

Spine Scanning Overview

2D QCT Bone Mineral Densitometry

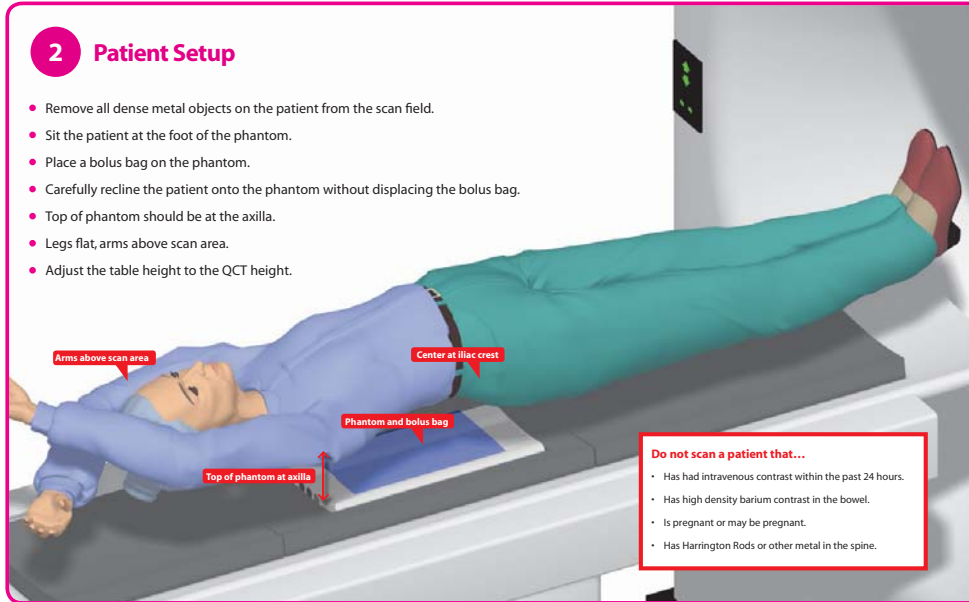
1 Phantom Setup

- Place the cutout pad and extenders on the CT table.
- Place phantom in the cutout pad. Orient the "head" end of the phantom to correspond with the patient.



2 Patient Setup

- Remove all dense metal objects on the patient from the scan field.
- Sit the patient at the foot of the phantom.
- Place a bolus bag on the phantom.
- Carefully recline the patient onto the phantom without displacing the bolus bag.
- Top of phantom should be at the axilla.
- Legs flat, arms above scan area.
- Adjust the table height to the QCT height.



Do not scan a patient that...

- Has had intravenous contrast within the past 24 hours.
- Has high density barium contrast in the bowel.
- Is pregnant or may be pregnant.
- Has Harrington Rods or other metal in the spine.

3 Scanner Setup

- Use a stored scan protocol for consistency.
- Always use the same table height, kVp and SFOV for all BMD patients.
- Exposure requirements may vary due to patient size. Increase mAs for obese patients—2X to 3X increase may be necessary.
- Include as much of the following information as possible:
 - Last name
 - First name
 - Date of birth
 - Gender
 - Medical record number

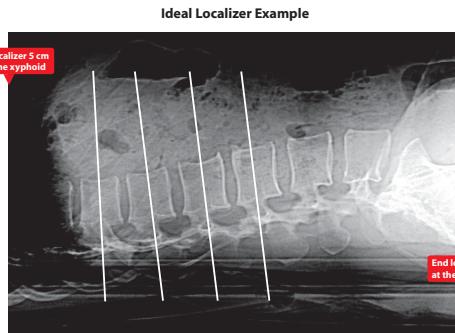
- Protocol Rules**
 - Always use these or the closest available parameters.
 - Angle gantry as needed and determined by localizer.
 - Default mAs should be appropriate for normal patients.

DFOV (cm)	RL Center (mm)	AP Center (mm)	Recon Type	Matrix Size	Partis.
36	0.0	0.0	Stand.	512	N

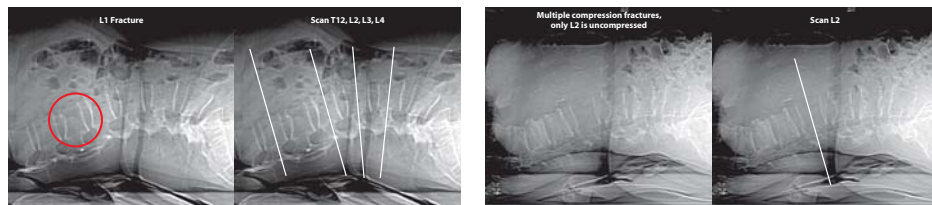
Images	Scan Type	Start Loc.	End Loc.	Scout Plane	No. of Images	Thick (mm)	Image Intval	Pitch	Gantry Tilt	SFOV	kV	mA
1	Scout	S200	I100	90							120	100
4	Axial Full 1.8 sec.			4	10				Large		120	60

4 Localizer

- Obtain a lateral localizer from above the xyphoid to below the L5/S1 joint.
- Use a scan length of 30 cm or more. Using the iliac crest as the landmark, +250mm to -75mm will normally produce an adequate localizer.
- Select 3-4 vertebrae between T11 and L4 for analysis. T12 to L3 are preferred.
- Any combination between T11 and L4 may be scanned.
- Define a scan plane through the mid-body of each vertebra to be scanned. Center the scan plane between and parallel to the end plates, and angle the gantry as required. Localization should be within 1-1.5 mm of mid-body.
- If the patient has previously had a spine BMD analysis, scan the same vertebrae as before.

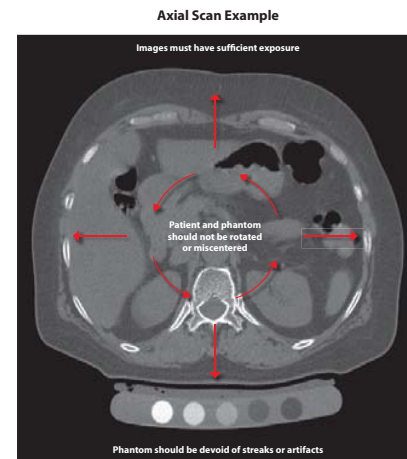


Localizer Examples with Spine Abnormalities



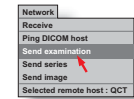
5 Axial Scans

- Instruct the patient to breath normally during scanning.



6 Image Transfer

- Send the QCT images to the QCT PC using your scanner's image transfer function.



Application	Selection	Remove	Sort	Network	Archive	PPS	Queue
Examinations:							
Exam	Name	Date	Description	Mtd	Prs	PPS	A
945	CARVER, DOROTHY	AU 09 02	Head	CT	DIC01	-	N
946	BAKER, MARLYN	AU 09 02	L-Spine	CT	DIC01	-	N
947	COHEN, BERNARD	AU 09 02	ADIPRUSIS	CT	DIC01	-	N
948	CHANG, SONG WU	AU 09 02	CHEST WICON	CT	DIC01	-	N
949	BLACK, COLLEEN	AU 09 02	HEAD	CT	DIC01	-	N
950	SMITH, SUZANNE	AU 09 02	SINUSSES	CT	DIC01	-	N
951	MARINZ, HECTOR	AU 09 02	ACTORS	CT	DIC01	-	N
952	DODD, JANE	AU 09 02	HEAD	CT	DIC01	-	N
953	SMITH, JANE	AU 09 02	HEAD	CT	DIC01	-	N
954	VLAARDELA, MANUE	AU 09 02	HEAD	CT	DIC01	-	N
955	ALBERTSON, SAM	AU 09 02	HEAD	CT	DIC01	-	N
956	CARVER, DOROTHY	AU 09 02	SMD	CT	DIC01	-	N
957	CHOU, CHEN	AU 09 02	BIPSPY	CT	DIC01	-	N
958	MURPHY, ANNA	AU 09 02	HEAD	CT	DIC01	-	N
959	LIAI, KIT	AU 09 02	HEAD	CT	DIC01	-	N
960	PARK, YOUNG	AU 09 02	CHEST	CT	DIC01	-	N
961	MEDCOCA, WINE	AU 09 02	ADIPRUSIS	CT	DIC01	-	N