

بِسْمِ اللَّهِ الرَّحْمَنِ الرَّحِيمِ



Radiography Positioning (Lect 6)

Spine Imaging Projections

B

By

Dr. Ahmad Mokhtar Abodahab

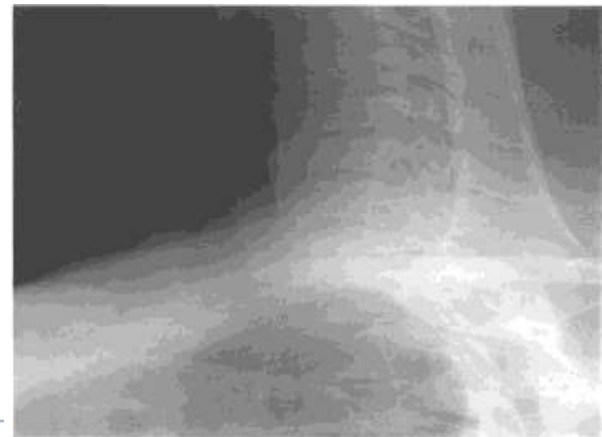
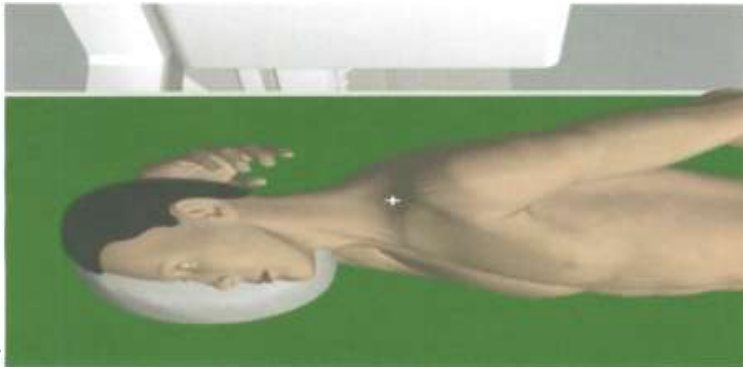
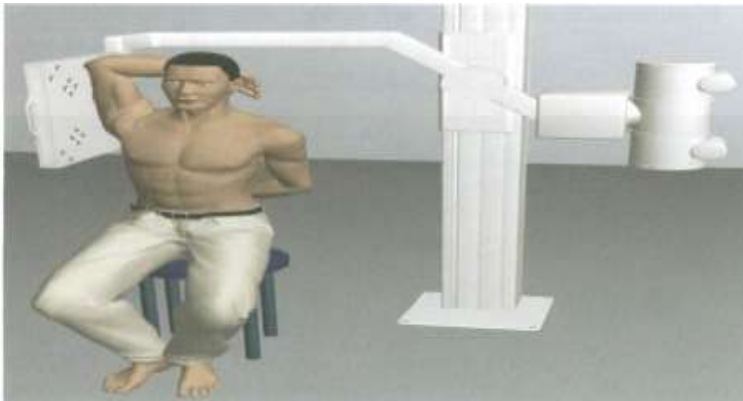
Review Of Previous Lecture (**10 min**)



& Home Work

SPINE 7

CERVICOTHORACIC REGION LATERAL Sitting erect ADDITIONAL
Also possible lying on one side. Seldom needed below the age of 16 years.



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



CERVICOTHORACIC REGION LATERAL Sitting erect ADDITIONAL

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

Cassette speed

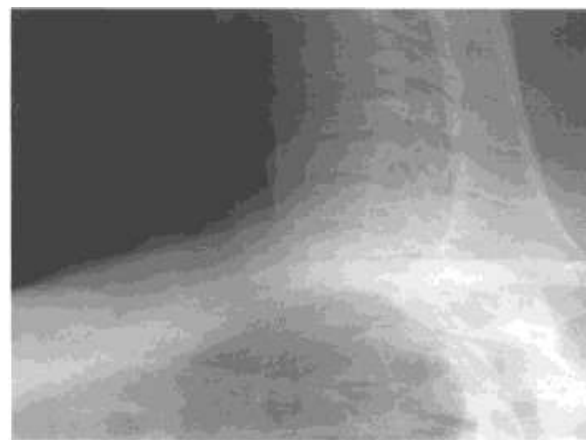
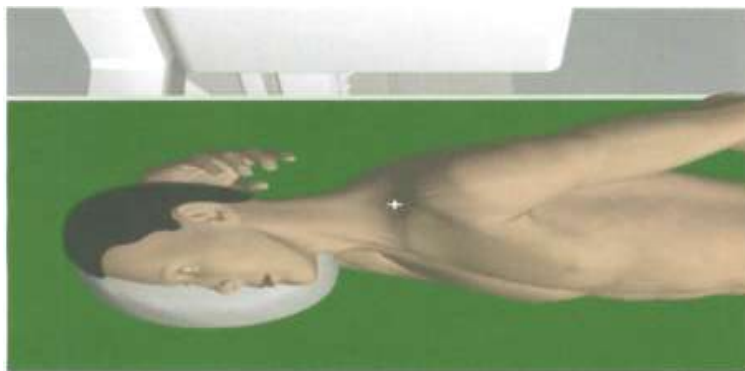
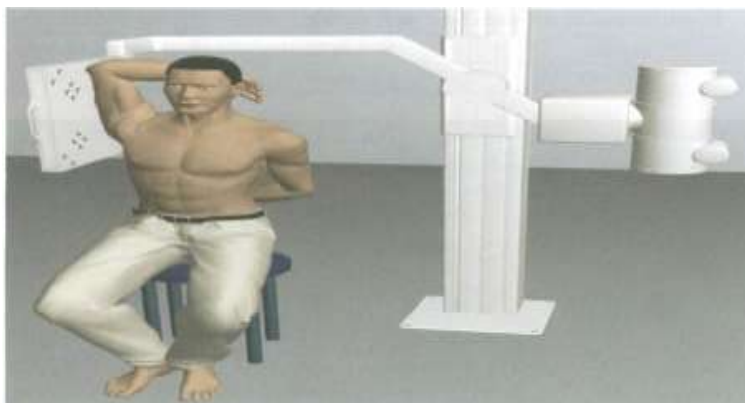
Cassette with screen-film combination,
nominal speed 200/400 in the cassette holder

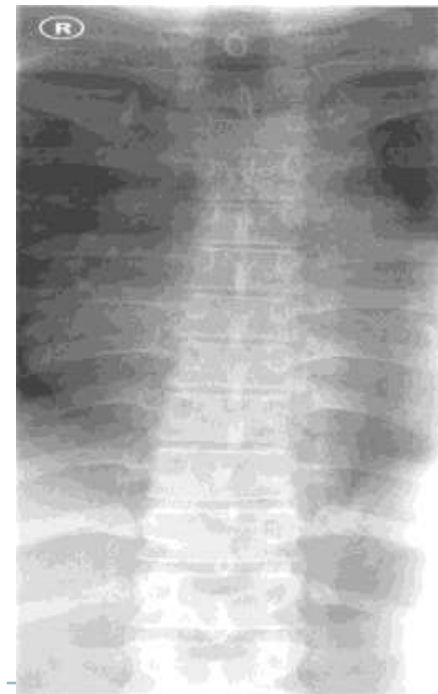
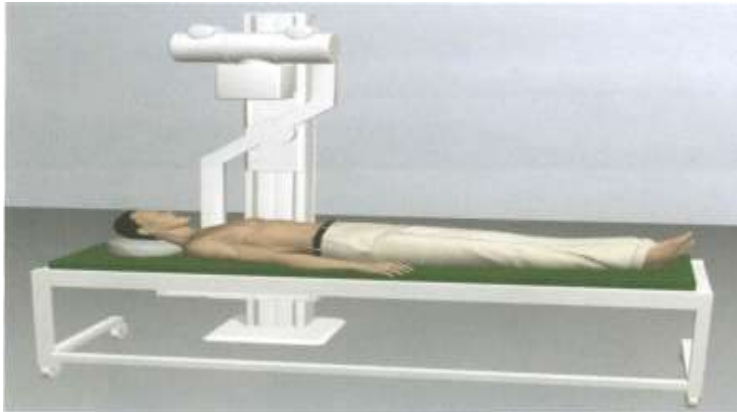
Cassette size

24×30 cm (10×12 inches)

Exposure values	mAs	
80 kV	"blue" system 200	"green" system 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

Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



THORACIC SPINE AP Supine BASIC**Cassette speed**

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

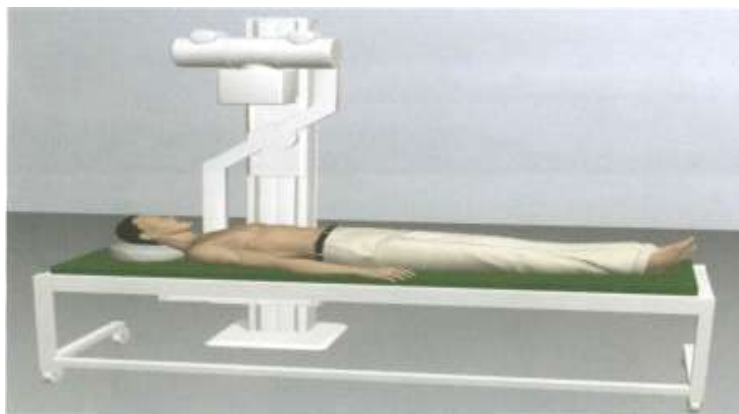
Cassette size

18×43 cm (7×17 inches)

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

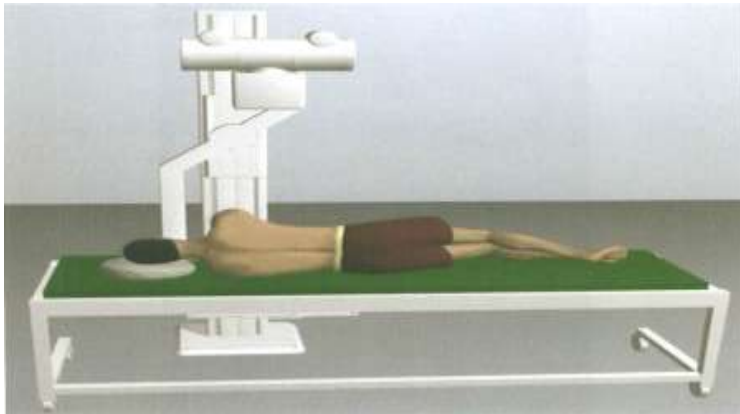
Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	80	40
Range	63–200	32–100

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.



SPINE 9

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



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



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

Cassette speed

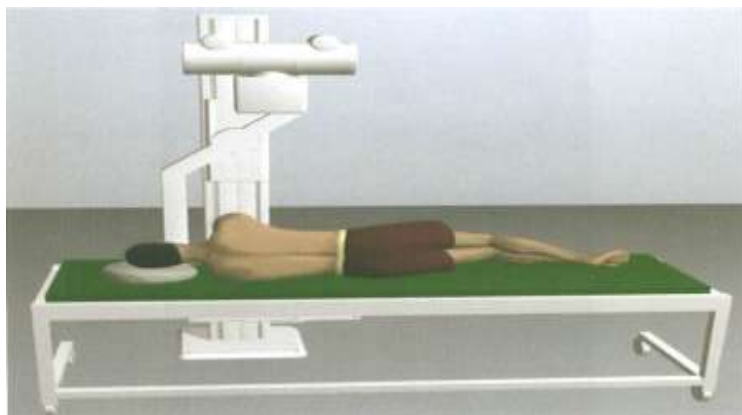
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size

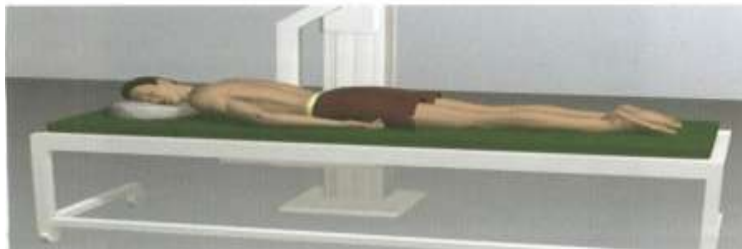
18×43 cm (7×17 inches) or 20×40 cm

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.
3. Expose while the patient is breathing as usual.
4. Center and collimate further, if possible.



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



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



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

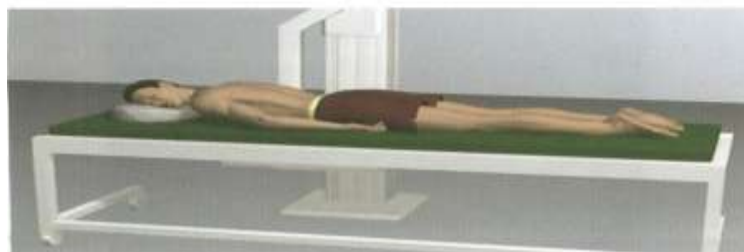
Cassette size

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.

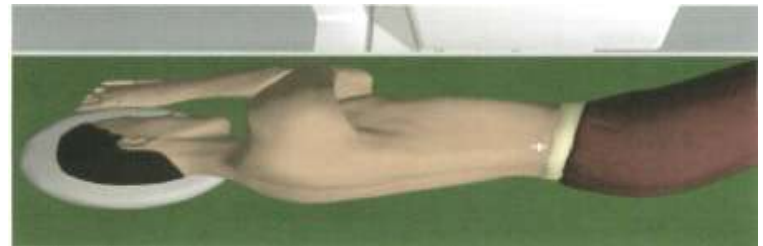
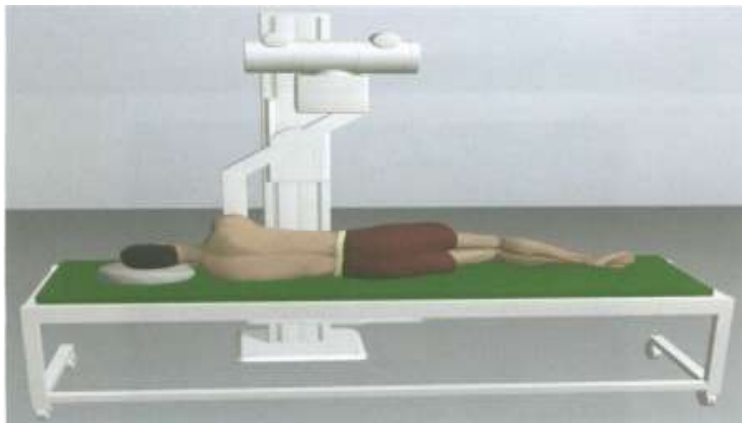
Exposure values	mAs	
	"blue" system	"green" system
70 kV	200	400
Average	100	50
Range	50–160	25–80



SPINE 11

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

If a fracture is suspected, use SPINE 12



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



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

If a fracture is suspected, use SPINE 12

Cassette speed

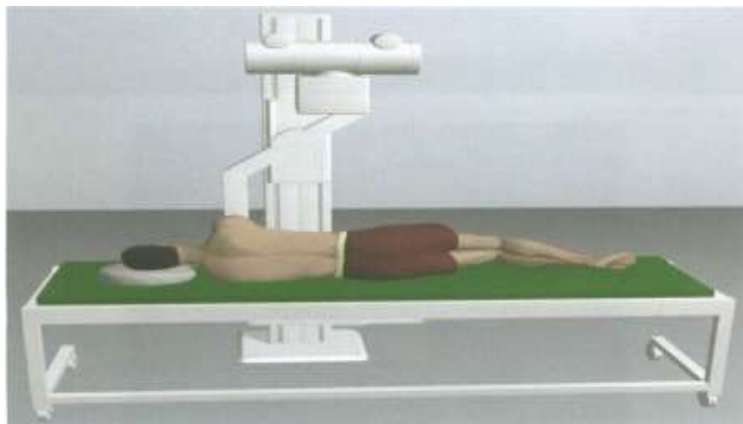
Cassette with screen-film combination,
nominal speed 200/400 in the cassette holder

Cassette size

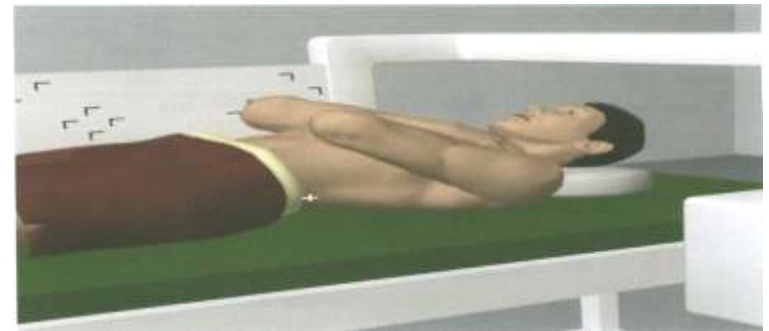
18×43 cm (7×17 inches) or 20×40 cm

Exposure values	mAs average (range)	
kV	"blue" system 200	"green" system 400/450/500
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 **Supine – horizontal beam** **ADDITIONAL**



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



LUMBAR SPINE LATERAL – after injury**Cassette speed**

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

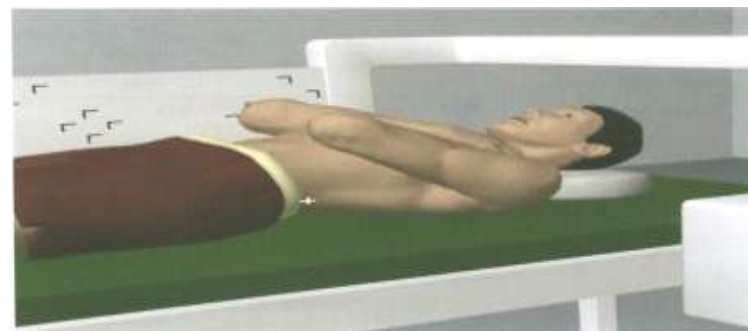
Cassette size

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.

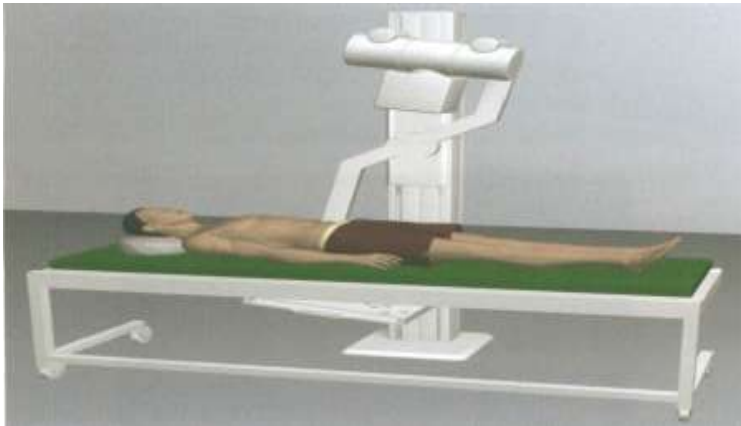


SPINE 13

SACRUM AP: Lumbosacral junction and sacroiliac joints

Supine – vertical beam angled 15° as shown BASIC

Do not use for children



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



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

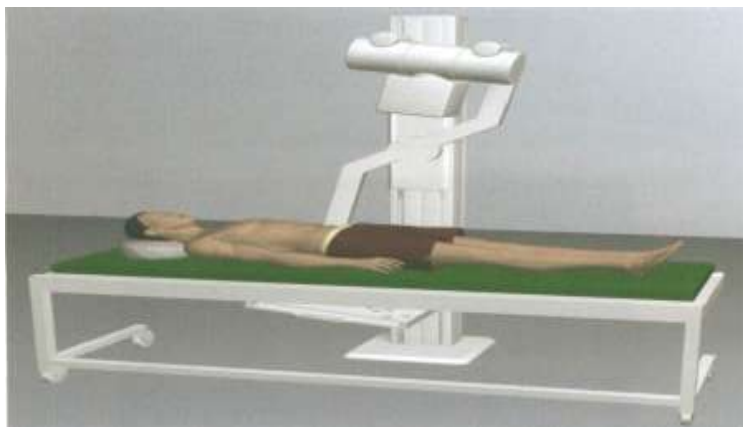
Cassette size

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

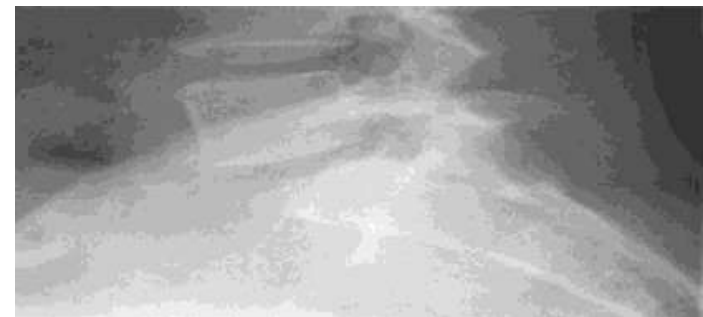
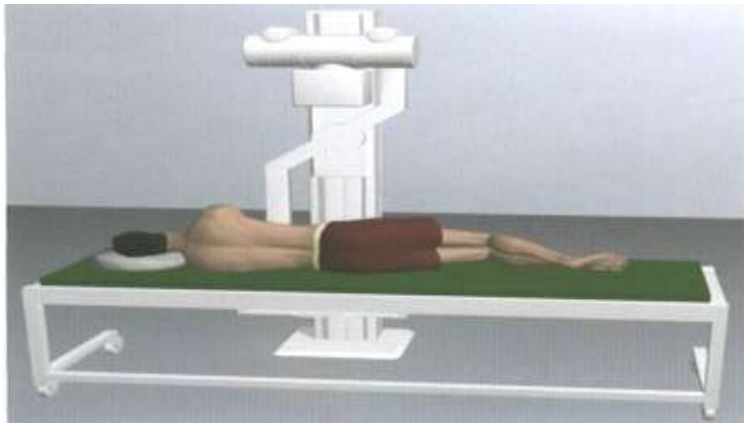


LUMBOSACRAL JUNCTION LATERAL

Do not use for children

Lying on the left (or right) side

BASIC



Kv / mAs	Range for Area
Position	- -
Ray Direction	Angle) (-/+ Horizontal or Vertical
Central Ray	Center of the film =
Bucky	Used or Not used
Other Notes	



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

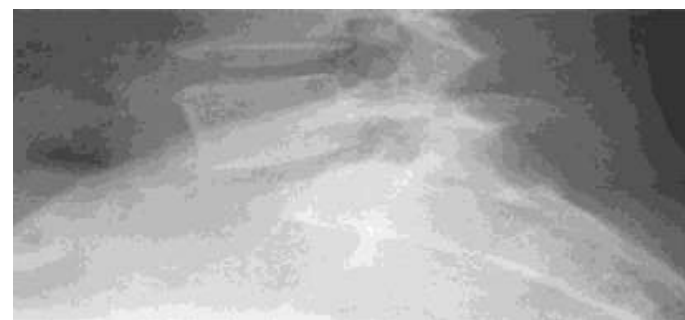
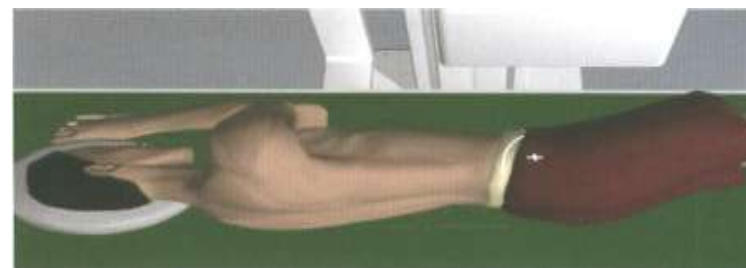
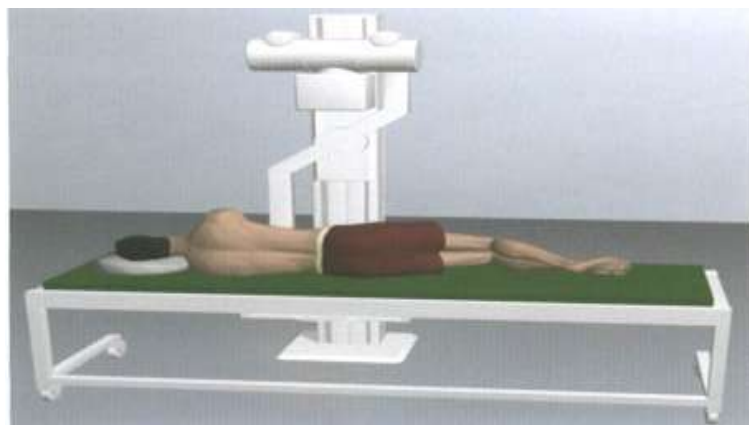
Do not use for children

Cassette speedCassette 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
kV		
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.





.....Home Work





► **WHO Manual** of Diagnostic Imaging.

Radiographic Anatomy and Interpretation of the Musculoskeletal System

https://www.who.int/medical_devices/publications/manual_musculoskeletal_system/en/



THANK YOU

A photograph of a sunset over the ocean. The sun is a bright, glowing orb on the horizon, casting a long, shimmering reflection down the center of the water. The sky is a deep orange and red, with some wispy clouds. In the foreground, the dark silhouettes of several people are visible, looking out at the sea. The overall mood is peaceful and reflective.

A. M. Abdallah

2020