT Angio
SAFIRE/ADMIRE	2	0	2
Slice Thickness (mm)	16	16	16
Slice Increment (mm)	1	1	1
Reformat			
Kernel	J30s	J37sMedsmooth	J26f Med Smooth
Window	cerebrum	Cerebrum	Larynx
SAFIRE/ADMIRE	2	0	2
Slice Thickness (mm)	3	3	0.75
Slice Increment (mm)	3	3	0.5
Pre/Post Contrast Brain			
Kernel	J30s	J37sMedsmooth	J37s Med Smooth
Window	cerebrum	Cerebrum	Cerebrum
SAFIRE/ADMIRE	2	0	2
Slice Thickness (mm)	3	3	3
Slice Increment (mm)	3	3	3
Post Contrast Bone			
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp
Window	Cranial bone	Cranial bone	Cranial Bone
SAFIRE/ADMIRE	2	0	1
Slice Thickness (mm)	3	3	3
Slice Increment (mm)	3	3	3

Scanner	Optima 660
Scan Type	spiral
Detector Coverage (mm)	20
Rotation Time (sec)	0.5
Pitch	0.969:1
Speed (mm/rot)	39.37
Scan FOV	Large
Auto mA range	100/400
kVp	120
Smart mA	off
Noise Index	19
ASIR	20%
Brain S	
Algorithm	Standard
Window Width/ Level	80/35
Slice Thickness (mm)	2.5
Slice Increment (mm)	2.5
Type	Full
ASIR	SS30
Angio Brain/Carotids	
Algorithm	Standard
Window Width/ Level	700/80
Slice Thickness (mm)	1.25
Slice Increment (mm)	1.25
Type	Plus
ASIR	SS10
Reformat Brain	
Algorithm	Standard
Window Width/ Level	700/80
Slice Thickness (mm)	0.625
Slice Increment (mm)	0.625
Type	Plus
ASIR	SS30
Reformat Carotid	
Algorithm	Standard
Window Width/ Level	700/80
Slice Thickness (mm)	0.625
Slice Increment (mm)	0.625

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

HEAD ESSENTIAL TREMOR/NEURAVIVE PROTOCOL - Revised-3/01/2018

MRgFUS, Essential Tremor, HIFU, Neuravive, for SDR or similar. *

CTDI: ~60mGy (do not exceed the ACR recommended 75mGy)

a) Contrast: No Contrast

b) Acquisition Direction: helical or axial mode.

c) Inter-slice resolution: 1mm continuous (Thickness=1mm, Spacing=1mm, No overlap, no gaps). A smaller slice size reformatted into a 1 mm set is allowed.

I. For GE: 0.625mm thickness is preferred. If 0.625 mm is unavailable, 1.25 mm is acceptable

d) Kernel / Filter: Post-processed using only the following specific 'Bone' filters:

I. For 'GE' CT machine – use only 'BonePlus' filter

II. For 'Siemens' CT machine – use only 'H60' or 'H60s' i. with a newer model- use 'Hr59' or Hr60 filter

III. For 'Philips' CT machine – use only 'C or C-Sharp' or 'UC' filter

IV. For 'Toshiba/Canon' CT machine – use only 'FC30' filter

e) Alignment: Roughly aligned on supine patient along orbitomeatal line

f) Matrix Size: symmetrical matrix no larger than 512 x 512

g) Coverage: Axial range from air slices above superior most scalp down to skull base, inclusive

I. GE Revolution only – Ensure FOV is set to 'head'

Tilt: No preference for Gantry tilt – a rough alignment as above will suffice on most patients

Providing data to the patient a) Only Axial dataset in the correct kernel & reformatted in 1mm slices needed. A typical set is 150-200 slices b) Decompressed datasets preferred. c) DICOM reader and additional datasets are not needed, but may be included as per normal site protocols d) Two identical disks should be provided to the patient. Verification of these parameters will occur after the treating site receives the disk from the patient. This may take a few weeks. If possible, please DO NOT DELETE ORIGINAL / RAW DATA from the modality until the image set has been verified, such as to allow for reprocessing if necessary

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

HEAD ESSENTIAL TREMOR/NEURAVIVE PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set					**CD Data Set**		
Kernel	J37s Med Smooth	J37s Med Smooth	H60s Sharp FR		Algorithm	Bone Plus	
Window	Cerebrum	Cerebrum	Cranial Bone		Window Width/ Level	3000/800	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	2.5	
Slice Thickness (mm)	3	3	1		Slice Increment (mm)	2.5	
Slice Increment (mm)	3	3	1		Type	Full	
Axial Brain ST					ASIR	None	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		**ST**		
Window	Cerebrum	Cerebrum	Cerebrum		Algorithm	Standard	
SAFIRE/ADMIRE	0	0	2		Window Width/ Level	80/35	
Slice Thickness (mm)	3	3	3		Slice Thickness (mm)	2.5	
Slice Increment (mm)	3	3	3		Slice Increment (mm)	2.5	
					Type	Full	
					ASIR	SS30	
					Recon 2 Trauma Reformat		
					Algorithm	STND	
					Window Width/ Level	100/50	
					Slice Thickness (mm)	1.25	
					Slice Increment (mm)	0.625	
					Type	Full	
					ASIR	None	

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

HEAD FRAME LINK - Revised-1/24/2018

CTDI: ~45 mGy

Setup:

- Head first supine, PA/Lateral scout from below the skull base through the top of the skull,
  - **Only use the flat sponge**, No Gantry Tilt

Scan Parameters:

- Begin Below skull base and extend through the top of the skull

DFOV:

- 25-32 cm DFOV is used for the CD Data set. Include the entire nose and ears
- 20 cm DFOV is used for all other series

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- Topogram
- CD Data Set
  - 1x1 (1.25 x 1.25) Axial Soft Tissue 25-32cm DFOV
- 3 x 3 Axial ST 20cm DFOV
- 3 x 3 Axial ST 20cm DFOV
- Patient Protocol/Dose Report

Scan range

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

HEAD FRAME LINK PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set					**Recon 1 Brain**		
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		Algorithm	Standard	
Window	Cerebrum	Cerebrum	Cerebrum		Window Width/ Level	80/35	
SAFIRE/ADMIRE	0	0	2		Slice Thickness (mm)	2.5	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	2.5	
Slice Increment (mm)	1	1	1		Type	Full	
Axial Brain					ASIR	SS30	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		**Recon 2 Bone**		
Window	Cerebrum	Cerebrum	Cerebrum		Algorithm	Bone	
SAFIRE/ADMIRE	0	0	2		Window Width/ Level	3000/800	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
Bone Axial/Cor/Sag					Type	Full	
Kernel	J80s Very Sharp	J70h Very Sharp	J70h Very Sharp		ASIR	SS20	
Window	Cranial Bone	Cranial Bone	Cranial Bone		**Recon 2 Trauma Reformat**		
SAFIRE/ADMIRE	0	0	1		Algorithm	STND	
Slice Thickness (mm)	1	1	1		Window Width/ Level	100/50	
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	1.25	
					Slice Increment (mm)	0.625	
					Type	Full	
					ASIR	None	

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

HEAD STEALTH - Revised-3/26/2019

CTDI: ~10-20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Head first supine , lateral scout from below the chin through the top of the skull
- Patient positioned so that the IOML is perpendicular to the table top
    - **Only use the flat sponge**

Scan Parameters:

- Scan range should begin below the chin and extend through the top of the skull
- DFOV
    - 25-30 cm DFOV is used for the CD Data set. Include the entire nose and ears
    - 18-25 cm DFOV is used for all other series

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- Topogram
- CD Data Set
    - 1x1 Axial Soft Tissue 25cm DFOV
- 1 x 1 Axial Bone
- 1 x 1 Coronal Bone
- 1 x 1 Sagittal Bone
- Patient Protocol/Dose Report

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

HEAD STEALTH PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5
Pitch	0.55	1	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	off	off	off		Scan FOV	Large
Quality ref mAs	190	225	275		Auto mA range	100-500
kVp	130				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CD Data Set					**CD Data Set**	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		Algorithm	Standard
Window	Cerebrum	Cerebrum	Cerebrum		Window Width/ Level	80/40
SAFIRE/ADMIRE	0	0	2		Slice Thickness (mm)	1.25
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	1.25
Slice Increment (mm)	1	1	1		Type	Full
Axial Brain					ASIR	SS10
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		**Axial Bone**	
Window	Cerebrum	Cerebrum	Cerebrum		Algorithm	Bone Plus
SAFIRE/ADMIRE	0	0	2		Window Width/ Level	1500/450
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Bone Axial/Cor/Sag					Type	Plus
Kernel	J80s Very Sharp	J70h Very Sharp	J70h Very Sharp		ASIR	None
Window	Cranial Bone	Cranial Bone	Cranial Bone		**Bone Reformat**	
SAFIRE/ADMIRE	0	0	1		Algorithm	Bone Plus
Slice Thickness (mm)	1	1	1		Window Width/ Level	1500/450
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	1.25
					Slice Increment (mm)	0.6
					Type	Plus
					ASIR	None

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

HEAD SYNTHES SCANNING PROTOCOL - Revised-5/29/2013

CTDI: ~55 mGy (do not exceed ACR recommended 75mGy)

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Head first supine , PA/Lateral scout from below the chin through the top of the skull
- Tilt the patients head so that a line connecting the lateral canthus of the eye and the EAC are perpendicular to the CT tabletop

Scan Parameters:

- Scan range should begin below the area of interest and extend through the top of the head

DFOV:

- To include the entire skull

PACS Series:

- Topogram
- CD Data Set
- ST Brain
- Bone
- Patient Protocol/Dose Report

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

HEAD SYNTHES PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set					**Recon 1 Brain**		
Kernel	J37s Med Smooth	J37s Med Smooth	H70h Med Smooth		Algorithm	Standard	
Window	Cerebrum	Cerebrum	Cranial Bone		Window Width/ Level	80/35	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	2.5	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	2.5	
Slice Increment (mm)	0.5	0.5	0.5		Type	Full	
Axial Brain					ASIR	SS10	
Kernel	J37s Med Smooth	J37s Med Smooth	J37s Med Smooth		**Recon 2 Bone**		
Window	Cerebrum	Cerebrum	Cerebrum		Algorithm	Bone Plus	
SAFIRE/ADMIRE	0	0	2		Window Width/ Level	1500/450	
Slice Thickness (mm)	3	3	3		Slice Thickness (mm)	2.5	
Slice Increment (mm)	3	3	3		Slice Increment (mm)	2.5	
Bone Axial/Cor/Sag					Type	Full	
Kernel	J80s Very Sharp	J70h Very Sharp	J70h Very Sharp		ASIR	None	
Window	Cranial bone	Cranial bone	Cranial Bone		**CD Data Set**		
SAFIRE/ADMIRE	0	0	1		Algorithm	Bone Plus	
Slice Thickness (mm)	3	3	3		Window Width/ Level	1500/450	
Slice Increment (mm)	3	3	3		Slice Thickness (mm)	1.25	
					Slice Increment (mm)	1.25	
					Type	Full	
					ASIR	None	

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

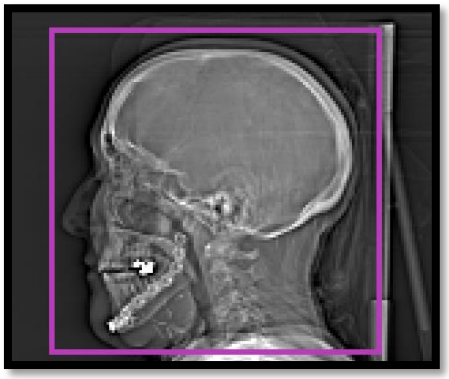
HEAD TRUMATCH - Revised-3/09/2020

CTDI: ~10-20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Head first supine, PA/Lateral scout from below the chin through the top of the skull
- Patient positioned so that the IOML is perpendicular to the table top
    - **Only use the flat sponge**, no straps



Scan Parameters:

- Scan range should begin below the chin and extend through the top of the skull
- NO GANTRY TILT
- Rotation of 1
- DFOV
    - 25 cm DFOV is used for the CD Data set.
    - 15-17 cm DFOV is used for all other series

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- Topogram
- 1x1 Axial Bone CD Data Set 25cm DFOV (1.25x1.25 for GE)
- 1x1 Axial ST (1.25x1.25 for GE)
- 1x1 Coronal/Sagittal Bone (1.25x1.25 for GE)
- 1x1 Coronal/Sagittal ST (1.25x1.25 for GE)
- 3D Tumble/Rotation
- Patient Protocol/Dose Report

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

HEAD TRUMATCH PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.8		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	19.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	275		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CD Data Set						
Kernel	J30s	J37sMedsmooth	J70h Very Sharp		**CD Data Set**	
Window	cerebrum	cerebrum	Osteo		Algorithm	Bone Plus
SAFIRE/ADMIRE	2	2	2		Window Width/ Level	4000/700
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Axial ST					Type	Full
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		ASIR	SS20
Window	cerebrum	Cerebrum	Cerebrum			
SAFIRE/ADMIRE	2	2	2		**ST Reformat**	
Slice Thickness (mm)	1	1	1		Algorithm	Standard
Slice Increment (mm)	1	1	1		Window Width/ Level	280/35
Cor/Sag Bone					Slice Thickness (mm)	0.625
Kernel	J30s	J37sMedsmooth	J70h Very Sharp		Slice Increment (mm)	0.625
Window	cerebrum	Cerebrum	Cranial Bone		Type	Full
SAFIRE/ADMIRE	1	1	1		ASIR	SS20
Slice Thickness (mm)	1	1	1			
Slice Increment (mm)	1	1	1		**Bone Reformat**	
Cor/Sag ST					Algorithm	Bone Plus
Kernel	J30s	J37sMedsmooth	J37s Med Smooth		Window Width/ Level	4000/700
Window	cerebrum	Cerebrum	Cerebrum		Slice Thickness (mm)	1.25
SAFIRE/ADMIRE	2	2	2		Slice Increment (mm)	0.625
Slice Thickness (mm)	1	1	1		Type	Plus
Slice Increment (mm)	1	1	1		ASIR	None
Reformat						
Kernel	J80s verysharp	J70h verysharp	J30s Med Smooth		**3D Reformat**	
Window	Cranial bone	Cranial bone	Cerebrum		Algorithm	Standard
SAFIRE/ADMIRE	2	2	2		Window Width/ Level	280/35
Slice Thickness (mm)	0.75	0.75	0.75		Slice Thickness (mm)	0.625
Slice Increment (mm)	0.3	0.3	0.3		Slice Increment (mm)	0.625

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

ADULT MAXILLOFACIAL- Revised-11/27/2018

CTDI: ~15 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Supine, PA/Lateral scout from below the mandible through the frontal sinuses

Scan parameters:

- Supine helical scan from below the mandible through the frontal sinuses
- 18 cm DFOV is preferred
- If the scan is performed with and without contrast, the bone reconstructions only need to be done on the post-contrast scan

Contrast:

At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- 1x1 Axial Bone
- 1x1 Axial Soft Tissue
- 1x1 Coronal Bone
- 1x1 Coronal Soft Tissue
- 1x1 Sagittal Bone
- 1x1 Sagittal Soft Tissue
- Patient Protocol/Dose Report

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MAXILLOFACIAL PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.8		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
ST Axial					**Recon Axial ST**		
Kernel	J37s Med Smooth	J37s Med Smooth	H31s Med Smooth		Algorithm	Standard	
Window	Cerebrum	Cerebrum	Sinuses		Window Width/ Level	350/40	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	1.25	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	1.25	
Slice Increment (mm)	1	1	1		Type	Full	
Bone Axial					ASIR	None	
Kernel	J80s Very Sharp	J70h Very Sharp	H70h Very Sharp		**Recon Bone**		
Window	Cranial bone	Cranial bone	Inner Ear		Algorithm	Bone Plus	
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	1500/450	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
ST Cor/Sag					Type	Full	
Kernel	J37s Med Smooth	J37s Med Smooth	H31s Med Smooth		ASIR	None	
Window	Cerebrum	Cerebrum	Sinuses		**Recon Reformat Bone**		
SAFIRE/ADMIRE	0	0	0		Algorithm	Bone Plus	
Slice Thickness (mm)	1	1	1		Window Width/ Level	1500/450	
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	0.625	
Bone Cor/Sag					Slice Increment (mm)	0.625	
Kernel	J80s Very Sharp	J70h Very Sharp	H70h Very Sharp		Type	Full	
Window	Cranial bone	Cranial bone	Inner Ear		ASIR	None	
SAFIRE/ADMIRE	0	0	0		**Recon Reformat ST**		
Slice Thickness (mm)	1	1	1		Algorithm	STND	
Slice Increment (mm)	1	1	1		Window Width/ Level	350/40	
					Slice Thickness (mm)	0.625	

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

ORBITS - Revised-4/16/2019

CTDI: ~15 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Supine, PA/Lateral scout from below the mandible through the frontal sinuses

Scan parameters:

- Supine helical scan from below the maxillary sinuses through the frontal sinuses
- 18 cm DFOV is preferred
- If the scan is performed with and without contrast, the bone reconstructions only need to be done on the post-contrast scan

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- 1x1 Axial Bone
- 1x1 Axial Soft Tissue
- 1x1 Coronal Bone
- 1x1 Coronal Soft Tissue
- 1x1 Sagittal Bone
- 1x1 Sagittal Soft Tissue
- Patient Protocol/Dose Report

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

ORBIT PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.8		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
ST Axial					**Recon Axial ST**		
Kernel	J37s Med Smooth	J37s Med Smooth	H31s Med Smooth		Algorithm	Standard	
Window	Cerebrum	Cerebrum	Sinuses		Window Width/ Level	280/35	
SAFIRE/ADMIRE	0	0	0		Slice Thickness (mm)	2.5	
Slice Thickness (mm)	1	1	1		Slice Increment (mm)	2.5	
Slice Increment (mm)	1	1	1		Type	Full	
Bone Axial					ASIR	SS20	
Kernel	J80s Very Sharp	J70h Very Sharp	H70h Very Sharp		**Axial Bone**		
Window	Cranial bone	Cranial bone	Inner Ear		Algorithm	Bone Plus	
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	1500/450	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
ST Cor/Sag					Type	Full	
Kernel	J37s Med Smooth	J37s Med Smooth	H31s Med Smooth		ASIR	None	
Window	Cerebrum	Cerebrum	Sinuses		**Recon Reformat Bone**		
SAFIRE/ADMIRE	0	0	0		Algorithm	Bone Plus	
Slice Thickness (mm)	1	1	1		Window Width/ Level	1500/450	
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	0.625	
Bone Cor/Sag					Slice Increment (mm)	0.625	
Kernel	J80s Very Sharp	J70h Very Sharp	H70h Very Sharp		Type	Full	
Window	Cranial bone	Cranial bone	Inner Ear		ASIR	None	
SAFIRE/ADMIRE	0	0	0		**Recon Reformat ST**		
Slice Thickness (mm)	1	1	1		Algorithm	STND	
Slice Increment (mm)	1	1	1		Window Width/ Level	280/35	
					Slice Thickness (mm)	0.625	

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

SACRUM/COCCYX - Revised-4/16/2019

CTDI: ~15-30 mGy

Setup:

- Scout from below the coccyx through L1 with the patients arms raised above their head

Scan Parameters:

- Scan from below the coccyx to L4
- DFOV should include SI joints
- For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help maintain image quality http://www.nhlbisupport.com/bmi/bminojs.htm

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

PACS Series:

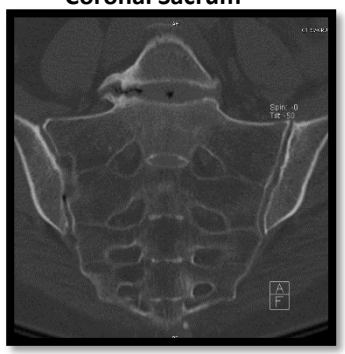
- 2x2 Axial Sacrum Soft Tissue
- 2x2 Axial Sacrum Bone
- 2X2 Sagittal Sacrum
- 2x2 Coronal Sacrum
- Patient Protocol/Dose Report

Axial Soft Tissue

Axial Bone

Sagittal Sacrum

Coronal Sacrum



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

SACRUM/COCCYX PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST							
Kernel	J30s	J37sMedsmooth	I41s Medium		**Recon 1 Sacrum/Coccyx**		
Window	cerebrum	cerebrum	Spine		Algorithm	Standard	
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5	
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Osteo				
SAFIRE/ADMIRE	2	2	0		**Recon Bone**		
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus	
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450	
Reformat					Slice Thickness (mm)	2.5	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Slice Increment (mm)	2.5	
Window	cerebrum	Cerebrum	Osteo		Type	Full	
SAFIRE/ADMIRE	2	2	0		ASIR	None	
Slice Thickness (mm)	0.75	0.75	0.6				
Slice Increment (mm)	0.5	0.5	0.6		**Reformat**		
Cor/Sag					Algorithm	Detail	
Kernel	J80s verysharp	J70h verysharp	I50s Med Sharp		Window Width/ Level	1500/450	
Window	Cranial bone	Cranial bone	Osteo		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	2	2	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	2	2	2		Type	Plus	
Slice Increment (mm)	2	2	2		ASIR	None	

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

SELLA/PITUITARY – Revised-5/16/2024

CTDI: ~45mGy

Not to exceed the ACR recommended dose of 75 mGy

Setup:

- Supine, PA/Lateral scout from below the maxillary sinuses through the frontal sinuses

Scan parameters:

- Supine helical scan from below the maxillary sinuses through the frontal sinuses
- 15 cm DFOV is preferred
- If the scan is performed with and without contrast, the bone reconstructions only need to be done on the post-contrast scan, axial, coronal and sagittal soft tissue on **both** pre and post contrast

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350-370 mg iodine/ml non-ionic contrast @ 4 ml/sec with a 25 second delay
- See IV Catheter Guidelines

PACS Series:

- 2x2 Axial Soft Tissue
- 2x2 Axial Bone
- 2x2 Soft tissue Coronal
- 2x2 Soft Tissue Sagittal
- Patient Protocol/Dose Report

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

SELLA/PITUITARY PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5
Pitch	0.55	1	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	off	off	off		Scan FOV	Large
Quality ref mAs	190	225	225		Auto mA range	100-500
kVp	130				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
ST Axial					**Axial ST**	
Kernel	J37s Med Smooth	J37s Med Smooth	J30s Med Smooth		Algorithm	Standard
Window	Cerebrum	Cerebrum	Cerebrum		Window Width/ Level	280/35
SAFIRE/ADMIRE	2	2	2		Slice Thickness (mm)	2.5
Slice Thickness (mm)	2	2	2		Slice Increment (mm)	2.5
Slice Increment (mm)	2	2	2		Type	Full
Bone Axial					ASIR	SS10
Kernel	J80s Very Sharp	J70h Very Sharp	H70h Very Sharp		**Recon Bone**	
Window	Cranial bone	Cranial bone	Cranial Bone		Algorithm	Bone Plus
SAFIRE/ADMIRE	0	0	0		Window Width/ Level	1500/450
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5
ST Cor/Sag					Type	Full
Kernel	J37s Med Smooth	J37s Med Smooth	J30s Med Smooth		ASIR	None
Window	Cerebrum	Cerebrum	Cerebrum		**Recon Reformat Bone**	
SAFIRE/ADMIRE	2	2	2		Algorithm	Bone Plus
Slice Thickness (mm)	2	2	2		Window Width/ Level	1500/450
Slice Increment (mm)	2	2	2		Slice Thickness (mm)	0.625
					Slice Increment (mm)	0.625
					Type	Full
					ASIR	None
					Recon Reformat ST	
					Algorithm	STND
					Window Width/ Level	280/35
					Slice Thickness (mm)	1.25

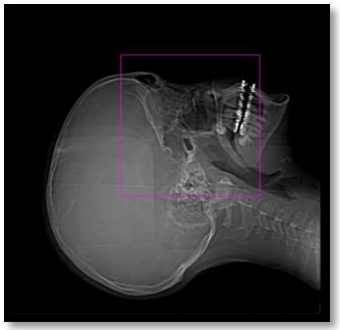
**Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

SINUS COMPLETE – Revised-8/21/2024

CTDI: ~15- 20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:



- Supine, Lateral/PA Scout, No gantry angle
- Scout from below mandible through the frontal sinuses
- Supine helical scan to include entire paranasal sinuses parallel to the hard palate, inclusive of the upper teeth

Scan Parameters:

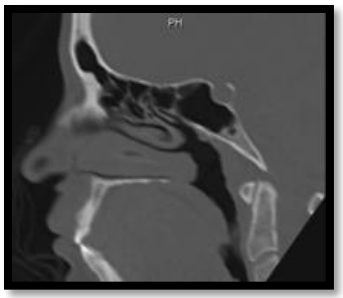
- 15cm DFOV Preferred
- Supine helical scan from below upper teeth through frontal sinus
- Only perform the bone reconstructions on the post contrast scan if the exam is performed without and with IV contrast

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

**For Sagittal Reconstruction the radiologists request to be parallel to hard palate- see image

PACS Series:



- Scout/Topogram
- 1x1 Axial Bone
- 1x1 Axial ST
- 1x1 Coronal Bone
- 1x1 Coronal ST
- 1x1 Sagittal Bone
- 1x1 Sagittal ST
- Patient Protocol/Dose Report

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

SINUS COMPLETE PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.8		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST							
Kernel	J30s	J37sMedsmooth	H31s Medsmooth		**Coronal Sinus**		
Window	cerebrum	cerebrum	Sinuses		Algorithm	Bone Plus	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	4000/700	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	0.625	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	H70h Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Inner Ear				
SAFIRE/ADMIRE	2	0	0		**Coronal ST**		
Slice Thickness (mm)	1	1	1		Algorithm	Standard	
Slice Increment (mm)	1	1	1		Window Width/ Level	280/35	
Cor/Sag ST					Slice Thickness (mm)	1.25	
Kernel	J30s	J37sMedsmooth	H31s Medsmooth		Slice Increment (mm)	0.625	
Window	cerebrum	cerebrum	Sinuses		Type	Plus	
SAFIRE/ADMIRE	2	0	0		ASIR	SS20	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	1	1	1				
Cor/Sag Bone							
Kernel	J80s verysharp	J70h verysharp	H70h Very Sharp				
Window	Cranial bone	Cranial bone	Inner Ear				
SAFIRE/ADMIRE	2	0	0				
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	1	1	1				

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

SINUS IMAGE GUIDED (IGS)/MEDTRONIC-STRYKER - Revised-11/09/2017

CTDI: ~10-20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Head first supine , lateral scout from below the mandible through the top of the skull,
  - **Only use the flat sponge**

Scan Parameters:

- For **IGS Sinuses the Scan range** should begin below the teeth and extend through the entire frontal sinuses
- For **Medtronic and Stryker Sinuses Scan range** should begin below the teeth and extend through the top of the skull
- DFOV
  - 25-30 cm DFOV is used for the CD Data set. Include the entire nose and ears
  - 15 cm DFOV is used for all other series

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

No piercings allowed due to surgical computer/robot limitations in reading images if metal is present

PACS Series:

Topogram

- CD Data Set
  - 1x1 Axial Soft Tissue 25cm DFOV
- 1 x 1 Axial Bone 15cm DFOV
- 1 x 1 Coronal Bone 15cm DFOV
- 1 x 1 Sagittal Bone 15cm DFOV
- 1 x 1 Axial ST 15cm DFOV
- 1 x 1 Coronal ST 15cm DFOV
- 1 x 1 Sagittal ST 15cm DFOV
- Patient Protocol/Dose Report

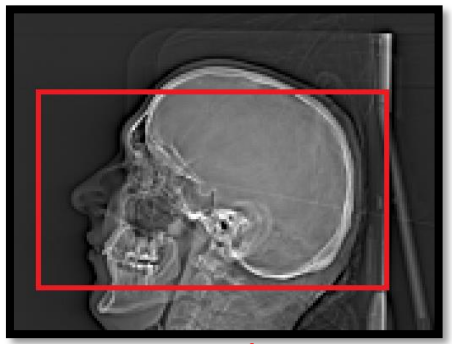
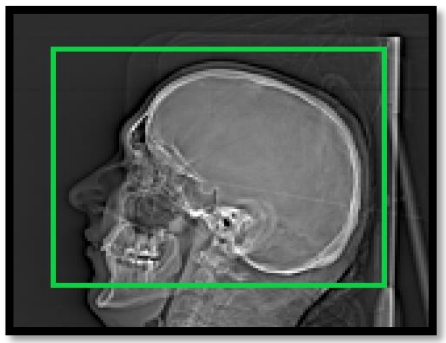


Image Guided Sinus/IGS Scan Range



Medtronic/Stryker Scan range

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

SINUS IMAGE GUIDED/MEDTRONIC/STRYKER PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.8		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
CD Data Set						
Kernel	J30s	J37sMedsmooth	H31s Medsmooth		**Sinus IGS Data Set**	
Window	cerebrum	cerebrum	Sinuses		Algorithm	Standard
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	280/35
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Axial Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	H70h Very Sharp		ASIR	SS20
Window	Cranial bone	Cranial bone	Inner Ear			
SAFIRE/ADMIRE	2	0	0		**ST Reformat**	
Slice Thickness (mm)	1	1	1		Algorithm	Standard
Slice Increment (mm)	1	1	1		Window Width/ Level	280/35
Cor/Sag ST					Slice Thickness (mm)	0.625
Kernel	J30s	J37sMedsmooth	H31s Medsmooth		Slice Increment (mm)	0.625
Window	cerebrum	cerebrum	Sinuses		Type	Plus
SAFIRE/ADMIRE	2	0	0		ASIR	SS20
Slice Thickness (mm)	1	1	1			
Slice Increment (mm)	1	1	1		**Bone Reformat**	
Cor/Sag Bone					Algorithm	Bone Plus
Kernel	J80s verysharp	J70h verysharp	H70h Very Sharp		Window Width/ Level	4000/700
Window	Cranial bone	Cranial bone	Inner Ear		Slice Thickness (mm)	0.625
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625
Slice Thickness (mm)	1	1	1		Type	Plus
Slice Increment (mm)	1	1	1		ASIR	None

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

SINUS LIMITED - Revised-11/09/2017

CTDI: ~5-15mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Head first prone, lateral scout to include the entire nose and extend beyond the EAM

Scan Parameters:

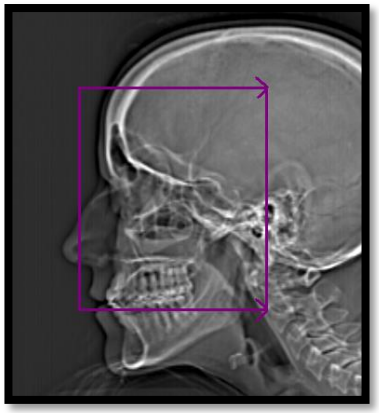
- Scan starts anterior to the tip of the nose and extends through the adenoids
- 15 cm DFOV is Preferred

Contrast:

- At the discretion of the radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series:

- Scout/Topogram
- 3x3Coronal Bone
- 3x3Coronal ST
- Patient Protocol/Dose Report



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

SINUS LIMITED PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.8		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110	100	100		kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Coronal ST						
Kernel	J30s	J37sMedsmooth	H31s Medsmooth		**Coronal Sinus**	
Window	cerebrum	cerebrum	Sinuses		Algorithm	Bone Plus
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	4000/700
Slice Thickness (mm)	3	3	3		Slice Thickness (mm)	1.25
Slice Increment (mm)	3	3	3		Slice Increment (mm)	0.625
Coronal Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	H70h Very Sharp		ASIR	SS10
Window	Cranial bone	Cranial bone	Inner Ear			
SAFIRE/ADMIRE	2	0	0		**Coronal ST**	
Slice Thickness (mm)	3	3	3		Algorithm	Standard
Slice Increment (mm)	3	3	3		Window Width/ Level	280/35
					Slice Thickness (mm)	1.25
					Slice Increment (mm)	0.625
					Type	Plus
					ASIR	SS10

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

SOFT TISSUE NECK - Revised- 4/16/2019

CTDI: ~5-25 mGy

Setup:

- *Place skin marker on any mass or region of interest*
- Supine, PA/Lateral scout from above the orbital roof to below the aortic arch

Patient Positioning:

- Retract shoulders as much as possible and tilt the patient's head so that a line connecting the lateral canthus of the eye and the EAC is perpendicular to the CT tabletop

DFOV: Preferred 22 cm (Range 17-24 cm)

Scan Parameters:

1. Non-Contrast scan will be performed at the discretion of the radiologist
2. Perform post contrast acquisition from above the orbital roof to below the aortic arch ***with the patient instructed not to swallow***
3. ***A dental tilt*** scan should be acquired if the patient presents with obstructive dentition

Contrast:

- at the discretion of the Radiologist
- Injection volume of 50-150 ml of 350 mg iodine/ml non-ionic contrast @ a rate of 2ml/sec, not to exceed a total volume of 150cc for a single exam
- Scan delay 90 seconds after the start of contrast

4.

PT weight in LBS	Volume of contrast
1-50	1 cc/lb
51-100	50cc
101-210	75cc
211-300	100cc
301-400	125cc
>401	150cc

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

PACS Series:

1. 3x3 (2.5 x 2.5) Axial Soft Tissue
2. 3x3 (2.5 x 2.5) Axial Bone
3. 3x3 (2.5 x 2.5) Coronal Soft Tissue
4. 3x3 (2.5 x 2.5) Sagittal Soft Tissue
5. 2x2 (2.5 x 2.5) Axial Oblique Vocal Cord
    - **If the patient presents with a diagnosis or indication of hoarseness, vocal cord paralysis, or dysphonia an additional axial reconstruction will be performed. The Axial Oblique Vocal Cord reconstruction should be parallel to the cervical spine disc space and extend from the hyoid through the bottom of the cricoid**
6. 3x3 (2.5 x 2.5) Dental Tilt
7. Patient Protocol/Dose Report

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SOFT TISSUE NECK PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	0.5		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.5		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST							
Kernel	J30s	J37sMedsmooth	I41f Medium		**Axial ST**		
Window	cerebrum	cerebrum	Larynx		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	3	3	3		Slice Thickness (mm)	2.5	
Slice Increment (mm)	3	3	3		Slice Increment (mm)	2.5	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	I70f Very Sharp AS		ASIR	SS20	
Window	Cranial bone	Cranial bone	Cranial Bone				
SAFIRE/ADMIRE	2	0	0		**Bone**		
Slice Thickness (mm)	3	3	3		Algorithm	Bone Plus	
Slice Increment (mm)	3	3	3		Window Width/ Level	1500/450	
Cor/Sag ST					Slice Thickness (mm)	2.5	
Kernel	J30s	J37sMedsmooth	I41f Medium		Slice Increment (mm)	2.5	
Window	cerebrum	cerebrum	Larynx		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	3	3	3				
Slice Increment (mm)	3	3	3		**Reformat**		
Dental					Algorithm	Standard	
Kernel	J80s verysharp	J70h verysharp	I41f Medium		Window Width/ Level	350/40	
Window	Cranial bone	Cranial bone	Larynx		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	3	3	3		Type	Plus	
Slice Increment (mm)	3	3	3		ASIR	SS20	

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

4D NECK FOR PARATHYROID EVALUATION - Revised-9/11/2025

MID, RCP, KYLE ONLY

DFOV: Preferred 20cm (Range 19-21cm)

Scan Parameters: Images to be obtained from carina through the bottom of the mandibular teeth while patient breathes normally

- Non-contrast
- 25 Second Scan (after start of injection)
- 50 Second Scan (after start of injection)
- 80 Second Scan (after start of injection)
- 110 Second Scan (after start of injection)

Contrast:

- At the discretion of the Radiologist inject 120 ml of omnipaque 350 mg iodine/ml non-ionic contrast @ 4 ml/sec
- See IV Catheter Guidelines

PACS Series:

- Non-Contrast Axial, Coronal & Sagittal 1x1
- 25 Second Axial, Coronal & Sagittal 1x1
- 50 Second Axial, Coronal & Sagittal 1x1
- 80 Second Axial, Coronal & Sagittal 1x1
- 110 Second Axial, Coronal & Sagittal 1x1
- Patient Protocol/Dose Report

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

4D NECK PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	0.5		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.8		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Axial ST						
Kernel	J30s	J37sMedsmooth	I41f Medium		**Axial**	
Window	cerebrum	cerebrum	Larynx		Algorithm	Standard
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40
Slice Thickness (mm)	1	3	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	3	1		Slice Increment (mm)	1.25
Coronal					Type	Full
Kernel	J80s verysharp	J70h verysharp	I31f Med Smooth		ASIR	SS20
Window	Cranial bone	Cranial bone	Larynx			
SAFIRE/ADMIRE	2	0	0		**Reformat**	
Slice Thickness (mm)	1	3	1		Algorithm	Standard
Slice Increment (mm)	1	3	1		Window Width/ Level	350/40
Sagittal					Slice Thickness (mm)	1.25
Kernel	J30s	J37sMedsmooth	I41f Medium		Slice Increment (mm)	0.625
Window	cerebrum	Cerebrum	Larynx		Type	Plus
SAFIRE/ADMIRE	2	0	0		ASIR	SS20
Slice Thickness (mm)	3	3	1			
Slice Increment (mm)	3	3	1			

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

SPINE – CERVICAL - Revised-06/26/2025

CTDI: 15-30 mGy

Setup:

- Do not flex or extend the neck if there has been recent spine trauma or if the patient is in a cervical collar
- Retract shoulders as much as possible
- Scout from T3 through the skull base

Scan Parameters:

- Scan from just below T1 Through the entire cervical spine
- Preferred DFOV is 12 cm

Contrast: At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second scan delay

- See IV Catheter Guidelines

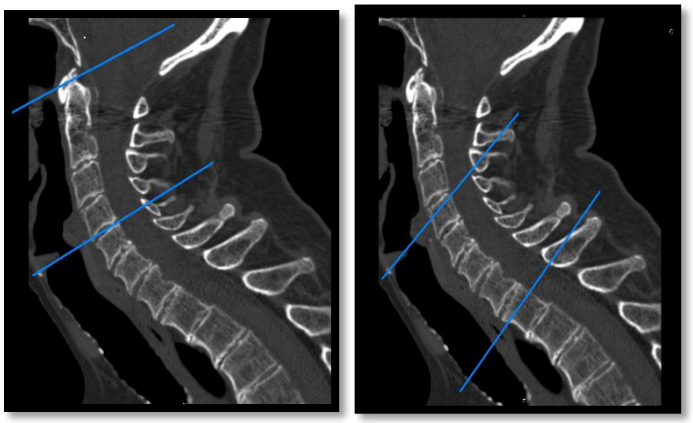
Reformats:

- Oblique Axial images should be reformatted when the spine is not in plane during the initial acquisition. Images below are an example of the correct plane for reformatting oblique axial images when the spine is not in the true axial plane during acquisition

PACS Series:

- 1x1 Axial Cervical Soft Tissue
- 1x1 Axial Cervical Bone
- 1x1 Coronal/Sagittal Bone
- 1x1 Sagittal ST
- 1x1 RT/LT Obliques
- 1x1 Oblique Axial(s) As needed
- Patient Protocol/Dose Report

For all spines with hardware-please send Reformat set to Terarecon



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

SPINE - CERVICAL PROTOCOL

Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.65		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST/Sagittal ST							
Kernel	J30s	J37sMedsmooth	I41s Medium		**Cervical**		
Window	cerebrum	cerebrum	Spine		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Osteo				
SAFIRE/ADMIRE	2	0	0		**Bone**		
Slice Thickness (mm)	1	1	1		Algorithm	Bone Plus	
Slice Increment (mm)	1	1	1		Window Width/ Level	1500/450	
Reformat					Slice Thickness (mm)	1.25	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Slice Increment (mm)	1.25	
Window	cerebrum	Cerebrum	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	0.75	0.75	0.75				
Slice Increment (mm)	0.5	0.5	0.5		**Reformat**		
Cor/Sag/Obl					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	0.625	
SAFIRE/ADMIRE	2	0	1		Slice Increment (mm)	0.625	
Slice Thickness (mm)	1	1	1		Type	Plus	
Slice Increment (mm)	1	1	1		ASIR	None	

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

SPINE - THORACIC - Revised-06/26/2025

CTDI: ~15-30 mGy

Setup:

- Post Myelography patients must be rolled 360 degrees to help evenly distribute spinal contrast
- Scout from S2 through the mid cervical spine with the patient's arms raised above their head

Scan Parameters:

- Scan from L1 to C6
- Preferred DFOV of 17 cm
- For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help to maintain image quality http://www.nhlbisupport.com/bmi/bminojs.htm

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

PACS Series:

- 2x2 Axial Thoracic Soft Tissue
- 2x2 Axial Thoracic Bone
- 2X2 Sagittal Thoracic Spine
- 2X2 Sagittal ST Thoracic Spine
- 2x2 Coronal Thoracic Spine
- Patient Protocol/Dose Report

For all spines with hardware-please send Reformat set to Terarecon

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

SPINE - THORACIC PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST/Sagittal ST							
Kernel	J30s	J37sMedsmooth	I41s Medium		**Axial ST**		
Window	cerebrum	cerebrum	Spine		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5	
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Osteo				
SAFIRE/ADMIRE	2	0	0		**Bone**		
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus	
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450	
Reformat					Slice Thickness (mm)	2.5	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Slice Increment (mm)	2.5	
Window	cerebrum	Cerebrum	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	0.7	0.7	0.7		**Reformat**		
Cor/Sag					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	2	2	2		Type	Plus	
Slice Increment (mm)	2	2	2		ASIR	None	

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

SPINE – LUMBAR - Revised- 06/26/2025

CTDI: ~15-30 mGy

Setup:

- Post Myelography patients must be rolled 360 degrees to help evenly distribute spinal contrast
- Scout from S2 through T8 with the patients arms raised above their head

Scan Parameters:

- Scan from S2 through the mid body of T12
- Preferred DFOV of 17 cm
- For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help maintain image quality http://www.nhlbisupport.com/bmi/bminojs.htm

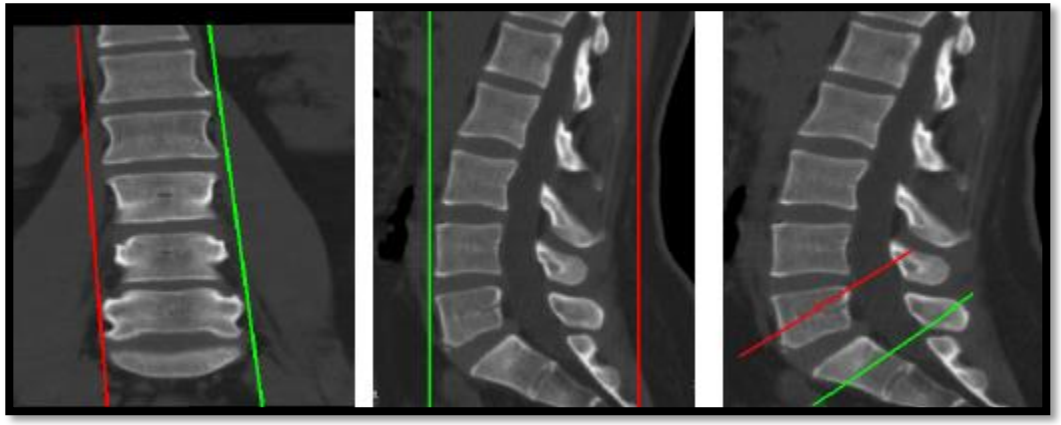
Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

PACS Series:

- 2x2 Axial Lumbar Soft Tissue
- 2x2 Axial Lumbar Bone
- 2X2 Sagittal Lumbar Spine
- 2X2 Sagittal ST Lumbar Spine
- 2x2 Coronal Lumbar Spine
- 2x2 Axial Oblique 1
- Patient Protocol/Dose Report

Sagittal Range | Coronal Range | Axial Oblique 1



Recon LT to RT | Recon Ant to Post | Recon caudal cranial

For all spines with hardware-please send Reformat set to Terarecon

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

SPINE - LUMBAR PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST/Sagittal ST							
Kernel	J30s	J37sMedsmooth	I41s Medium		**Axial ST**		
Window	cerebrum	cerebrum	Spine		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5	
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Osteo				
SAFIRE/ADMIRE	2	0	0		**Bone**		
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus	
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450	
Reformat					Slice Thickness (mm)	2.5	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Slice Increment (mm)	2.5	
Window	cerebrum	Cerebrum	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	0.7	0.7	0.7		**Reformat**		
Cor/Sag/Obl					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	2	2	2		Type	Plus	
Slice Increment (mm)	2	2	2		ASIR	None	

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

SPINE GECK - Revised-6/10/2019

CTDI: ~15-30 mGy

Setup:

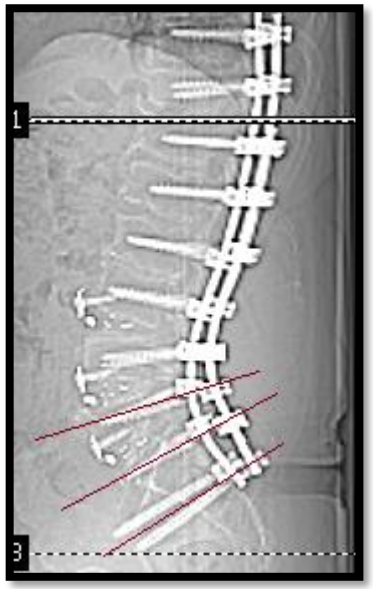
- Post Myelography patients must be rolled 360 degrees to help evenly distribute spinal contrast
- Scout with the patients arms raised above their head or down by side for cervical only

Scan Parameters:

- Preferred DFOV of 17 cm
- For Adults use MAS greater than 400
- **For lumbar axial oblique imaging of the lower three screws should be scanned and NOT reformatted** see image below
- For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help maintain image quality http://www.nhlbisupport.com/bmi/bminojs.htm

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines



PACS Series:

- 2x2 Lumbar/Thoracic or 1x1 Cervical Axial ST
- 2x2 Lumbar/Thoracic or 1x1 Cervical Axial Bone
- 2x2 Lumbar/Thoracic or 1x1 Cervical Coronal Spine
- 2x2 Lumbar/Thoracic or 1x1 Cervical Sagittal Spine
- 1x1 Cervical RT/LT Oblique
- Curved Coronal/Sagittal
- 3D Hardware if Applicable
- Patient Protocol/Dose Report

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

CERVICAL SPINE GECK PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	140		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Axial ST						
Kernel	J30s	J37sMedsmooth	I41s Medium		**Cervical**	
Window	cerebrum	cerebrum	Spine		Algorithm	Standard
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Axial Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10
Window	Cranial bone	Cranial bone	Osteo			
SAFIRE/ADMIRE	2	0	0		**Bone**	
Slice Thickness (mm)	1	1	1		Algorithm	Bone Plus
Slice Increment (mm)	1	1	1		Window Width/ Level	1500/450
Reformat					Slice Thickness (mm)	1.25
Kernel	J30s	J37sMedsmooth	B30s Med Smooth		Slice Increment (mm)	1.25
Window	cerebrum	Cerebrum	Osteo		Type	Full
SAFIRE/ADMIRE	2	0	0		ASIR	None
Slice Thickness (mm)	1	1	0.75			
Slice Increment (mm)	0.7	0.7	0.5		**Reformat**	
Cor/Sag/Obl					Algorithm	Detail
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	0.625
SAFIRE/ADMIRE	2	0	1		Slice Increment (mm)	0.625
Slice Thickness (mm)	1	1	1		Type	Plus
Slice Increment (mm)	1	1	1		ASIR	None

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

THORACIC/LUMBAR SPINE GECK PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.55		Pitch	0.969:1
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	140		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Axial ST						
Kernel	J30s	J37sMedsmooth	I41s Medium		**Axial ST**	
Window	cerebrum	cerebrum	Spine		Algorithm	Standard
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5
Axial Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10
Window	Cranial bone	Cranial bone	Osteo			
SAFIRE/ADMIRE	2	0	0		**Bone**	
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450
Reformat					Slice Thickness (mm)	2.5
Kernel	J30s	J37sMedsmooth	B30s Med Smooth		Slice Increment (mm)	2.5
Window	cerebrum	Cerebrum	Osteo		Type	Full
SAFIRE/ADMIRE	2	0	0		ASIR	None
Slice Thickness (mm)	1	1	1			
Slice Increment (mm)	0.7	0.7	0.7		**Reformat**	
Cor/Sag/Obl					Algorithm	Detail
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	1.25
SAFIRE/ADMIRE	2	0	1		Slice Increment (mm)	0.625
Slice Thickness (mm)	2	2	2		Type	Plus
Slice Increment (mm)	2	2	2		ASIR	None

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

SPINE MAZOR - Revised-06/26/2025

CTDI: ~15-30 mGy

Setup:

- This protocol is dedicated to CT scanning of the Spine, for the region prescribed by the surgeon for each specific case.
- Scout from above area of interest through area of interest

Scan Parameters:

- Scan from above area of interest to below area of interest indicated on referral. Scans need to be completed as one continuous scan. (ex: thoracolumbar case)
- Imaging **must** include contiguous scan through pelvis to the level of the trochanters
- Preferred 200 mm DFOV for CD Data Set (maximum allowed DFOV of 250 mm). Remaining reconstructions preferred DFOV of 12 - 17 cm
- kVp and mAs - according to human size:

    a. Pediatric: 120kv / 110 mAs

    b. Adult: 130kv/130mAs

    c. BMI 35-40: 140kv / 200 mAs

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

PACS Series:

- Axial Bone
- Axial Soft Tissue
- Coronal
- Sagittal Bone
- Sagittal ST
- Axial Oblique (Lumbar only)
- Right and Left Oblique (Cervical only)
- 1x1 Axial Bone (CD Data Set)
- Patient Protocol/Dose Report

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

CERVICAL SPINE MAZOR PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	140		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set							
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		**Axial ST**		
Window	Cranial bone	Cranial bone	Osteo		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	1	1	0.75		Slice Thickness (mm)	1.25	
Slice Increment (mm)	0.7	0.7	0.5		Slice Increment (mm)	1.25	
Axial ST/Sagittal ST					Type	Full	
Kernel	J30s	J37sMedsmooth	I41s Medium		ASIR	SS10	
Window	cerebrum	cerebrum	Spine				
SAFIRE/ADMIRE	2	0	2		**Bone**		
Slice Thickness (mm)	1	1	1		Algorithm	Bone Plus	
Slice Increment (mm)	1	1	1		Window Width/ Level	1500/450	
Axial Bone					Slice Thickness (mm)	1.25	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		Slice Increment (mm)	1.25	
Window	Cranial bone	Cranial bone	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	1	1	1		**Reformat**		
Reformat					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	0.625	
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	1	1	0.75		Type	Plus	
Slice Increment (mm)	0.7	0.7	0.5		ASIR	None	
Cor/Sag/Obl							
Kernel	J30s	J37sMedsmooth	I50s Med Sharp				
Window	cerebrum	Cerebrum	Osteo				
SAFIRE/ADMIRE	2	0	1				
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	1	1	1				

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

THORACIC/LUMBAR SPINE MAZOR PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	140		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set							
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		**Axial ST**		
Window	Cranial bone	Cranial bone	Osteo		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	350/40	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
Axial ST					Type	Full	
Kernel	J30s	J37sMedsmooth	I41s Medium		ASIR	SS10	
Window	cerebrum	cerebrum	Spine				
SAFIRE/ADMIRE	2	0	2		**Bone**		
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus	
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450	
Axial Bone					Slice Thickness (mm)	2.5	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		Slice Increment (mm)	2.5	
Window	Cranial bone	Cranial bone	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	2	2	2				
Slice Increment (mm)	2	2	2		**Reformat**		
Reformat					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	B50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	1.25	
SAFIRE/ADMIRE	2	0	0		Slice Increment (mm)	0.625	
Slice Thickness (mm)	1	1	1		Type	Plus	
Slice Increment (mm)	0.7	0.7	1		ASIR	None	
Cor/Sag/Obl							
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		**3D if needed**		
Window	cerebrum	Cerebrum	Osteo		Algorithm	Soft	
SAFIRE/ADMIRE	2	0	1		Window Width/ Level	400/35	
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	1.25	
Slice Increment (mm)	2	2	2		Slice Increment (mm)	0.625	

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

SPINE STEALTH/STRYKER - Revised- 6/26/2025

CTDI: ~15-30 mGy

Setup:

- Scout from below the area of interest through the area of interest with the patients arms raised above their head

Scan Parameters:

- Scan from below the area of interest through the area of interest
- Preferred DFOV of 17 cm
- For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help to maintain image quality http://www.nhlbisupport.com/bmi/bminojs.htm

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay
- See IV Catheter Guidelines

PACS Series:

- 2x2 Axial Soft Tissue (CD DATA SET)
- 2x2 Axial Bone
- 2X2 Sagittal Spine
- 2X2 Sagittal ST
- 2x2 Coronal Spine
- Patient Protocol/Dose Report

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

SPINE STEALTH/STRYKER PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	140		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial ST							
Kernel	J30s	J37sMedsmooth	I41s Medium		**CD Data Set**		
Window	cerebrum	cerebrum	Spine		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	350/40	
Slice Thickness (mm)	2	2	2		Slice Thickness (mm)	2.5	
Slice Increment (mm)	2	2	2		Slice Increment (mm)	2.5	
CD Data Set/Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	B70s Very Sharp		ASIR	SS10	
Window	Cranial bone	Cranial bone	Osteo				
SAFIRE/ADMIRE	2	0	0		**Bone**		
Slice Thickness (mm)	2	2	2		Algorithm	Bone Plus	
Slice Increment (mm)	2	2	2		Window Width/ Level	1500/450	
Reformat					Slice Thickness (mm)	2.5	
Kernel	J30s	J37sMedsmooth	B70s Very Sharp		Slice Increment (mm)	2.5	
Window	cerebrum	Cerebrum	Osteo		Type	Full	
SAFIRE/ADMIRE	2	0	0		ASIR	None	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	0.7	0.7	0.7		**Reformat**		
Cor/Sag/Obl					Algorithm	Detail	
Kernel	J30s	J37sMedsmooth	I50s Med Sharp		Window Width/ Level	1500/450	
Window	cerebrum	Cerebrum	Osteo		Slice Thickness (mm)	0.625	
SAFIRE/ADMIRE	2	0	1		Slice Increment (mm)	0.625	
Slice Thickness (mm)	2	2	2		Type	Plus	
Slice Increment (mm)	2	2	2		ASIR	None	

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

Adult Total/Combo Spines Revised-7/10/2023

CTDI: ~15-30 mGy

Setup:

- Scout from above area of interest through area of interest arms above head

Scan Parameters:

- Scan from above area of interest to below area of interest indicated on referral. Scans need to be completed as one continuous scan. (ex: entire, cervicothoracic, thoracolumbar)
- Preferred 170 mm DFOV

  For patients with implanted spinal hardware and/or a BMI ≥ 35 it is suggested that increasing kVp, slowing rotation time, and decreasing the pitch will help maintain image quality

Contrast:

- At the discretion of the Radiologist inject 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 45 second delay

PACS Series Entire Spine:

Cervical ACC#	Thoracic ACC#	Lumbar ACC
*Entire Spine Axial Bone	*Thoracic Axial Bone	*Lumbar Axial Bone
*Cervical Axial Bone	*Thoracic Axial ST	*Lumbar Axial ST
*Cervical Axial ST	*Thoracic Coronal	*Lumbar Coronal
*Entire Spine Coronal	*Thoracic Sagittal	*Lumbar Sagittal
*Entire Spine Sagittal		*Lumbar Axial Oblique
*Cervical Coronal		
*Cervical Sagittal		
*Cervical RT/LT Obliques		

*Entire spine only, not individual spine portions Sagittal ST

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

PACS Series Cervicothoracic Spine: *3D_Curved Coronal/Sagittal as needed*

Cervical ACC#	Thoracic ACC#
*Cerivcothoracic Axial Bone	*Thoracic Axial Bone
*Cervical Axial Bone	*Thoracic Axial ST
*Cervical Axial ST	*Thoracic Coronal
*Cervicothoracic Coronal	*Thoracic Sagittal
*Cervicothoracic Sagittal	
*Cervical Coronal	
*Cervical Sagittal	
*Cervical RT/LT Obliques	

*Cervical/thoracic spine only, not individual spine portions Sagittal ST

PACS Series Thoracolumbar Spine:

Thoracic ACC#	Lumbar ACC#
*Thoracolumbar Axial Bone	*Lumbar Axial Bone
*Thoracic Axial Bone	*Lumbar Axial ST
*Thoracic Axial ST	*Lumbar Coronal
*Thoracolumbar Coronal	*Lumbar Sagittal
*Thoracolumbar Sagittal	*Lumbar Axial Oblique
*Thoracic Coronal	
*Thoracic Sagittal	

For all spines with hardware-please send Reformat set to Terarecon

*Thoracic/Lumbar spine only, not individual spine portions Sagittal ST

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

TEMPORAL BONES - Revised-4/16/2019

CTDI: ~30-55 mGy

Setup:

- Supine, PA/Lateral scout from below the maxillary sinuses through the frontal sinuses
- BB to be placed behiind the Right Ear

Scan parameters:

- Supine helical scan from below the skull base through the entire IAC's
- 15 cm DFOV is preferred
- If the scan is performed with and without contrast, perform routine without contrast and the with contrast only needs 1.0 x 1.0 Bilateral Axial ST/1.0 x 1.0 Bilateral Coronal ST

Contrast:

At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 50 second delay

- See IV Catheter Guidelines

PACS Series:

- Topogram/Scout
- 0.6 x 0.6 Bilateral Axial Bone
- 1.0 x 1.0 Bilateral Axial Soft Tissue
- 0.6 x 0.6 Right Axial Bone
- 0.6 x 0.6 Left Axial Bone
- 0.6 x 0.6 Bilateral Coronal Bone
- 1.0 x 1.0 Coronal Soft Tissue
- 0.6 x 0.6 Right Coronal Bone
- 0.6 x 0.6 Left Coronal Bone
- 0.6 x 0.6 Right Oblique Coronal Bone
- 0.6 x 0.6 Right Oblique Sagittal Bone
- 0.6 x 0.6 Left Oblique Coronal Bone
- 0.6 x 0.6 Left Oblique Sagittal Bone
- Patient Protocol/Dose report

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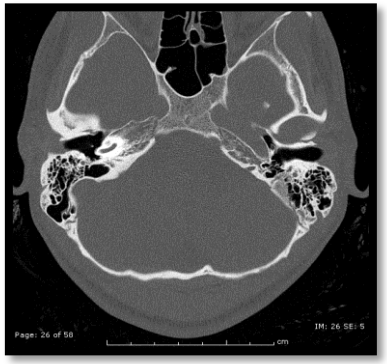
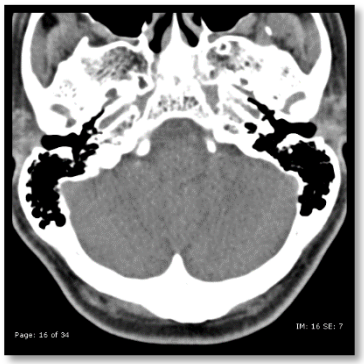
**Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

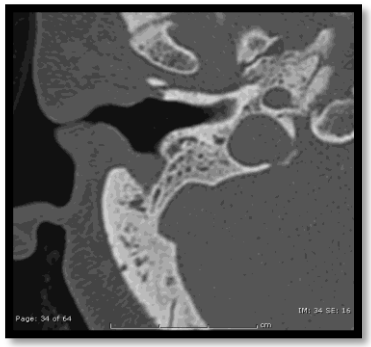
Bilateral Bone Axial



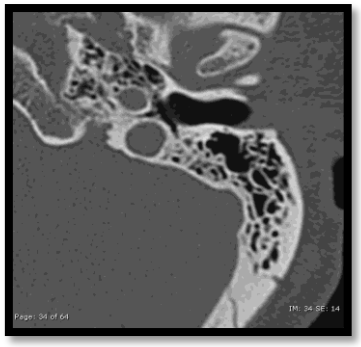
Bilateral Soft Tissue Axial



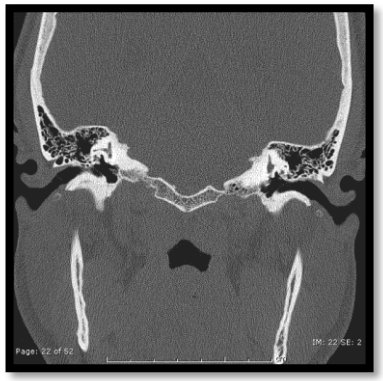
Right Axial Bone



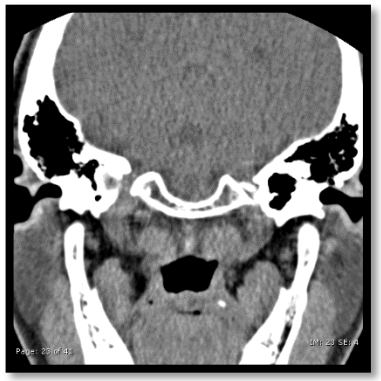
Left Axial Bone



Bilateral Coronal Bone

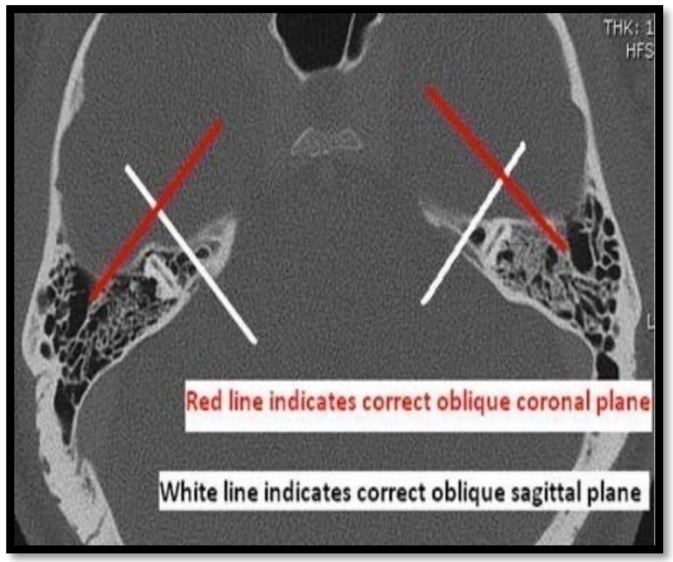


Bilateral Coronal Soft Tissue



Right Coronal Bone

Left Coronal Bone



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

TEMPORAL BONE PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	16 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.8		Pitch	0.531
Scan FOV	Large	Large	Small		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Axial ST						
Kernel	J30s	J37sMedsmooth	U30s Medsmooth		**Axial Bilateral ST**	
Window	cerebrum	cerebrum	Sinuses		Algorithm	Standard
SAFIRE/ADMIRE	2	0	0		Window Width/ Level	400/50
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Axial Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	V80u Very Sharp		ASIR	SS20
Window	Cranial bone	Cranial bone	Inner Ear			
SAFIRE/ADMIRE	2	0	2		**Axial Bilateral Bone**	
Slice Thickness (mm)	0.6	0.6	0.6		Algorithm	Bone Plus
Slice Increment (mm)	0.6	0.6	0.6		Window Width/ Level	4000/700
Reformat ST					Slice Thickness (mm)	0.625
Kernel	J30s	J37sMedsmooth	U30s Medsmooth		Slice Increment (mm)	0.625
Window	cerebrum	Cerebrum	Sinuses		Type	Full
SAFIRE/ADMIRE	2	0	0		ASIR	None
Slice Thickness (mm)	0.75	0.75	0.75			
Slice Increment (mm)	0.3	0.3	0.3		**RT Axial Bone**	
Reformat Bone					Algorithm	Bone Plus
Kernel	J80s verysharp	J70h verysharp	V80u Very Sharp		Window Width/ Level	4000/700
Window	Cranial bone	Cranial bone	Inner Ear		Slice Thickness (mm)	0.625
SAFIRE/ADMIRE	2	0	2		Slice Increment (mm)	0.625
Slice Thickness (mm)	0.6	0.6	0.6		Type	Full
Slice Increment (mm)	0.3	0.3	0.3		ASIR	None

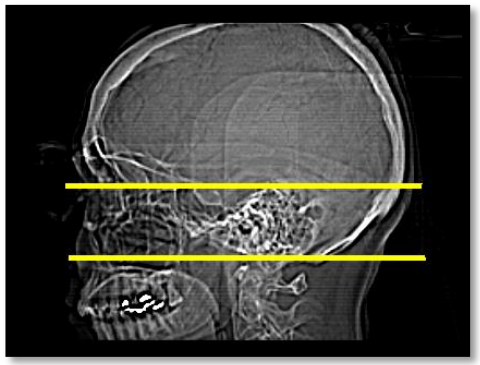
**Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

TEMPORAL BONES VANDERBILT - Revised-10/17/2019

CTDI: ~30-55 mGy

Setup:

- Supine, PA/Lateral scout from below the maxillary sinuses through the frontal sinuses
- BB to be placed on the Right Ear



Scan parameters:

- Supine helical scan from below the skull base through the entire IAC's
- 15 cm DFOV
- If the scan is performed with and without contrast, the bone reconstructions only need to be done on the post-contrast scan

Contrast:

At the discretion of the Radiologist inject 100 ml of 350 mg iodine/ml non-ionic contrast @ 2 ml/sec with a 45 second delay

- See IV Catheter Guidelines

PACS Series:

- Topogram/Scout
- 0.6 x 0.3 Bilateral Axial Bone (CD Data Set) **must use 150 DFOV**
- 1.0 x 1.0 Bilateral Axial Soft Tissue
- 0.6 x 0.6 Right Axial Bone
- 0.6 x 0.6 Left Axial Bone
- 0.6 x 0.6 Bilateral Coronal Bone
- 1.0 x 1.0 Coronal Soft Tissue
- 0.6 x 0.6 Right Coronal Bone
- 0.6 x 0.6 Left Coronal Bone
- 0.6 x 0.6 Right Oblique Coronal Bone
- 0.6 x 0.6 Right Oblique Sagittal Bone
- 0.6 x 0.6 Left Oblique Coronal Bone
- 0.6 x 0.6 Left Oblique Sagittal Bone
- Patient Protocol/Dose report

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

TEMPORAL BONE VANDERBILT PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	16 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	0.8		Pitch	0.531	
Scan FOV	Large	Large	Small		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set							
Kernel	J80s verysharp	J70h verysharp	V80u Very Sharp		**Axial Bilateral ST**		
Window	Cranial bone	Cranial bone	Inner Ear		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	400/50	
Slice Thickness (mm)	0.6	0.6	0.6		Slice Thickness (mm)	1.25	
Slice Increment (mm)	0.3	0.3	0.3		Slice Increment (mm)	1.25	
Axial ST					Type	Full	
Kernel	J30s	J37sMedsmooth	U30s Med Smooth		ASIR	SS20	
Window	cerebrum	cerebrum	Sinuses				
SAFIRE/ADMIRE	2	0	0		Algorithm	Bone Plus	
Slice Thickness (mm)	1	1	1		Window Width/ Level	4000/700	
Slice Increment (mm)	1	1	1		Slice Thickness (mm)	0.625	
Axial Bone					Slice Increment (mm)	0.625	
Kernel	J80s verysharp	J70h verysharp	V80u Very Sharp		Type	Full	
Window	Cranial bone	Cranial bone	Inner Ear		ASIR	None	
SAFIRE/ADMIRE	2	0	2				
Slice Thickness (mm)	0.6	0.6	0.6		**CD Data Set**		
Slice Increment (mm)	0.6	0.6	0.6		Algorithm	Bone Plus	
Reformat ST					Window Width/ Level	4000/700	
Kernel	J30s	J37sMedsmooth	U30s Medsmooth		Slice Thickness (mm)	0.625	
Window	cerebrum	Cerebrum	Sinuses		Slice Increment (mm)	0.3	
SAFIRE/ADMIRE	2	0	0		Type	Full	
Slice Thickness (mm)	0.75	0.75	0.75		ASIR	None	
Slice Increment (mm)	0.3	0.3	0.3				
Reformat Bone					**RT Axial Bone**		
Kernel	J80s verysharp	J70h verysharp	V80u Very Sharp		Algorithm	Bone Plus	
Window	Cranial bone	Cranial bone	Inner Ear		Window Width/ Level	4000/700	
SAFIRE/ADMIRE	2	0	2		Slice Thickness (mm)	0.625	
Slice Thickness (mm)	0.6	0.6	0.6		Slice Increment (mm)	0.625	
Slice Increment (mm)	0.3	0.3	0.3		Type	Full	

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

TMJ - Revised-11/27/2018

CTDI: ~15 - 20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Scout and Scan from below the mandible through the orbital roof

DFOV: The axial soft tissue recon is a 25cm DFOV

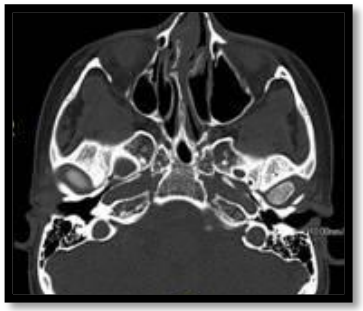
Contrast:

1. at the discretion of the Radiologist
2. 100 ml of 350 mg/dl non-ionic contrast @ 2 ml/sec with a 60 second delay
3. See IV Catheter Guidelines

PACS Series:

- Topogram
- 1mm x 1mm Axial Soft Tissue 25 cm DFOV (CD Data set)
- 1mm x 1mm Axial Bone
- 1mm x 1mm Sagittal Bone
- 1mm x 1mm Coronal Bone
- 1mm x 1mm Right Oblique Bone
- 1mm x 1mm Left Oblique Bone
- Patient Protocol/Dose Report

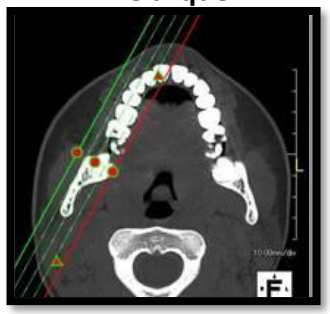
Axial



Sagittal

Coronal

RT Oblique



LT Oblique

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

TMJ PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660
Scan Type	spiral	spiral	spiral		Scan Type	spiral
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5
Pitch	0.8	0.3	0.55		Pitch	0.531
Scan FOV	Large	Large	Small		Speed (mm/rot)	39.37
CareDose4D	on	on	on		Scan FOV	Large
Quality ref mAs	190	125	125		Auto mA range	100-500
kVp	110				kVp	120
ref kVp		120	120		Smart mA	off
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%
Axial ST						
Kernel	J30s	J37sMedsmooth	J30s Med Smooth		**Axial Bilateral ST**	
Window	cerebrum	cerebrum	Sinuses		Algorithm	Standard
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	380/40
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	1.25
Slice Increment (mm)	1	1	1		Slice Increment (mm)	1.25
Axial Bone					Type	Full
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		ASIR	SS20
Window	Cranial Bone	Cranial Bone	Cranial Bone			
SAFIRE/ADMIRE	2	0	1		**Axial Bilateral Bone**	
Slice Thickness (mm)	1	1	1		Algorithm	Bone Plus
Slice Increment (mm)	1	1	1		Window Width/ Level	1500/450
Cor/Sag/Obl					Slice Thickness (mm)	1.25
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		Slice Increment (mm)	1.25
Window	Cranial Bone	Cranial Bone	Cranial Bone		Type	Full
SAFIRE/ADMIRE	2	0	1		ASIR	None
Slice Thickness (mm)	1	1	1			
Slice Increment (mm)	1	1	1		**CD Data Set if needed**	
					Algorithm	Standard
					Window Width/ Level	380/40
					Slice Thickness (mm)	0.625
					Slice Increment (mm)	0.625
					Type	Full
					ASIR	SS20

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

ARA DIAGNOSTIC IMAGING

TMJ CONCEPTS - Revised-3/10/2021

CTDI: ~15 - 20 mGy

Place skin marker on the patient's right cheek prior to scanning

Setup:

- Scout and Scan from below the mandible through the orbital roof

DFOV: The axial soft tissue recon is a 20cm DFOV (may be adjusted to best fit patient anatomy)

Pre Scan Checklist:

- See Attached

Procedure:

- See Attached

PACS Series:

- Topogram
- 0.6 mm x 0.6 mm Axial Soft Tissue 20 cm DFOV (CD Data set)
- 1mm x 1mm Axial Bone
- 1mm x 1mm Sagittal Bone/ST
- 1mm x 1mm Coronal Bone/ST
- Patient Protocol/Dose Report

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

TMJ CONCEPTS
6059 King Drive, Ventura, CA 93003, USA
Phone (805) 650-3391 or Toll Free (800) 504-9527

TMJ Concepts CT Scanning Protocol

This protocol is to ensure that accurate 3-D bone models can be created and used for the design and manufacture of patient-fitted temporomandibular joint prostheses. It does not define the use of or parameters for cone beam scanners. Consult with TMJ Concepts regarding cone beam scanning parameters.

Please review the following information before proceeding with the scanning process. If you have any questions, contact TMJ Concepts at 805-650-3391 (Toll free 800-504-9527) prior to scanning the patient. TMJ Concepts can be visited on the web at www.tmjconcepts.com.

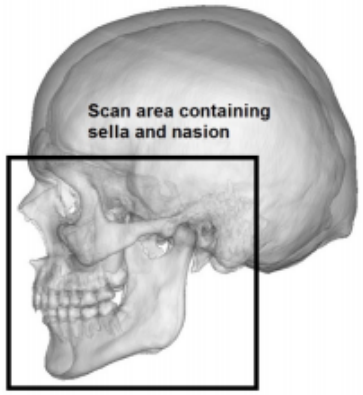
Pre-Scan Checklist

- Remove any jewelry that is in the scan area.
- Stabilize the patient with sponges, tape, and any other accessories that will not cause injury to the patient or affect the quality of the scan. It is extremely important that the patient does not move or swallow during the scanning process.
- Position the patient so that he/she lay supine.
- Patient should be scanned in good occlusion when possible. Patients that cannot achieve a good occlusal position should be scanned with a bite jig or other apparatus to stabilize and separate the teeth. If there is any question regarding what is appropriate, please contact the ordering surgeon.

Procedure

- Inform the patient when the actual scanning process starts. Instruct them to not move or swallow until the scan is complete. If there is movement, the patient must be re-scanned.
- Take a scout view and locate the first slice position. Make sure the head is positioned symmetrically so that the first slice is positioned correctly for both the left and right TMJ.
- Start the scan so that it includes both the sella and nasion. Be sure that both inferior orbital borders and EAC's are included. Scan through the tip of the chin.
- Scans must **not** be provided with greater than 1mm slice intervals. If your standard scanning parameters are .5mm, .625mm, or .75mm slice intervals, please provide the greatest level of detail scanned. Do **not** reformat axial slice data into a different slice interval.
- Only axial image data is required. If possible, retain the raw CT data until the scan has been reviewed by TMJ Concepts.
- Data should be archived onto a CD in an uncompressed DICOM format using a standard-type algorithm. Do **not** use a Detail or Bone algorithm. Preferred algorithms for common scanners are shown in the table at the right.
- Label the disk with surgeon name, patient name, date of scan, technician name, scanner type, scan site name and phone number.
- Send data to TMJ Concepts via overnight shipping or via ftp or other data transfer utility. For help with data transfer, please contact TMJ Concepts.

Helical Scanning Parameters	
Scan Area	TMJ/Mandible/Maxilla (per diagram below)
Algorithm	Standard (Do **not** use Detail or Bone) **Preferred Algorithms** GE.....Standard Phillips.....B Siemens....H30s Toshiba .....FC30 or FC03*
FOV	20 cm (may be adjusted to best fit patient anatomy)
Pitch	1:1
Slice Interval	0.5mm to 1mm **Do Not Reformat**
Slice Thickness	Same as slice interval
Contrast	Scan without contrast
Gantry Tilt Angle	0
Archival	**Uncompressed DICOM image data on CD**



*** Toshiba scanners: Use whichever is identified as a STANDARD algorithm on your machine.**

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

TMJ CONCEPTS PROTOCOL

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	0.6	0.5	1		Rotation Time (sec)	0.5	
Pitch	0.8	0.3	1		Pitch	0.969:1	
Scan FOV	Large	Large	Small		Speed (mm/rot)	39.37	
CareDose4D	on	on	on		Scan FOV	Large	
Quality ref mAs	190	125	125		Auto mA range	100-500	
kVp	110				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3 w/o contrast	3 w/o contrast		Noise Index	18	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
CD Data Set							
Kernel	J30s	J37sMedsmooth	J30s Med Smooth		**Axial ST**		
Window	Cerebrum	Cerebrum	Sinuses		Algorithm	Standard	
SAFIRE/ADMIRE	2	0	2		Window Width/ Level	380/40	
Slice Thickness (mm)	1	3	0.6		Slice Thickness (mm)	1.25	
Slice Increment (mm)	1	3	0.6		Slice Increment (mm)	1.25	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		ASIR	SS20	
Window	Cranial Bone	Cranial Bone	Cranial Bone				
SAFIRE/ADMIRE	2	0	1		**Axial Bone**		
Slice Thickness (mm)	1	3	1		Algorithm	Standard	
Slice Increment (mm)	1	3	1		Window Width/ Level	700/80	
Cor/Sag ST					Slice Thickness (mm)	0.75	
Kernel	J30s	J37sMedsmooth	J30s Med Smooth		Slice Increment (mm)	0.5	
Window	Cerebrum	Cerebrum	Sinuses		Type	Full	
SAFIRE/ADMIRE	2		0		ASIR	SS20	
Slice Thickness (mm)	3	3	1				
Slice Increment (mm)	3	3	1		**CD Data Set/ST Reformat**		
Cor/Sag Bone					Algorithm	Standard	
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		Window Width/ Level	380/40	
Window	Cranial Bone	Cranial Bone	Cranial Bone		Slice Thickness (mm)	0.625	
SAFIRE/ADMIRE	2	0	1		Slice Increment (mm)	0.625	
Slice Thickness (mm)	1	3	1		Type	Plus	
Slice Increment (mm)	1	3	1		ASIR	SS20	

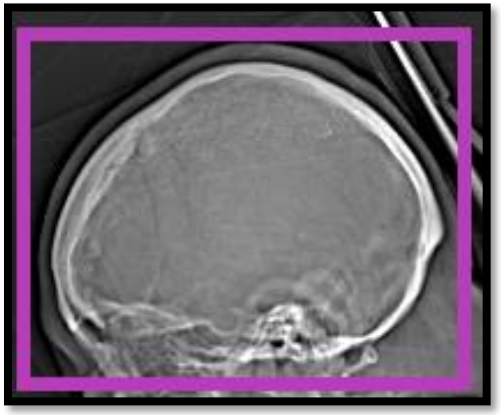
**Protocol designed to minimize the amount of radiation while maximizing the yield and produce diagnostically acceptable image quality*

HEAD DBS LEAD - Revised-10/12/2023

CTDI: ~ 35-60 mGy

Setup

- Head First Supine
- Keep slices as orthogonal to the leads as possible



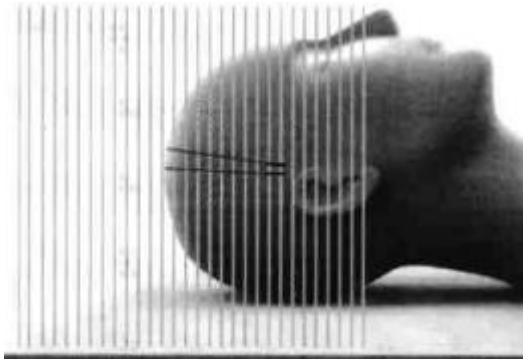
Exam:

- Routine Brain without contrast
- Start scans at the bottom of the skull base and scan through the top of the head
- Do not cut off lead tip(s)

DFOV: Preferred 20 cm (Range 18-22)

PACS Series:

- 1x1 Brain
- 1x1 Bone (Only needed on one series not both)
- 1x1 Coronal ST
- Patient Protocol/Dose Report



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

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HEAD DBS LEAD PROTOCOL

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

Scanner	Perspective	Definition AS 40	Definition AS 64		Scanner	Optima 660	
Scan Type	spiral	spiral	spiral		Scan Type	spiral	
Detector Configuration	32 x 0.6	64 x 0.6	64 x 0.6		Detector Coverage (mm)	20	
Rotation Time (sec)	1.5	1	1		Rotation Time (sec)	0.5	
Pitch	0.55	1	0.55		Pitch	0.969:1	
Scan FOV	Large	Large	Large		Speed (mm/rot)	39.37	
CareDose4D	off	off	off		Scan FOV	Large	
Quality ref mAs	190	225	275		Auto mA range	100-500	
kVp	130				kVp	120	
ref kVp		120	120		Smart mA	off	
Optimize Slider position		3w/o contrast	3 w/o contrast		Noise Index	10	
Optimize Slider position		7 w/ contrast	7 w/ contrast		ASIR	20%	
Axial Brain							
Kernel	J37sMedsmooth	J37sMedsmooth	J37s Med Smooth		**Recon 1 Brain**		
Window	cerebrum	cerebrum	cerebrum		Algorithm	Standard	
SAFIRE/ADMIRE	0	0	2		Window Width/ Level	80/35	
Slice Thickness (mm)	1	1	1		Slice Thickness (mm)	2.5	
Slice Increment (mm)	1	1	1		Slice Increment (mm)	2.5	
Axial Bone					Type	Full	
Kernel	J80s verysharp	J70h verysharp	J70h Very Sharp		ASIR	SS30	
Window	Cranial bone	Cranial bone	Cranial bone				
SAFIRE/ADMIRE	0	0	1		**Recon 2 Bone**		
Slice Thickness (mm)	1	1	1		Algorithm	Bone	
Slice Increment (mm)	1	1	1		Window Width/ Level	3000/800	
Coronal ST					Slice Thickness (mm)	2.5	
Kernel	J37sMedsmooth	J37sMedsmooth	J37s Med Smooth		Slice Increment (mm)	2.5	
Window	Cerebrum	Cerebrum	Cerebrum		Type	Full	
SAFIRE/ADMIRE	0	0	2		ASIR	SS20	
Slice Thickness (mm)	1	1	1				
Slice Increment (mm)	1	1	1		**Recon 2 Trauma Reformat**		
					Algorithm	STND	
					Window Width/ Level	100/50	
					Slice Thickness (mm)	1.25	
					Slice Increment (mm)	0.625	
					Type	Full	
					ASIR	None	

Protocol Review

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

CT Protocols are reviewed by the Radiation Safety Protocol Committee.

Committee members consists of ARA Radiation Safety Officer, Radiologists, ARA Outpatient Imaging Center Directors, Manager of Quality, Safety and Risk Management and Lead CT Technologists

Protocol(s) Review Date
09/04/2024
06/26/2025

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