Leg

With some exceptions X-rays of the leg are taken with the patient lying supine.

PELVIS AND HIP JOINT

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INFANTS AND SMALL CHILDREN

25. Pelvis and hip joints AP, page 110

PELVIS AP Supine BASIC

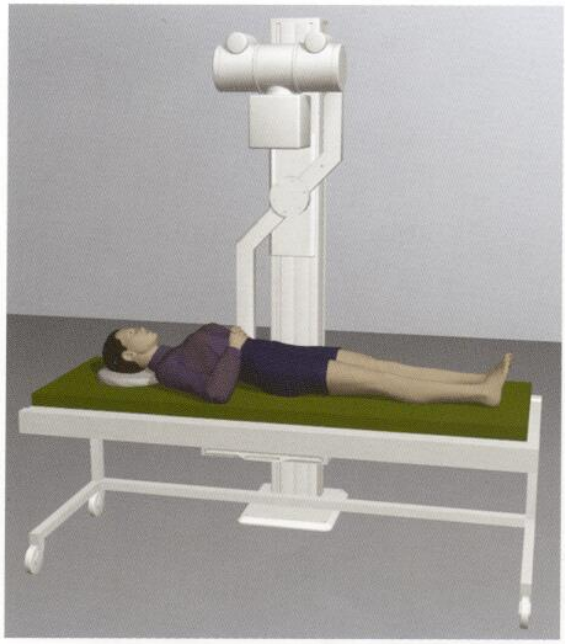
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

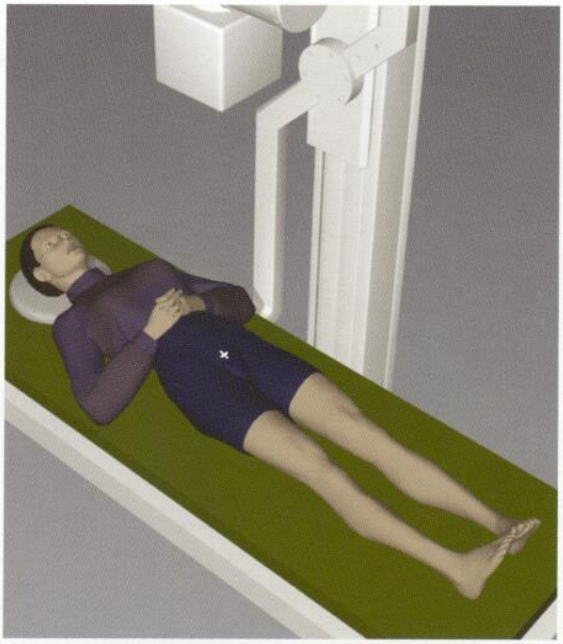
Cassette size
35×43 (14×17 inches)
Use a **R**ight or **L**eft marker

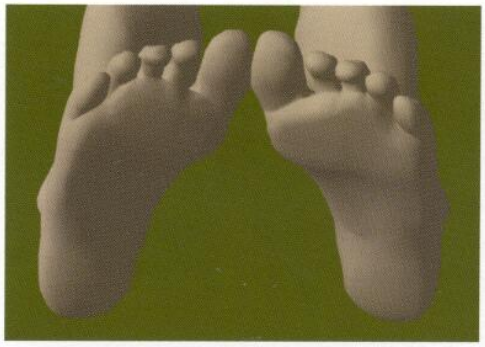
Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	100	50
Range	40–200	20–100

1. Bring in the patient, put the cassette in the cassette holder. Collimate to that format.
2. Position the patient. If the patient is INJURED, do not move the feet.
   If the patient is NOT INJURED, turn the feet with heels apart and toes together as shown.
3. Center 4 cm above the symphysis and collimate further, if possible.
4. Expose.

For INFANTS and SMALL CHILDREN use LEG 25







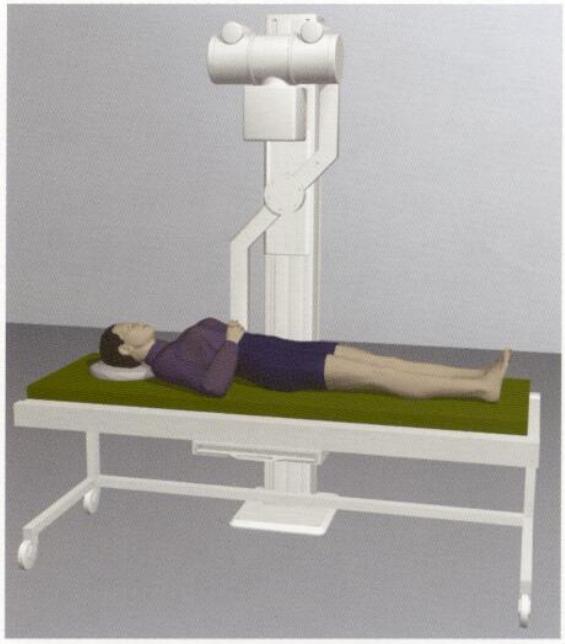
HIP JOINT AP Supine BASIC

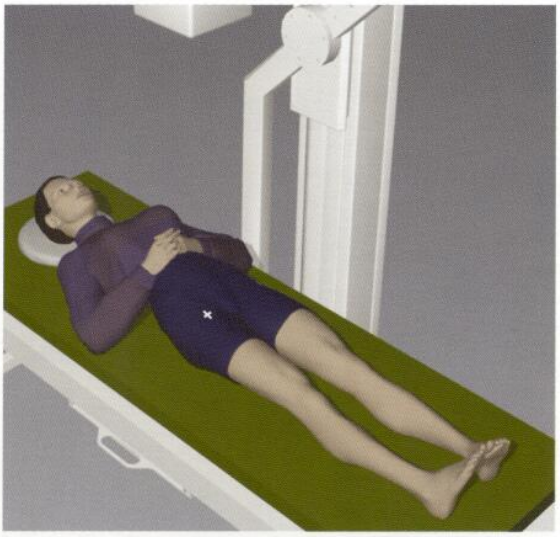
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

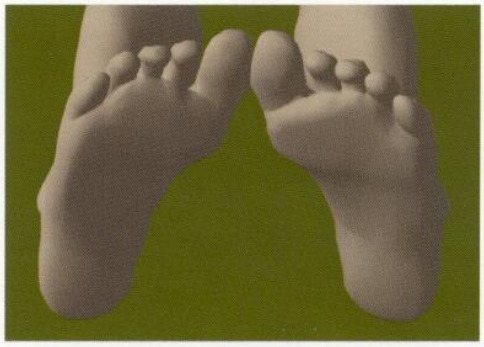
Cassette size
24×30 cm (10×12 inches)
18×24 cm (8×10 inches) for a child
Use a **R**ight or **L**eft marker

Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	125	63
Range	63–250	32–125

1. Bring in the patient, put the cassette in the cassette holder. Collimate to that format.
2. Position the patient. If the patient is INJURED, do not move the feet.
   If the patient is NOT INJURED, turn the feet with heels apart and toes together as shown.
3. Center and collimate further, if possible.
4. Expose.







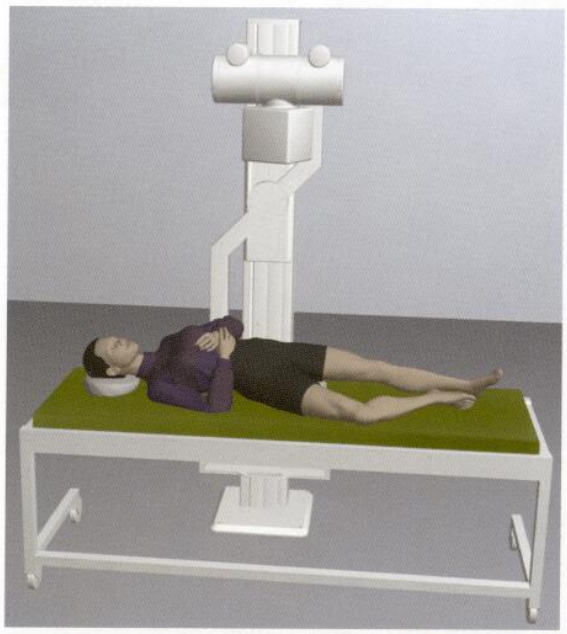
HIP JOINT LATERAL Supine BASIC

If a fracture is suspected, see LEG 4 and LEG 5

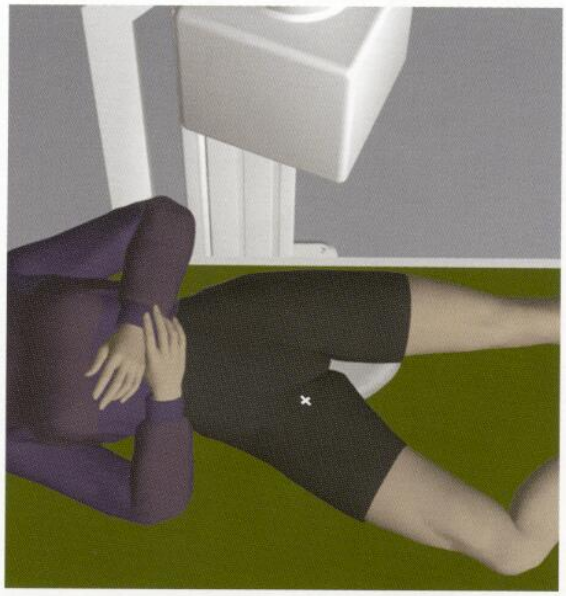
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder

Cassette size
24×30 cm (10×12 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	125	63
Range	63–250	32–125



1. Bring in the patient, put the cassette in the cassette holder. Collimate to that format.
2. DO NOT USE IF the patient is INJURED. Position the patient. Turn the leg and the patient carefully on the side to be x-rayed so that the leg is flat on the table.
3. Center and collimate further, if possible.
4. Expose.



HIP JOINT OBLIQUE LATERAL – if a fracture is suspected Supine ADDITIONAL

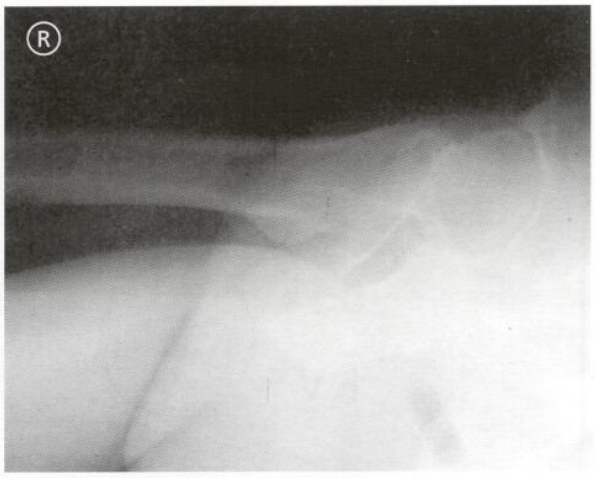
Non-conventional lateral view

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

Exposure values	mAs	
80 kV	"blue" system 200	"green" system 400/450
Average	160	80
Range	100–250	50–160

1. Bring in the patient, put the cassette in the cassette holder. Collimate to that format. This is not the conventional lateral view of the femoral neck.
2. Put the patient and trolley in position, the hip to be examined close to the cassette holder.
3. Angle the tube arm 25° as shown, make sure the lower part of the cassette holder touches the trolley as shown.
4. Center and collimate further, if possible.
5. Expose.



HIP JOINT LATERAL – if a fracture is suspected Supine ADDITIONAL

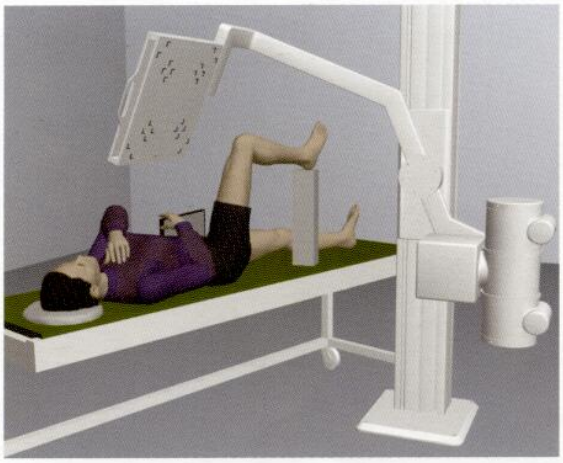
Conventional lateral view

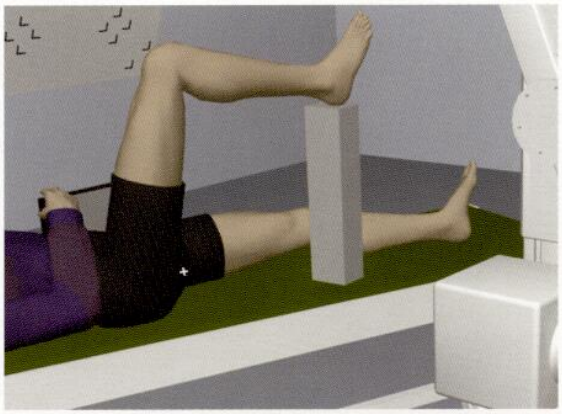
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 on the table with a loose grid

Cassette size
24×30 cm (10×12 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
kV	"blue" system 90 kV; 200	"green" system 80 kV; 400/450
Average	160	125
Range	100–250	80–200

1. Bring in the patient. Place the patient on the trolley. Put the cassette close to the hip to be examined, with the patient supporting it.
2. Angle the tube arm 30° and the tube 30° as shown = horizontal beam.
3. Put the patient and trolley in position, angled 30° as shown, the hip to be examined close to the cassette with 120 cm FFD.
4. Let the patient support the cassette with loose grid.
5. Bend the uninjured leg and support it. Center and collimate.
6. Expose.





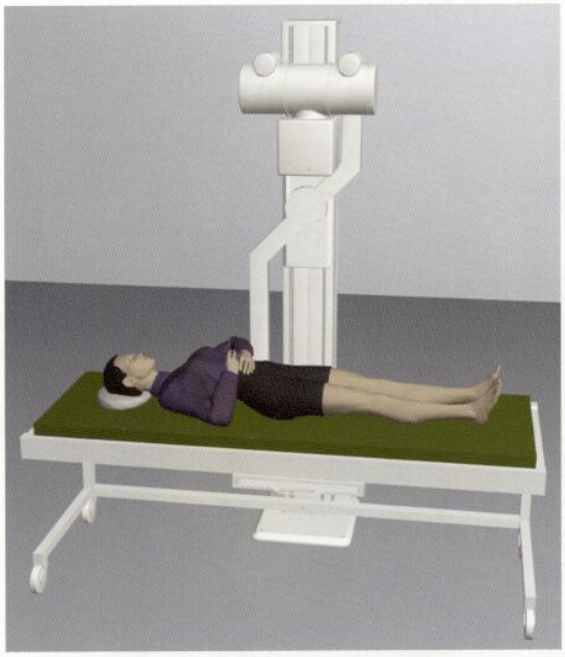
FEMUR AP Supine BASIC

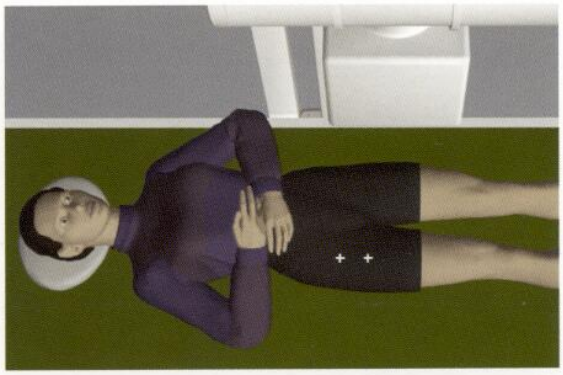
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder.
For a CHILD, cassette **on** the table

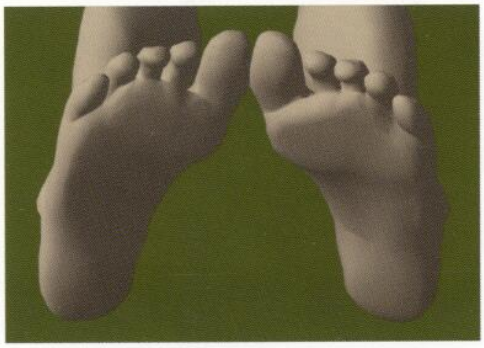
Cassette size
18×43 cm (7×17 inches)
24×30 cm (10×12 inches) for a child
Use a **R**ight or **L**eft marker

Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	50	25
Range	32–100	16–40
Child 53 kV	"blue" system 200	"green" system 400/250
Range	3.2–8	2.5–6.3

1. Bring in the patient, put the cassette in the cassette holder (on the table for a child). Collimate to the format.
2. Position the patient. If the patient is INJURED, do not move the feet. The joint nearest to the injury has to be visible.
   If the patient is NOT INJURED, turn the feet with heels apart and toes together as shown. The hip joint and/or the knee joint should be visible.
3. Center and collimate further, if possible.
4. Expose.







Hip and/or knee joint should be visible

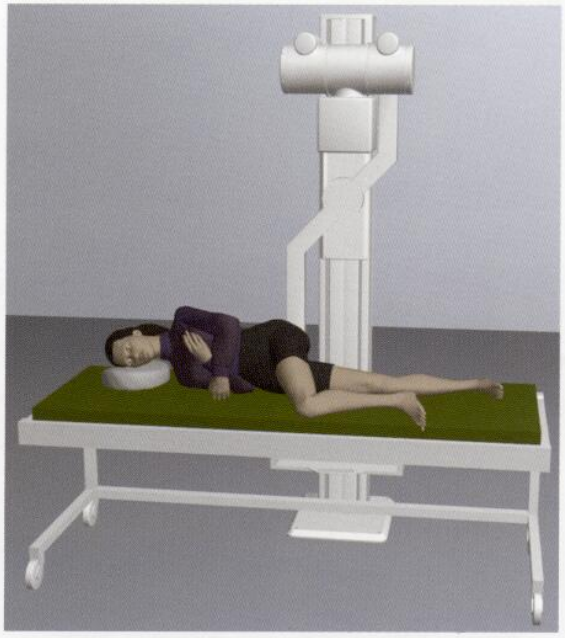
FEMUR LATERAL Lying on the side BASIC

After injury, see LEG 8

Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder.
For a CHILD, cassette **on** the table

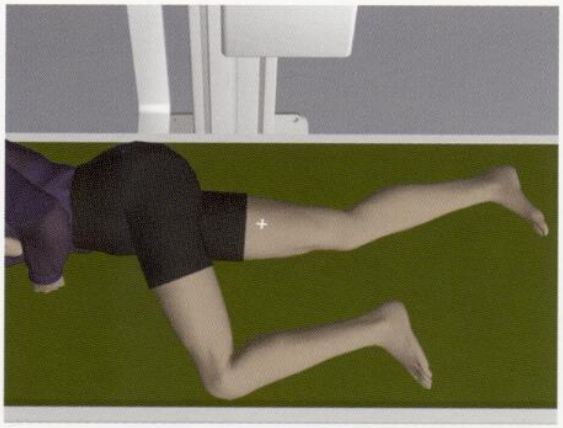
Cassette size
18×43 cm (7×17 inches)
24×30 cm (10×12 inches) for a child
Use a **R**ight or **L**eft marker

Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	50	25
Range	32–100	16–40
Child 53 kV	"blue" system 200	"green" system 400/250
Range	3.2–8	2.5–6.3



1. Bring in the patient, put the cassette in the cassette holder (on the table for a child). Collimate to the format.
2. Position the patient on the side to be examined with the leg straight.
3. Bend the other leg as shown.
4. Center and collimate further, if possible.
5. Expose.

For a lateral view of the upper end of the femur use LEG 4 or LEG 5.

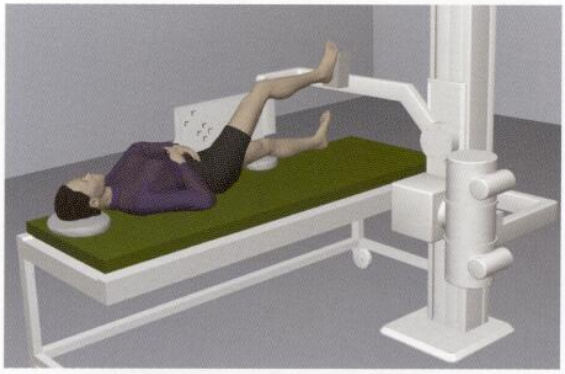


FEMUR LATERAL – after injury Supine – horizontal beam ADDITIONAL

Cassette speed
Cassette with screen-film combination, nominal speed 200/400 in the cassette holder.
For a CHILD, cassette **on** the table

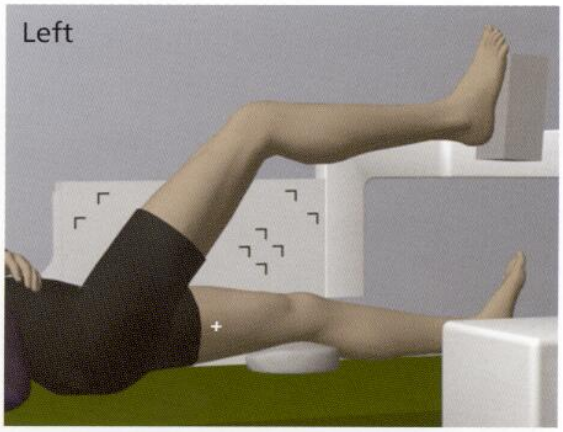
Cassette size
18×43 cm (7×17 inches)
24×30 cm (10×12 inches) for a child
Use a **R**ight or **L**eft marker

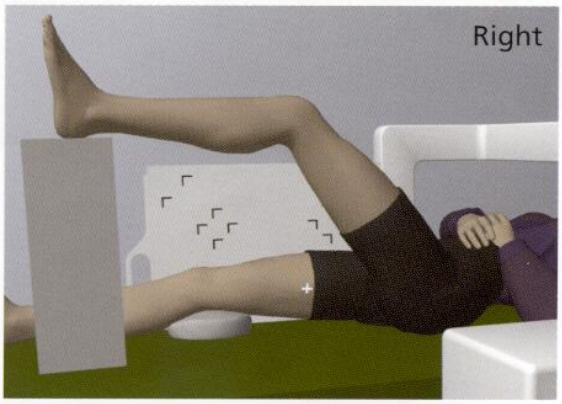
Exposure values	mAs	
70 kV	"blue" system 200	"green" system 400
Average	50	25
Range	32–100	16–40
Child 53 kV	"blue" system 200	"green" system 400/250
Range	3.2–8	2.5–6.3



1. Bring in the patient, put the cassette in the cassette holder (on the table for a child). Collimate to the format.
2. Position the patient with the leg to be examined close to the cassette holder (cassette supported by a foam pad).
3. Bend and support the other leg as shown.
4. Center and collimate further, if possible. Make sure the knee joint is visible on the film.
5. Expose.

For a lateral view of the upper end of the femur use LEG 4 or LEG 5.





KNEE AP Supine BASIC

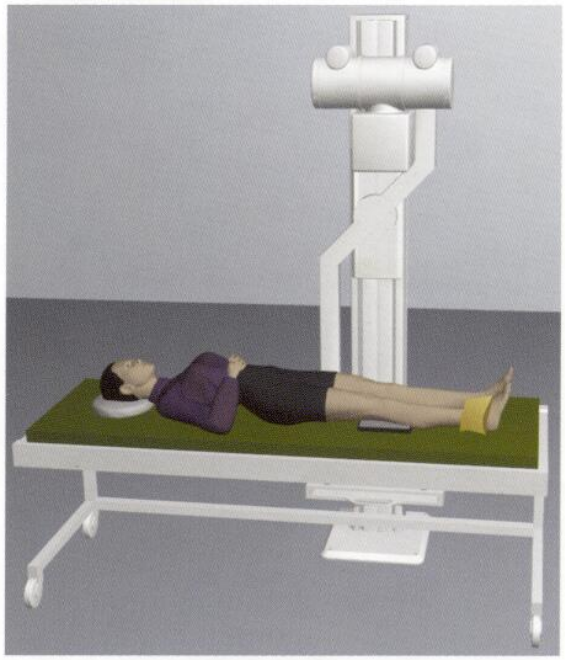
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	50	40
Range	25–80	20–63

1. Bring in the patient, put the cassette on the table. Collimate to that format.
2. Position the patient. If possible, rotate the foot slightly inwards and steady it with a sandbag.
3. Center and collimate further, if possible.
4. Expose. Do knee lateral (LEG 10 or LEG 11) at the same time.

To find small fractures ADDITIONAL OBLIQUE VIEWS (45° rotation) may be ordered by the doctor when AP and LATERAL views have been valued.



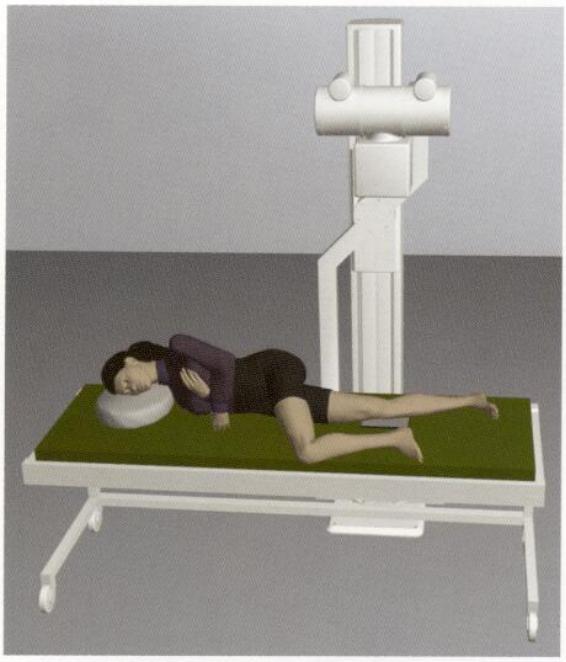
KNEE LATERAL Lying on the side BASIC

After injury, see LEG 11

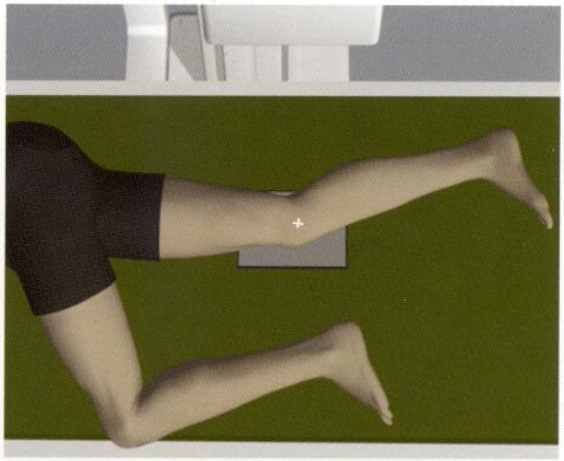
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	50	40
Range	25–80	20–63



1. Bring in the patient, put the cassette on the table. Collimate to that format.
2. Position the patient. Place the patient on the side to be examined with slightly bent knee. Support with a pad under the lower leg. Bend the other knee more and let it rest on the table.
3. Center and collimate further, if possible.
4. Expose.

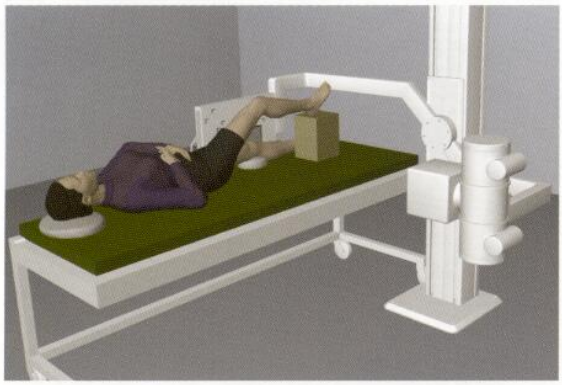


KNEE LATERAL – after injury Supine – horizontal beam ADDITIONAL

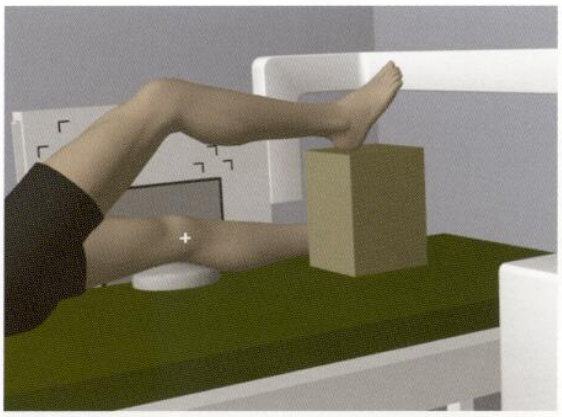
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	50	40
Range	25–80	20–63



1. Bring in the patient, put the cassette on the table. Support the cassette by the side of the casette holder. Collimate to that format.
2. Position the patient with the cassette close to the leg to be examined. The cassette could be supported from the rear by a foam pad.
3. Bend and support the normal leg as shown.
4. Center and collimate further.
5. Expose.



KNEE INTERCONDYLAR SPACE Supine – vertical beam angled 30° as shown

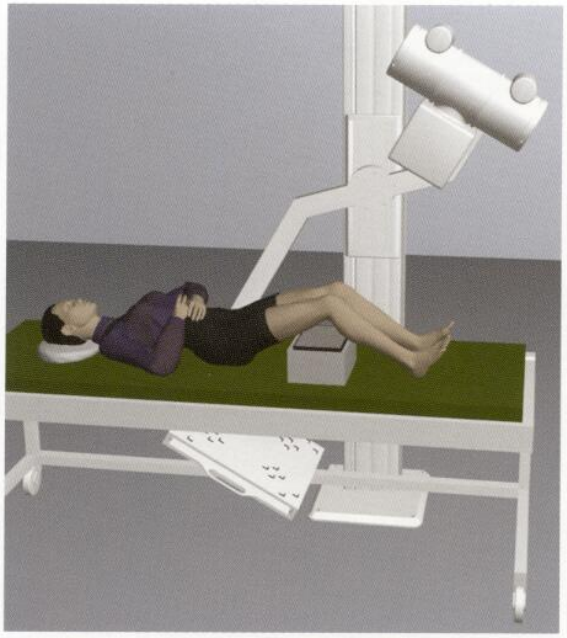
ADDITIONAL

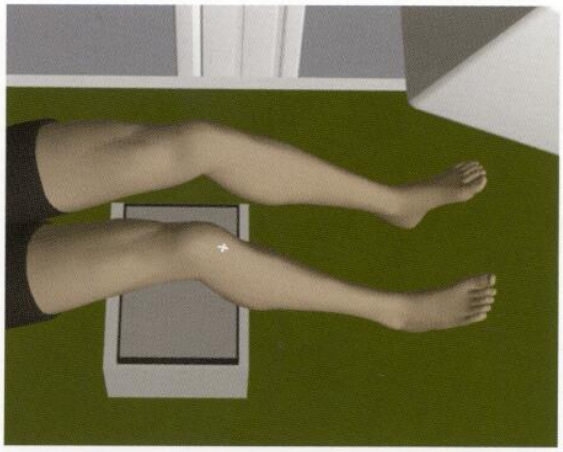
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table on a support

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	40	32
Range	20–63	16–50

1. Bring in the patient. Place the cassette under the knee on a firm support 12–15 cm high as shown. Collimate to that format.
2. Position the patient with the cassette close to the leg to be examined.
3. Center and collimate further, if possible.
4. Expose.





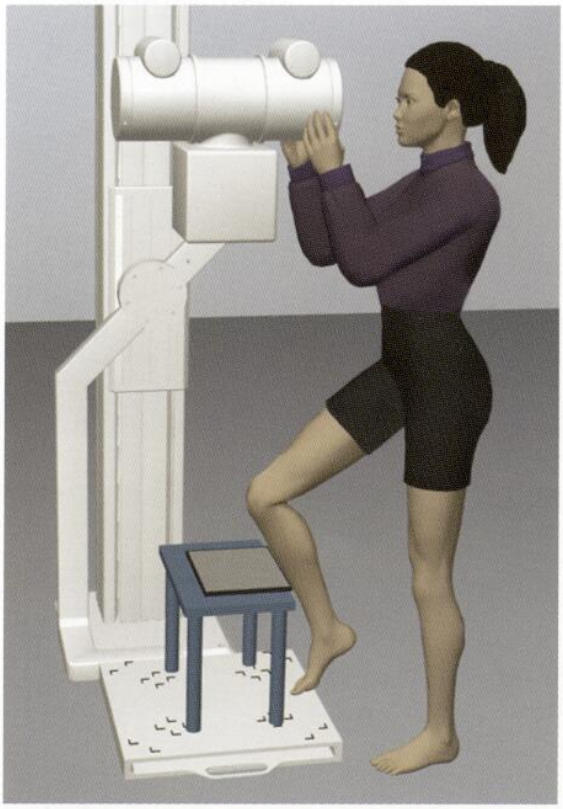
PATELLA AXIAL Standing ADDITIONAL

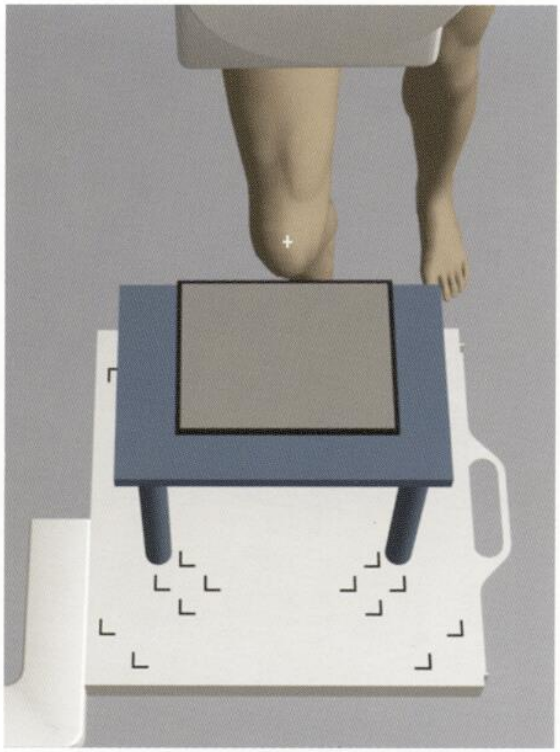
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the casette holder on a support

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	32	25
Range	16–50	12.5–40

1. Bring in the patient. Place the cassette on top of the cassette holder on an about 25 cm high support as shown. Collimate to that format.
2. Position the patient with the cassette close to the leg to be examined.
3. Center and collimate further.
4. Expose.





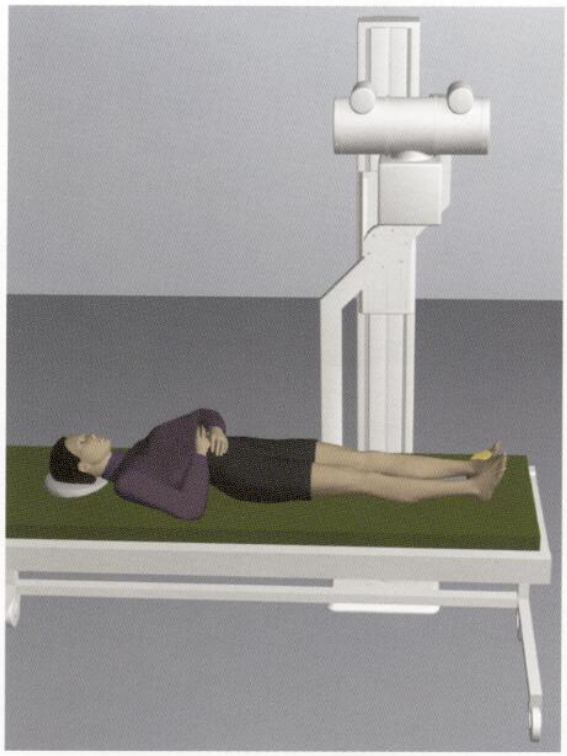
LOWER LEG AP Supine BASIC

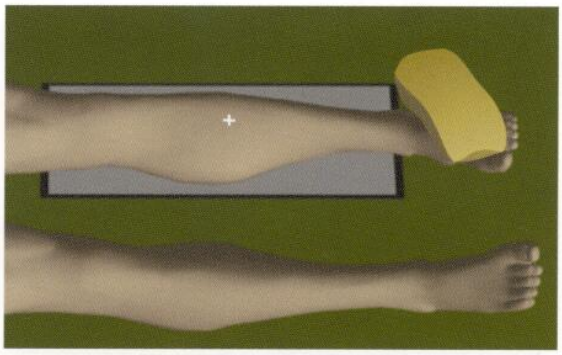
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

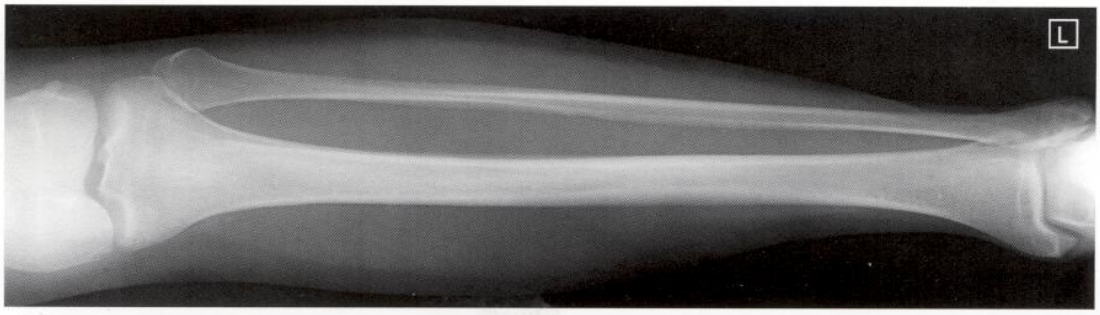
Cassette size
18×43 cm (7×17 inches)
35×43 cm (14×17 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs (average)	
53 kV	"blue" system 50	"green" system 100 /63
Including knee	40	32
Including ankle	25	20

1. Bring in the patient, put the cassette on the table. Collimate to that format.
2. Position the patient. If possible, rotate the foot slightly inwards and steady it with a sandbag.
3. Center and collimate further, if possible. At least one joint should be shown on the film. If injured the joint nearest the injury is to be visible. If the leg is in plaster, increase the exposure as shown in page 123.
4. Expose. Do leg lateral (LEG 15 or LEG 16) at the same time.







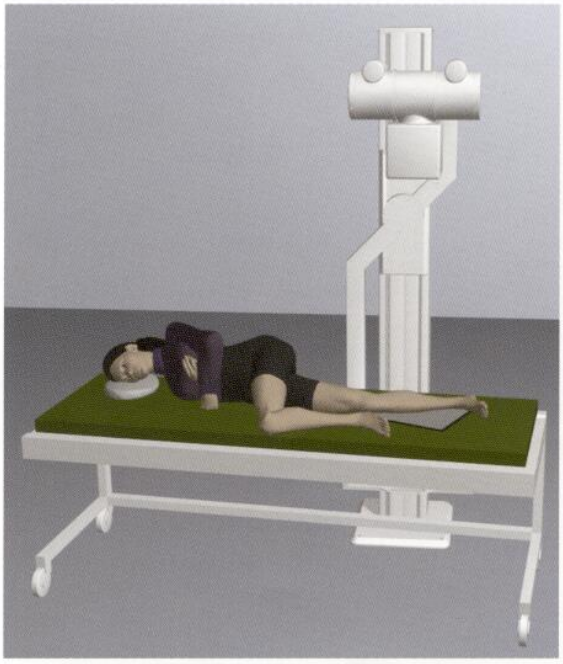
LOWER LEG LATERAL Lying on the side BASIC

If a fracture is suspected, use LEG 16

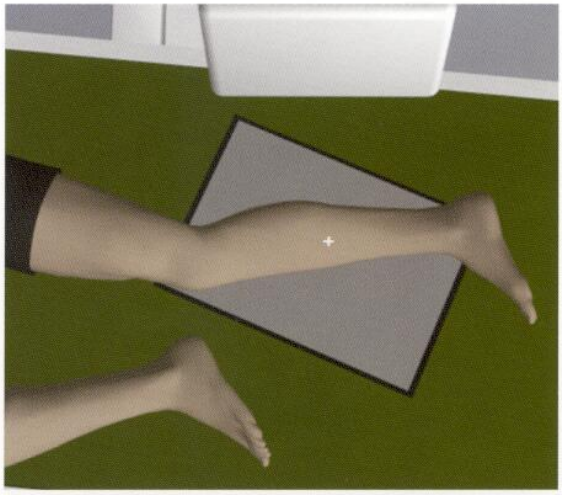
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

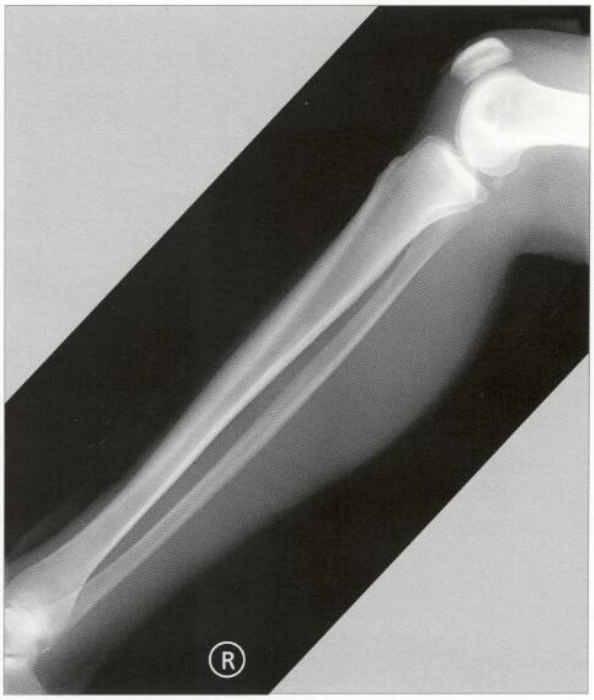
Cassette size
18×43 cm (7×17 inches)
35×43 cm (14×17 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs (average)	
53 kV	"blue" system 50	"green" system 100 /63
Including knee	40	32
Including ankle	25	20



1. Bring in the patient, put the cassette on the table. Collimate to the format.
2. Place the patient on the side to be examined with slightly bent knee directly on the cassette. Bend the other knee more and let it rest on the table.
3. Center and collimate further. At least one joint should be visible on the film. If the leg is in plaster, increase the exposure as shown in page 123.
4. Expose.





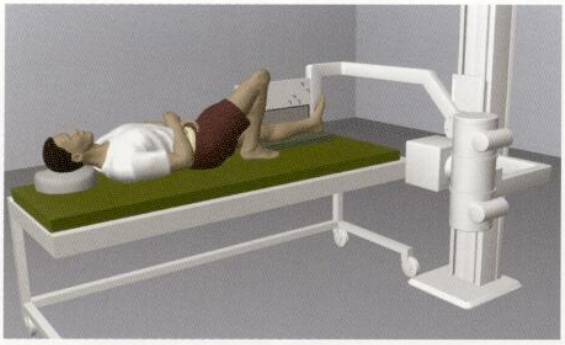
LOWER LEG LATERAL – after injury Supine – horizontal beam ADDITIONAL

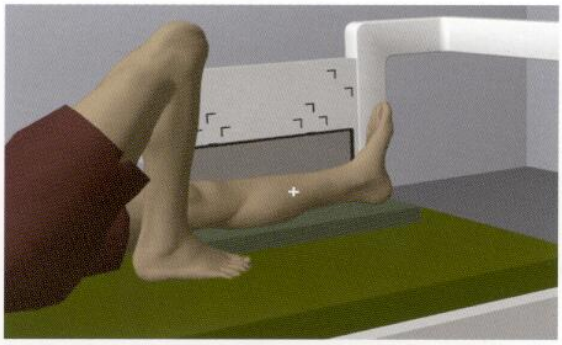
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

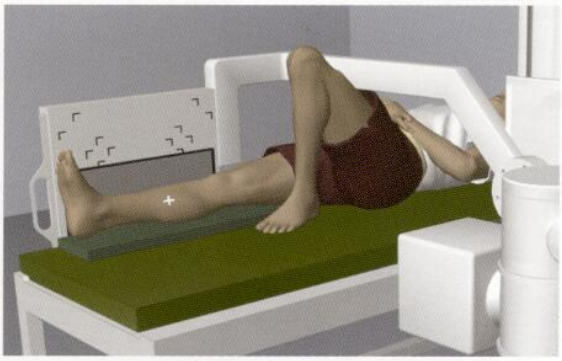
Cassette size
18×43 cm (7×17 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs (average)	
53 kV	"blue" system 50	"green" system 100 /63
Including knee	40	32
Including ankle	25	20

1. Bring in the patient, put the cassette on the table. Support the cassette by the side of the cassette holder.
2. Collimate to the format.
3. Position the patient. If possible, rotate the foot slightly inwards and steady it with a sandbag. If there are splints on the injured leg, leave them on. Bend the UNINJURED knee as shown and let it rest on the table.
4. Center and collimate further. At least one joint should be visible on the film. The joint nearest to the injury should be visible. If the leg is in plaster, increase the exposure as shown in page 123.
5. Expose.







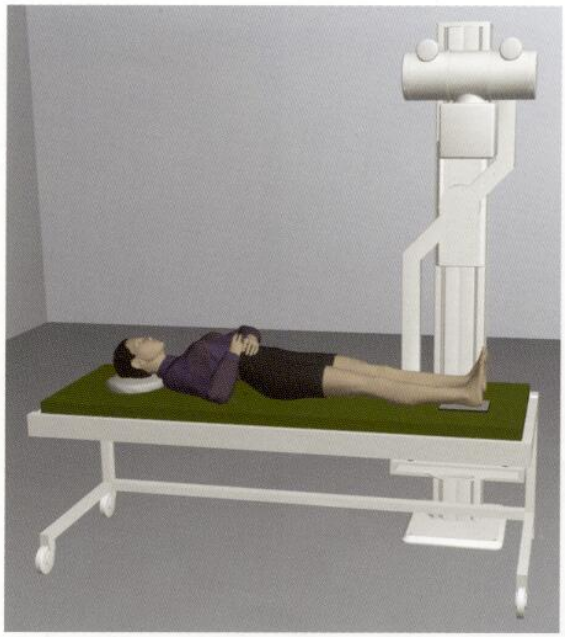
ANKLE JOINT INTERNAL OBLIQUE **Supine** BASIC
and **ANKLE JOINT AP** **Supine** ADDITIONAL

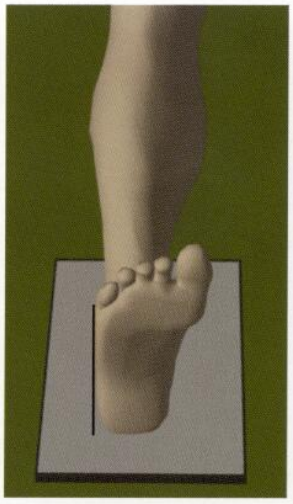
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

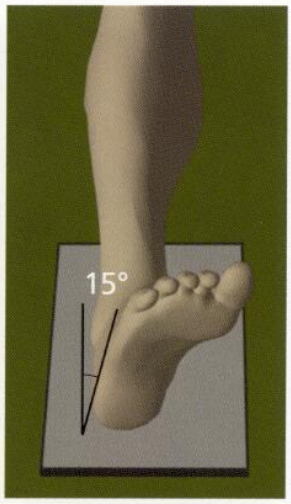
Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100 /63
Average	25	20
Range	16–50	12.5–40

1. Bring in the patient, put the cassette on the table. Collimate to that format.
2. Position the patient, sitting or lying down. For internal oblique rest the patients heel on the cassette and turn the foot inwards at a 15° angle. For AP (only when requested by the doctor) keep the foot straight up.
3. Center and collimate further.
4. Expose.





AP
ADDITIONAL



Internal oblique
BASIC

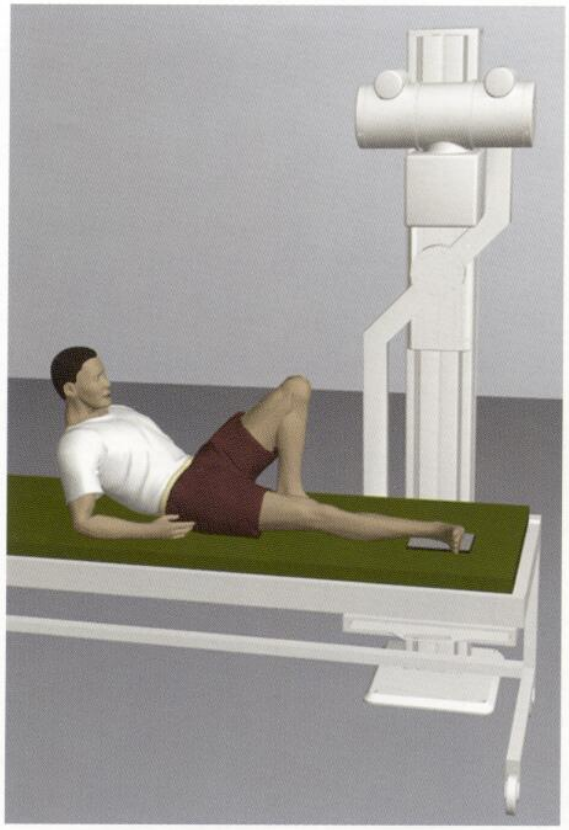
ANKLE JOINT LATERAL Supine BASIC
and ANKLE JOINT EXTERNAL OBLIQUE Supine ADDITIONAL

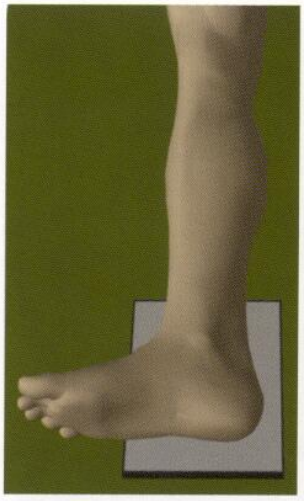
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

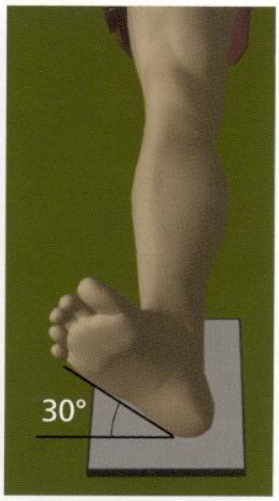
Exposure values	mAs	
53 kV	"blue" system 50	"green" system 50/100
Average	20/25	16/20
Range	16–50	12.5–40

1. Bring in the patient, put the cassette on the table. Collimate to the format.
2. Position the patient, sitting or lying down. For lateral, rotate the patient's leg outwards so that the foot rests against the cassette. For external oblique (only when requested by the doctor), rest the patients heel on the cassette and rotate outwards so that the foot is in 30° angle to the cassette.
3. Center and collimate further.
4. Expose.





Lateral
BASIC



External oblique
ADDITIONAL

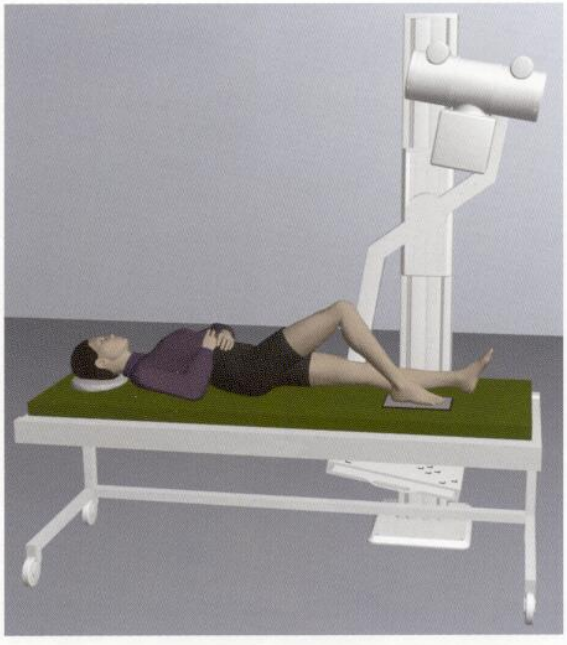
FOOT AP and TOES AP Supine – vertical beam angled 10° as shown BASIC

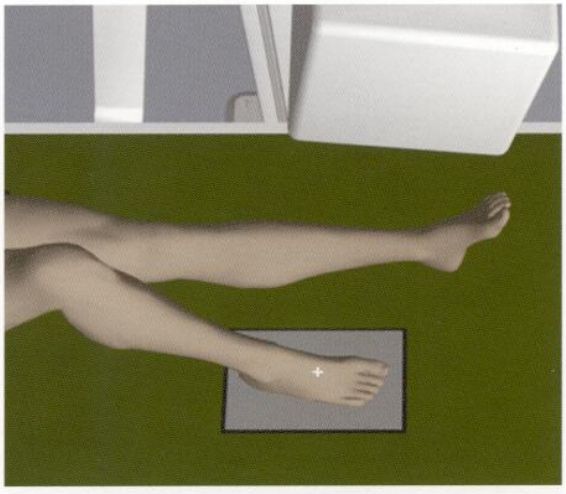
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
46 kV	"blue" system 50	"green" system 100/50
Average	25	25
Range	20–64	20–64
Toes	10	10

1. Bring in the patient, put the cassette on the table. Collimate to the format.
2. Position the patient, sitting or lying down. The foot rests flat on the cassette with the patients leg bent.
   Center and collimate further.
3. Use half of the mAs values for toes only.
4. Expose.





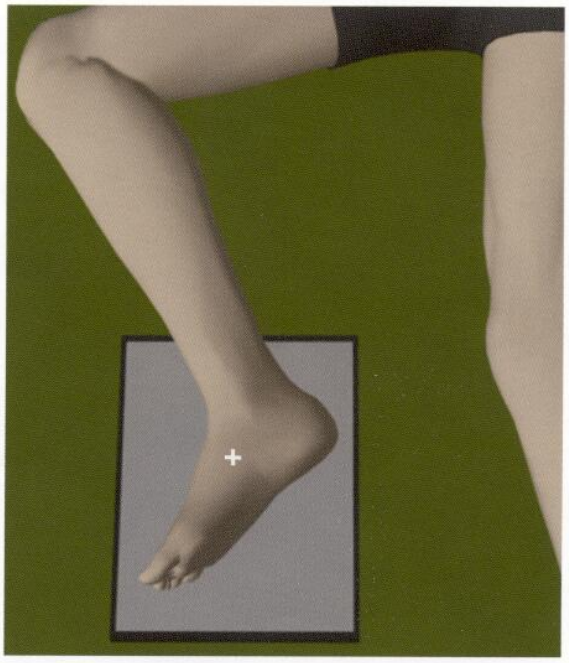
FOOT LATERAL Lying on the side ADDITIONAL

Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
24×30 cm (10×12 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
46 kV	"blue" system 50	"green" system 100/50
Average	25	25
Range	20–64	20–64

1. Bring in the patient, put the cassette, small for a small foot, large for a large foot on the table. Collimate to the format.
2. Position the patient, lying down on the side to be examined with the knees bent as shown. Center and collimate further.
3. Expose.



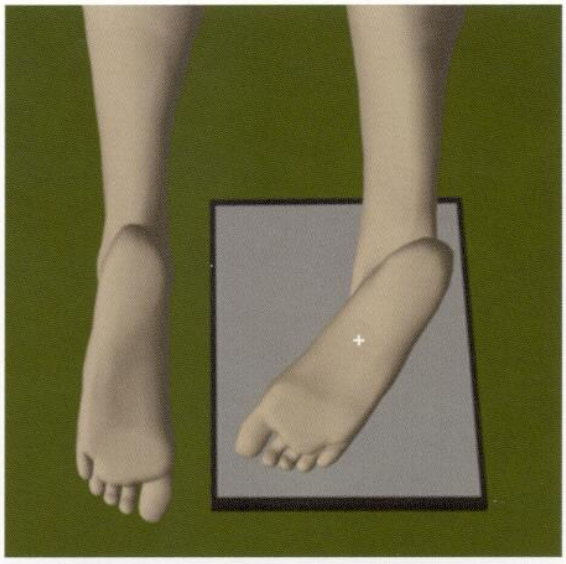
FOOT PA OBLIQUE Prone BASIC

Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
24×30 cm (10×12 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
46 kV	"blue" system 50	"green" system 100/50
Average	25	25
Range	20–64	20–64

1. Bring in the patient, put the cassette, small for a small foot, large for a very large foot, on the table. Collimate to the format.
2. Position the patient, lying prone on the table as shown. Center and collimate further.
3. Expose.



FOOT AP OBLIQUE Sitting on the table – vertical beam angled 15° as shown

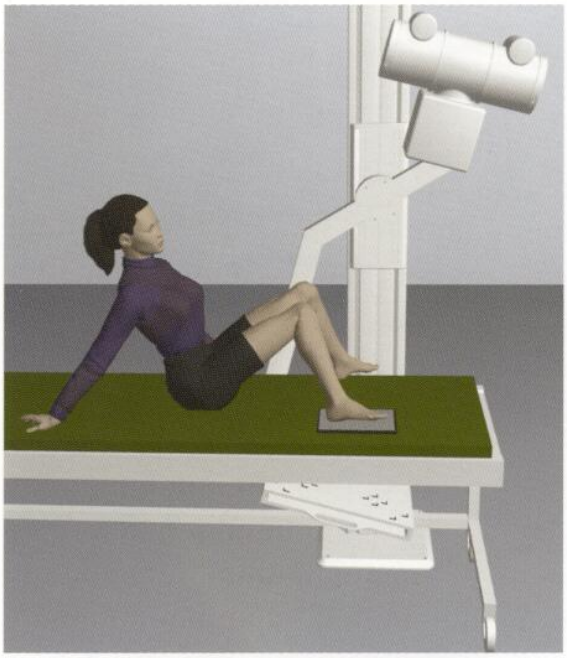
ADDITIONAL

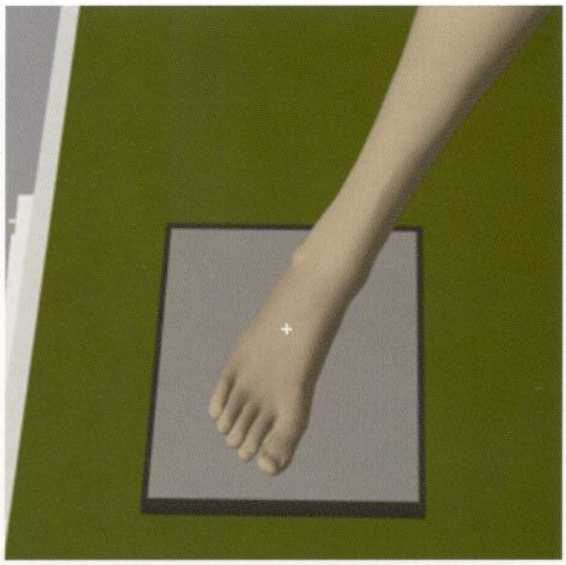
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18x24 cm (7x9 inches)
24x30 cm (9x12 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
46 kV	"blue" system 50	"green" system 100/50
Average	25	25
Range	20–64	20–64

1. Bring in the patient, put the cassette, small for a small foot, large for a very large foot, on the table. Collimate to the format.
2. Position the patient, angle the foot as shown. Center and collimate further.
3. Expose.





HEEL SEMIXIAL Supine – vertical beam angled 30° as shown BASIC

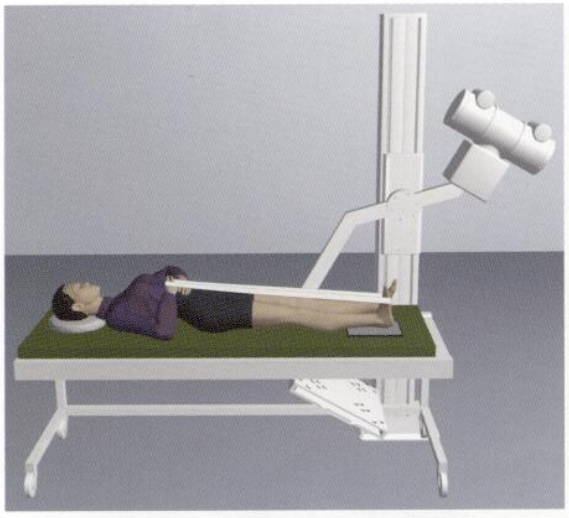
Lateral view, use LEG 18, but centre over the heel.

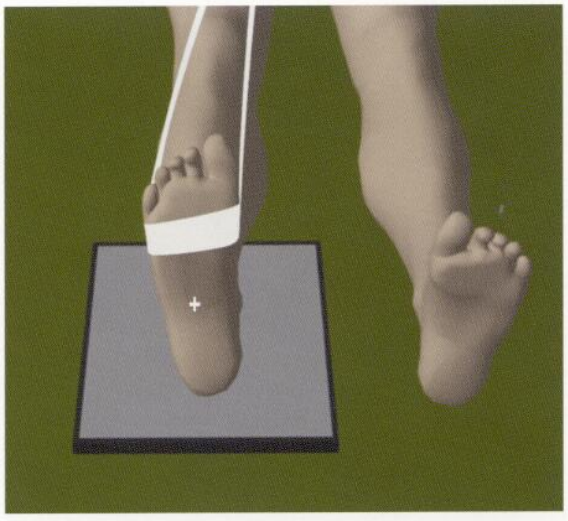
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 on the table

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 50	"green" system 100/63
Average	25	20
Range	16–40	12.5–32

1. Bring in the patient, put the cassette on the table. Collimate to the format. Angle 30° as shown.
2. Position the patient; the foot should be pulled up as shown by means of a string held by the patient.
3. Center and collimate further.
4. When the patient is INJURED use either this position or that shown for LEG 24, whichever causes the least pain.
5. Expose.





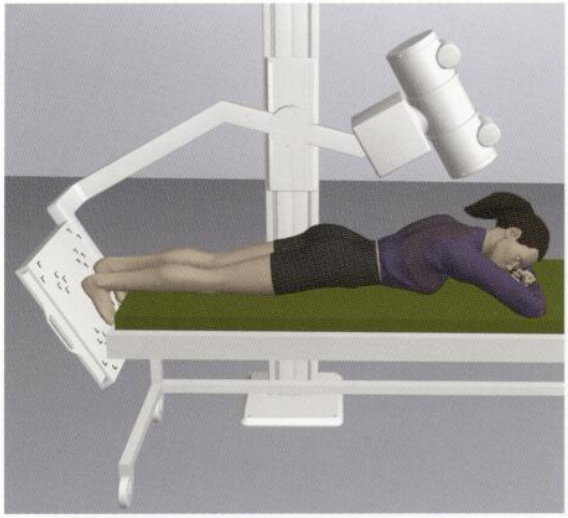
HEEL SEMIXIAL Prone – beam angled 60° as shown ADDITIONAL

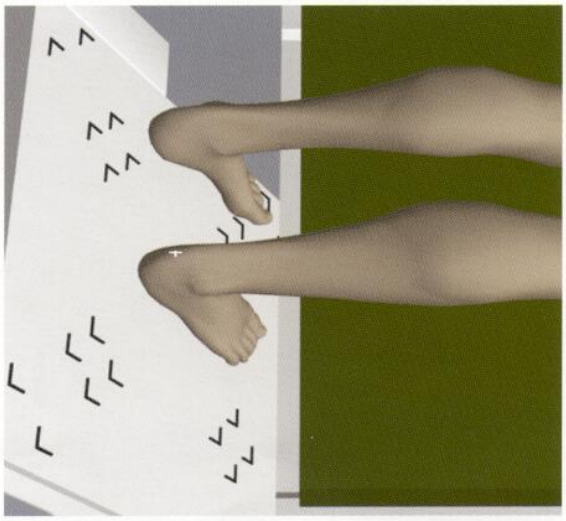
Cassette speed
Cassette with screen-film combination, nominal speed 50/100 in the cassette holder

Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
70 kV	"blue" system 50	"green" system 100
Average	64	32
Range	40–100	20–50

1. Bring in the patient, put the cassette in the cassette holder. Collimate to the format. Angle 60° as shown.
2. Position the patient, prone, the toes against the cassette holder.
   Center and collimate further.
3. When the patient is INJURED use either this position or that shown for LEG 23, whichever causes the least pain.
4. Expose.





PELVIS AND HIP JOINTS AP Supine BASIC

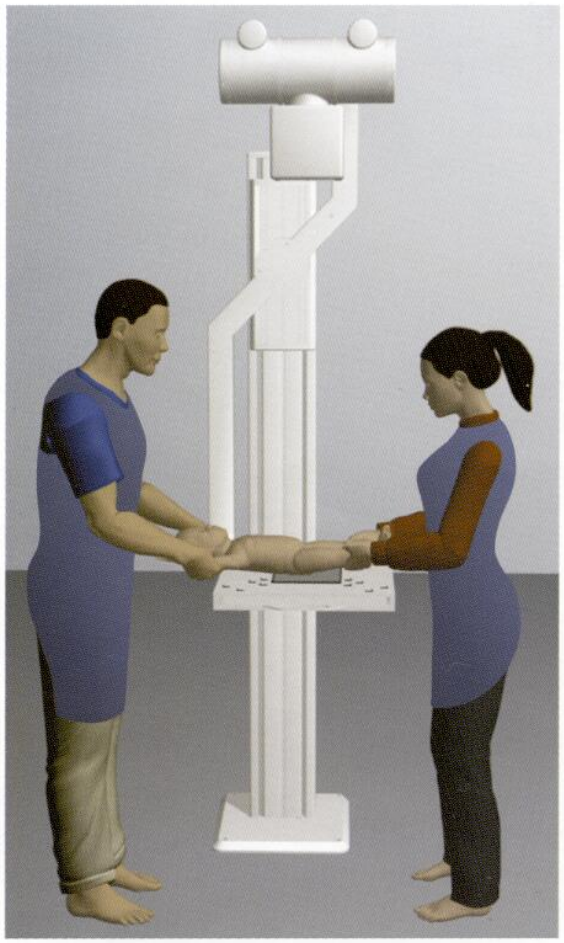
Infants and small children

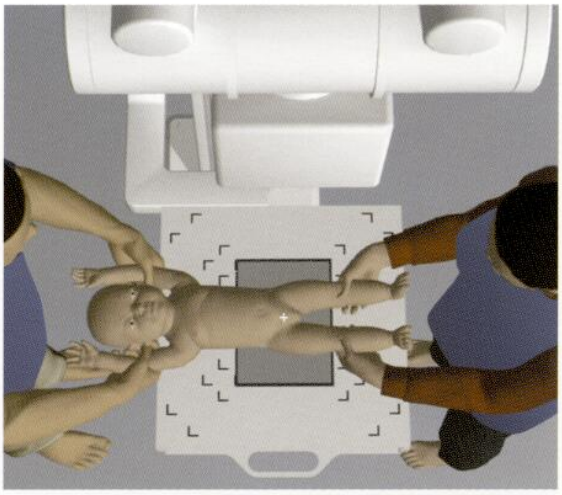
Cassette speed
Cassette with screen-film combination, nominal speed 200/400 on the cassette holder

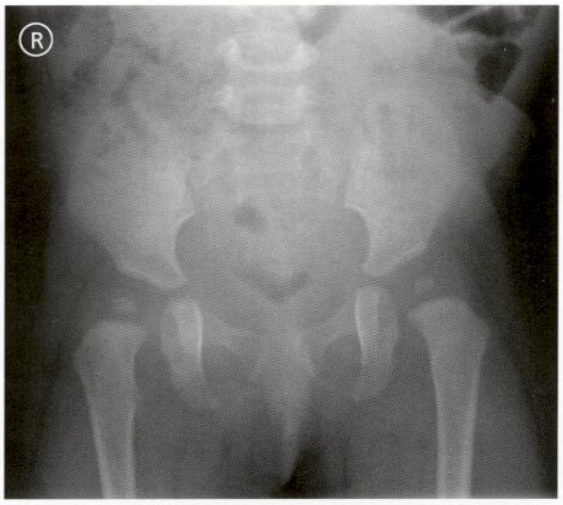
Cassette size
18×24 cm (8×10 inches)
Use a **R**ight or **L**eft marker

Exposure values	mAs	
53 kV	"blue" system 200	"green" system 400/250
Average	6.3	5
Range	4–12.5	3.3–10

1. Bring in the patient, place the cassette on top of the cassette holder. Collimate to the format.
2. The child must be supported by the legs (knee joints) and either the arms or the body. Those supporting the child, preferably the PARENTS, MUST WEAR LEAD APRONS and, whenever possible, LEAD GLOVES.
3. Lie the child on its back on the cassette. Strech the legs. Centre a little above the pubic symphysis and collimate further.
4. Expose when the child is not moving.







Comments

The persons holding the child must wear lead aprons and, if possible, lead gloves.