

Spine

CERVICAL SPINE

Patients able to sit

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Patients lying down, unable to sit

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CERVICOTHORACIC REGION

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When the patient has been injured, keep the patient lying on her/his back

THORACIC SPINE

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CERVICAL SPINE PA (or AP) Sitting erect BASIC

After injury, see SPINE 4

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

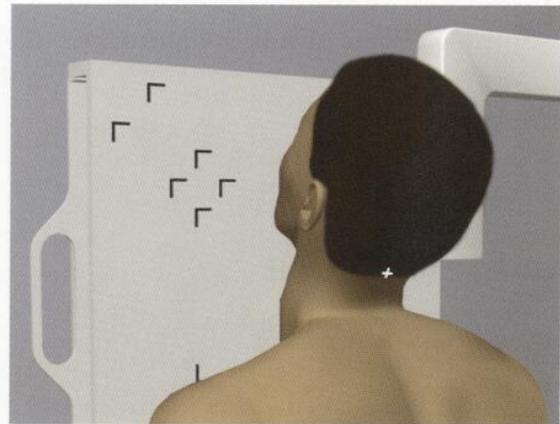
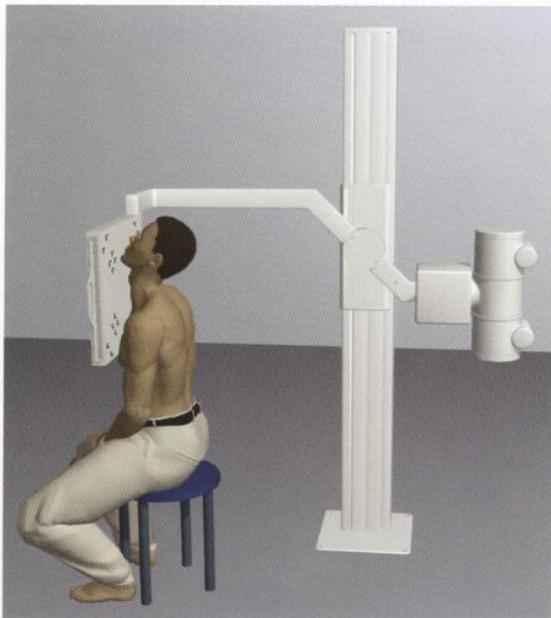
Cassette size

18×24 cm (8×10 inches)

Use a **R**ight or **L**eft marker

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Remove necklace, hairgrips and anything else from the hair.
3. Tell the patient to place the chin against the cassette holder. The knob at the back of the head should be level with the chin (lower jaw).
4. Center and collimate further, if possible. Tell the patient to stop breathing.
5. Expose. Tell the patient to breathe normally.

Exposure values	mAs	
	"blue" system 200	"green" system 400
70 kV	25	12.5
Average	25	12.5
Range	20–50	10–25



Jaw
Back of the skull



CERVICAL SPINE LATERAL **Sitting erect** **BASIC**

Cassette speed

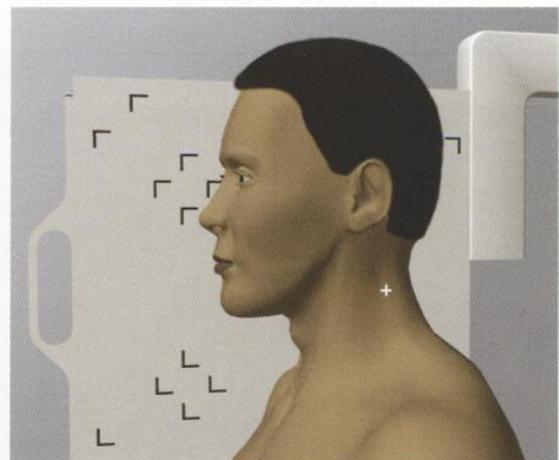
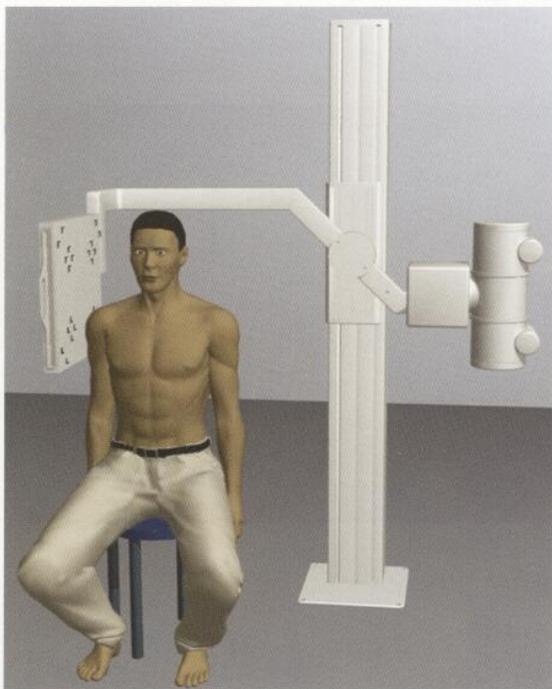
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

18×24 cm (8×10 inches)

Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	25	12.5
Range	20–50	10–25

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Remove necklace, hairgrips and earclips and anything else from the hair.
3. Position the patient with the shoulder against the cassette holder. The shoulders as low as possible with the arms against the sides. If the patient is not injured put a 1 kg (2 lb) weight (not more) in each hand.
4. Center and collimate further, if possible. Tell the patient to stop breathing.
5. Expose. Tell the patient to breathe normally.



CERVICAL SPINE OBLIQUE Sitting erect ADDITIONAL

Do not use for children

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

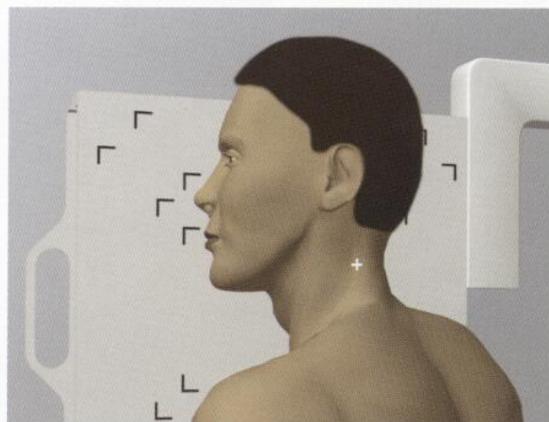
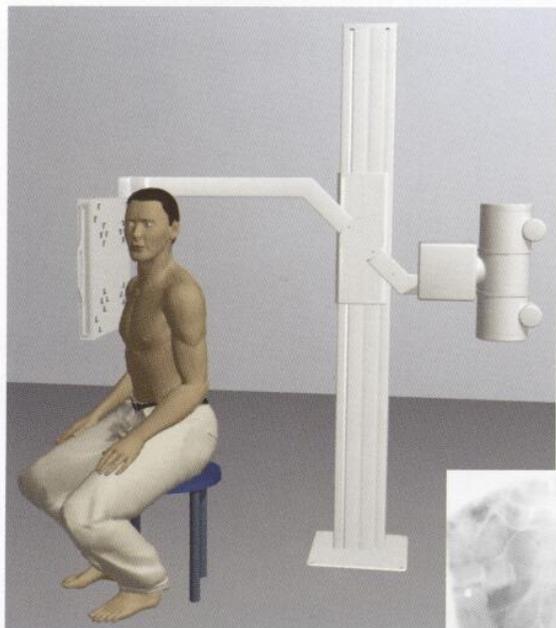
Cassette size

18×24 cm (8×10 inches)

Use a **R**ight and **L**eft marker

Exposure values	mAs	
	"blue" system 200	"green" system 400
70 kV	200	400
Average	25	12.5
Range	20–50	10–25

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Remove necklace, hairgrips, earclips and anything else from the hair.
3. Position the patient. Rotate the patient so that he is sitting at a 45° angle to the cassette holder.
4. Center and collimate further, if possible. Tell the patient to stop breathing.
5. Expose. Tell the patient to breathe normally.
6. Turn the patient and repeat for the other oblique view.



CERVICAL SPINE AP Supine – vertical beam angled 15° as shown ADDITIONAL
Use after injury

Cassette speed

Cassette with screen-film combination,
nominal speed 200/400 in the cassette holder

Cassette size

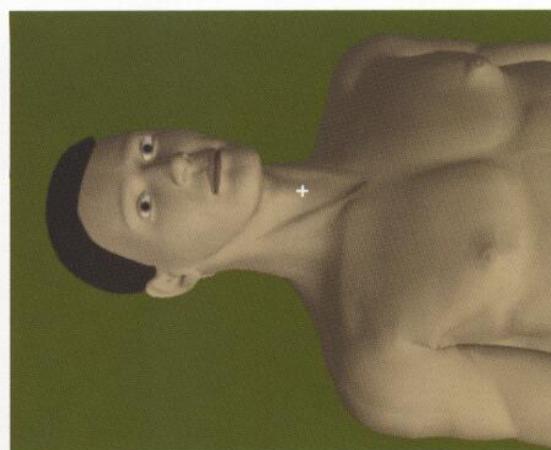
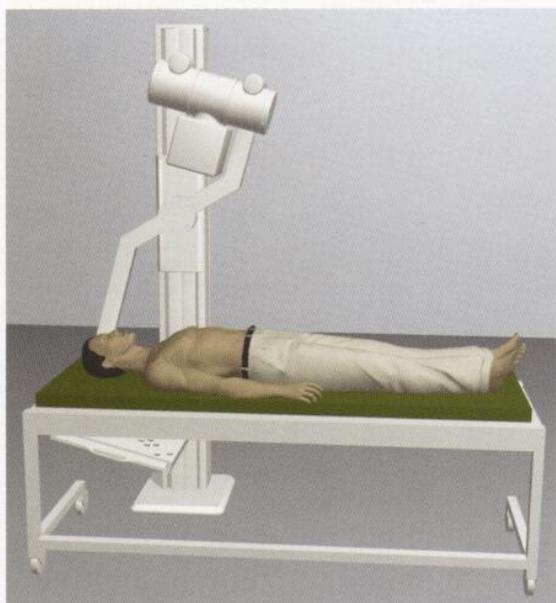
24×30 cm (10×12 inches)

18×24 cm (8×10 inches) for a child

Use a **R**ight or **L**eft marker

Exposure values	mAs	
	"blue" system 200	"green" system 400
70 kV	25	12.5
Average	25	12.5
Range	20–50	10–25

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format. Angle the tube cassette holder arm.
2. Remove necklace, hairgrips and anything else from the hair.
3. Position the patient. Center and collimate further, if possible. Tell the patient to stop breathing if possible.
4. Expose. Tell the patient to breathe normally.



CERVICAL SPINE LATERAL Supine – horizontal beam ADDITIONAL

Use after injury

IF A NECK FRACTURE IS SUSPECTED, THE HEAD SHOULD NOT BE LIFTED ONTO A PAD BY THE OPERATOR WITHOUT THE DOCTOR'S PERMISSION.

Cassette speed

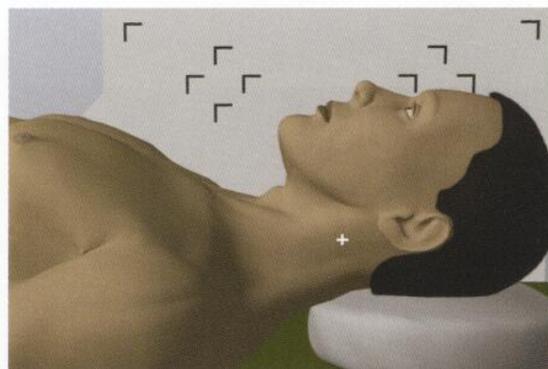
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

24×30 cm (10×12 inches)

Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	25	12.5
Range	16–63	8–32

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Remove necklace, hairgrips, earclips and anything else from the hair.
3. The head could be supported by a pad. The head should be in the position, which is the least painful for the patient. If possible, an accompanying person (wearing a lead apron and lead gloves) may pull the arms downwards, to lower the shoulders.
4. Center and collimate further, if possible. Tell the patient to stop breathing.
5. Expose. Tell the patient to breathe normally.



ODONTOID PROCESS AP Supine – vertical beam angled 10° as shown **ADDITIONAL**
 First and second cervical vertebrae through the **open mouth**

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

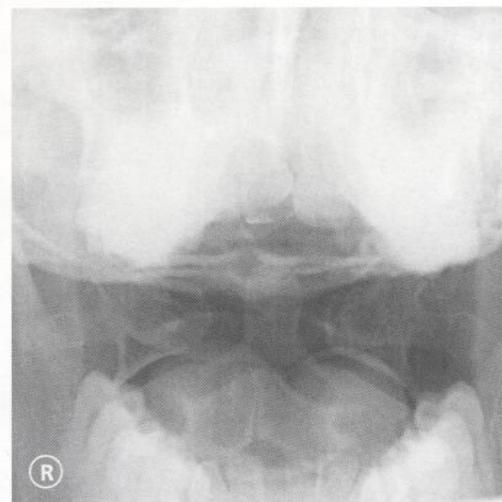
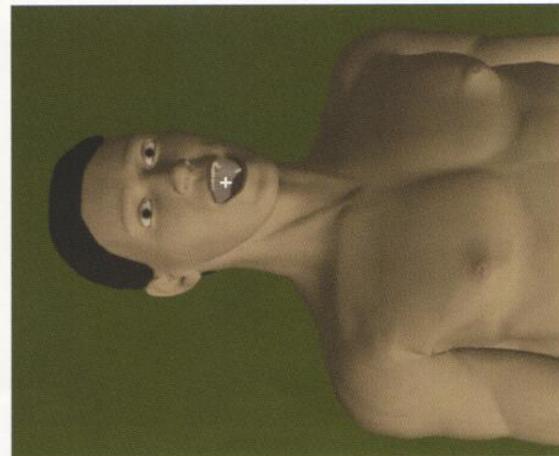
Cassette size

18×24 cm (8×10 inches)

Use a **Right** or **Left** marker

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Remove dentures, hairgrips and anything from the hair.
3. Tell the patient to open the mouth as widely as possible. If the patient is unable to keep the mouth open, place a wedge of soft wood or cork between the upper and lower row of teeth or gums.
4. Center as shown.
Collimate further, if possible.
 Tell the patient to stop breathing.
5. Expose. Tell the patient to breathe normally.
6. Remove the wedge of cork.

Exposure values	mAs	
	"blue" system 200	"green" system 400
70 kV	40	20
Average	20–80	12.5–32
Range		



CERVICOTHORACIC REGION LATERAL Sitting erect ADDITIONAL

Also possible lying on one side. Seldom needed below the age of 16 years.

Cassette speed

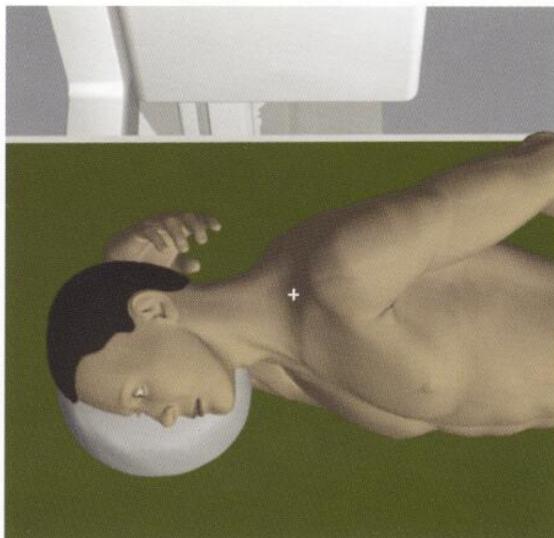
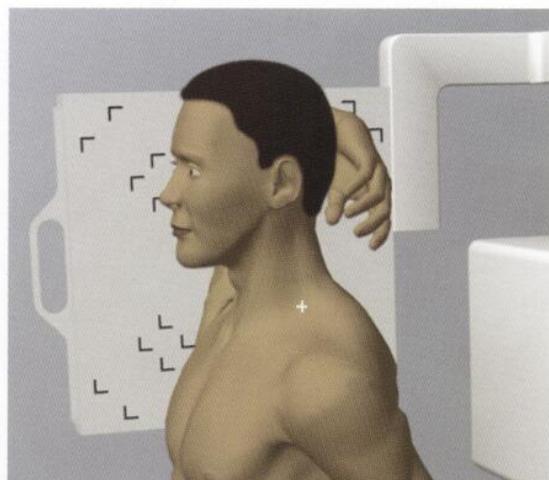
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

24×30 cm (10×12 inches)

Exposure values	mAs	
	"blue" system	"green" system
80 kV	200	400/450
Average	100	50
Range	50–160	25–80

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient with the arm close to the cassette holder elevated following the direction of the cervical spine. The other shoulder should be as low as possible.
3. Center and collimate further, if possible. Tell the patient to stop breathing.
4. Expose. Tell the patient to breathe normally.



THORACIC SPINE AP Supine BASIC

Cassette speed

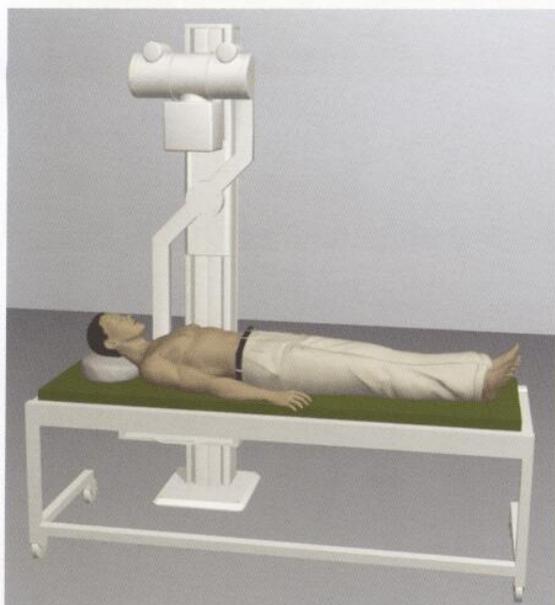
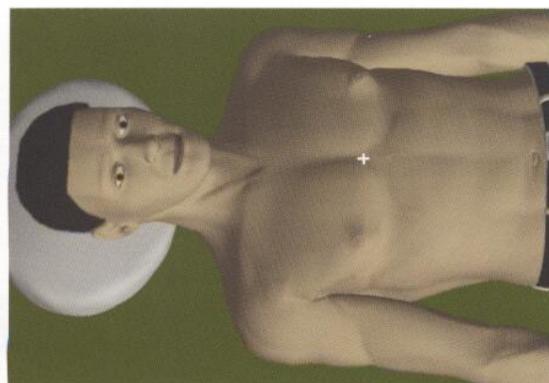
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

18×43 cm (7×17 inches)
Use a **R**ight or **L**eft marker

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient.
3. Center and collimate further, if possible. Tell the patient to stop breathing.
4. Expose. Tell the patient to breathe normally.

Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	80	40
Range	63–200	32–100



THORACIC SPINE LATERAL Lying on the left (or right side) BASIC

Cassette speed

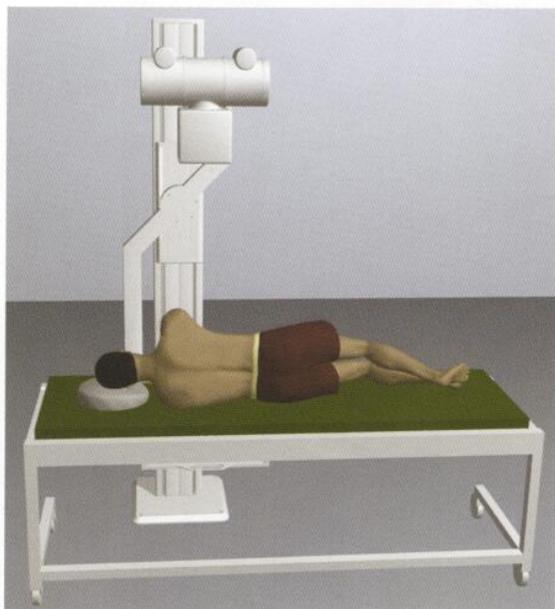
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

18×43 cm (7×17 inches) or 20×40 cm

Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	160	80
Range	40–200	32–160

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient. Bend the knees to stabilize the body. The long axis of the spine should be horizontal.
4. Center and collimate further, if possible.
3. Expose while the patient is breathing as usual.



LUMBAR SPINE AP (or PA) Supine (or prone) BASIC

AFTER INJURY—DO NOT TURN THE PATIENT OVER. X-RAY IN EITHER AP OR PA POSITION WITH AS LITTLE MOVEMENT AS POSSIBLE.

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

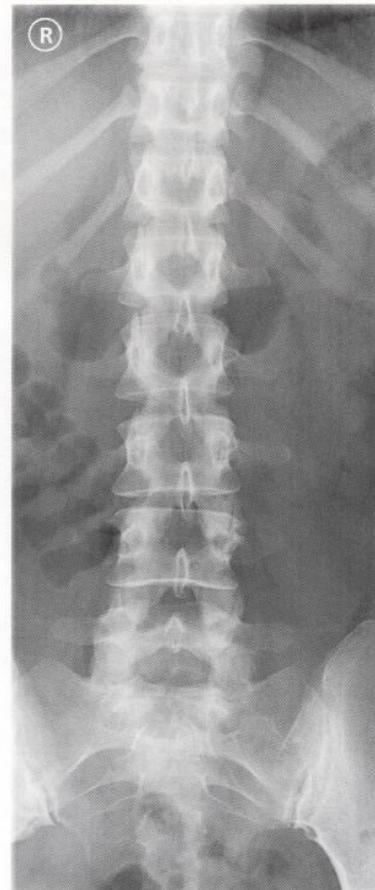
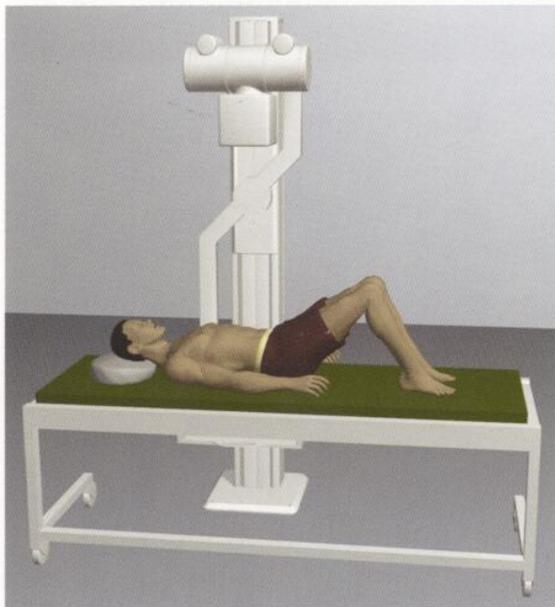
Cassette size

18×43 cm (7×17 inches)

Use a **Right** or **Left** marker

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient. THE PATIENT'S KNEES SHOULD BE BENT SO THAT THE PATIENT'S BACK IS FLAT ON THE TABLE.
3. Center and collimate further, if possible. Tell the patient to stop breathing.
4. Expose. Tell the patient to breathe normally.

Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	100	50
Range	50–160	25–80



LUMBAR SPINE LATERAL Lying on the left (or right) side BASIC

If a fracture is suspected, use SPINE 12

Cassette speed

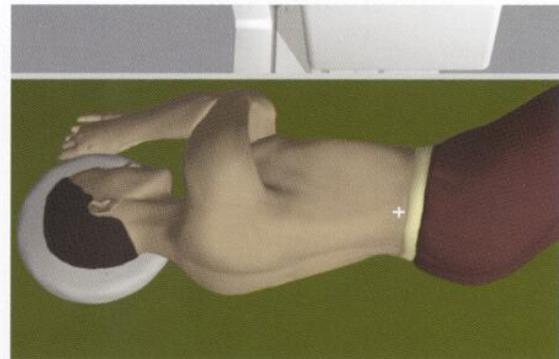
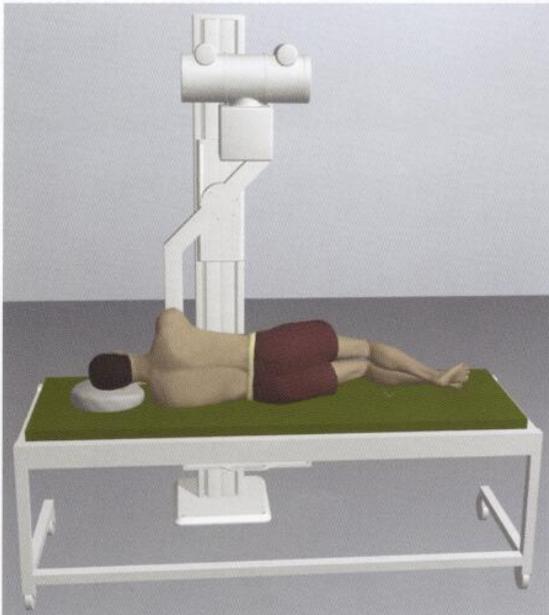
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

18×43 cm (7×17 inches) or 20×40 cm

Exposure values	mAs average (range)	
	"blue" system 200	"green" system 400/450/500
kV		
80	–	100 (50–200)
90	160 (100–250)	(160–250)
120	(125–250)	–

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient. Bend the knees to stabilize the body. Center and collimate further, if possible.
3. Tell the patient to breath in, then out, and then stop breathing. Expose.
4. Tell the patient to breathe normally.



LUMBAR SPINE LATERAL – after injury

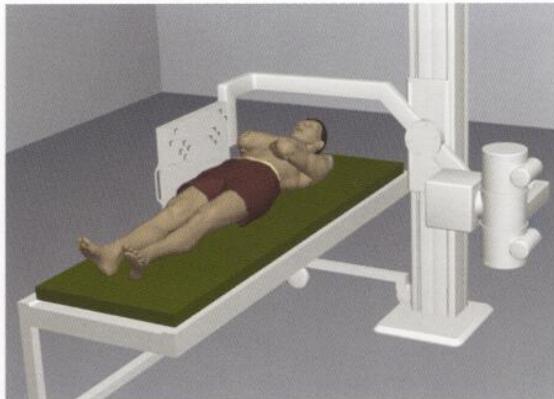
Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

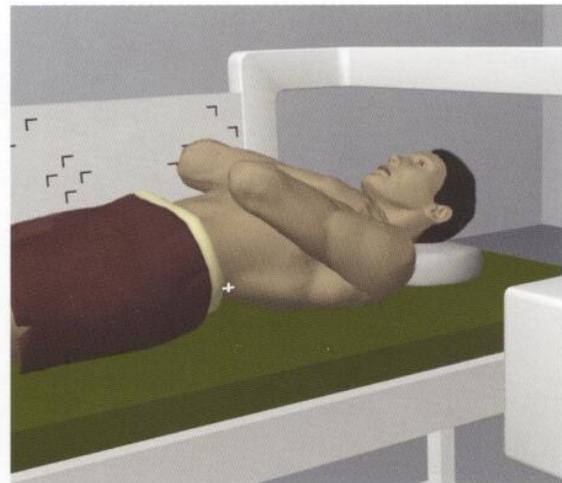
18×43 cm (7×17 inches) or 20×40 cm

Exposure values	mAs average (range)	
	"blue" system 200	"green" system 400/450/500
kV		
80	–	100 (50–200)
90	160 (100–250)	(160–250)
120	(125–250)	–



Supine – horizontal beam **ADDITIONAL**

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient. Center and collimate further, if possible. Tell the patient to stop breathing.
3. Expose. Tell the patient to breathe normally.



SACRUM AP: Lumbosacral junction and sacroiliac joints

Supine – vertical beam angled 15° as shown BASIC

Do not use for children

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

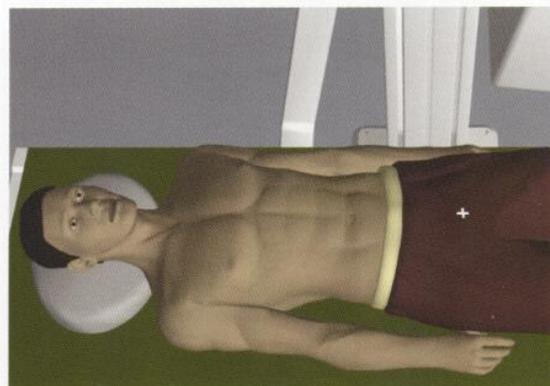
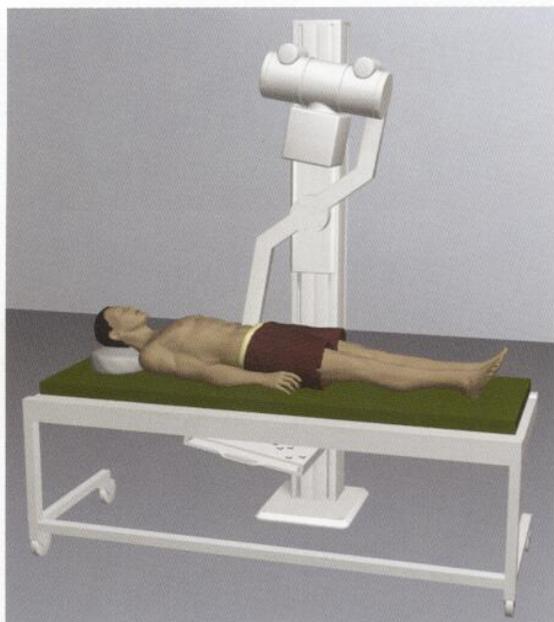
Cassette size

24×30 cm (10×12 inches)

Use a **R**ight or **L**eft marker

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Angle the tube cassette holder arm.
3. Position the patient. Center 3 cm above the symphysis and collimate further, if possible.
4. Expose while the patient is breathing as usual.

Exposure values	mAs	
	"blue" system 200	"green" system 400
Average	125	63
Range	80–250	40–125



LUMBOSACRAL JUNCTION LATERAL Lying on the left (or right) side BASIC

Do not use for children

Cassette speed

Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

24×30 cm (10×12 inches)

Exposure values	mAs average (range)	
	"blue" system 200	"green" system 400/500
90	(100–250)	125 (50–250)
120	125 (125–250)	(125–160)

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format.
2. Position the patient. Bend the knees to stabilize the body. Support with a pad under the waist. Center 3 cm below the iliac crest and collimate further, if possible.
3. Tell the patient to stop breathing. Expose.
4. Tell the patient to breathe normally.

