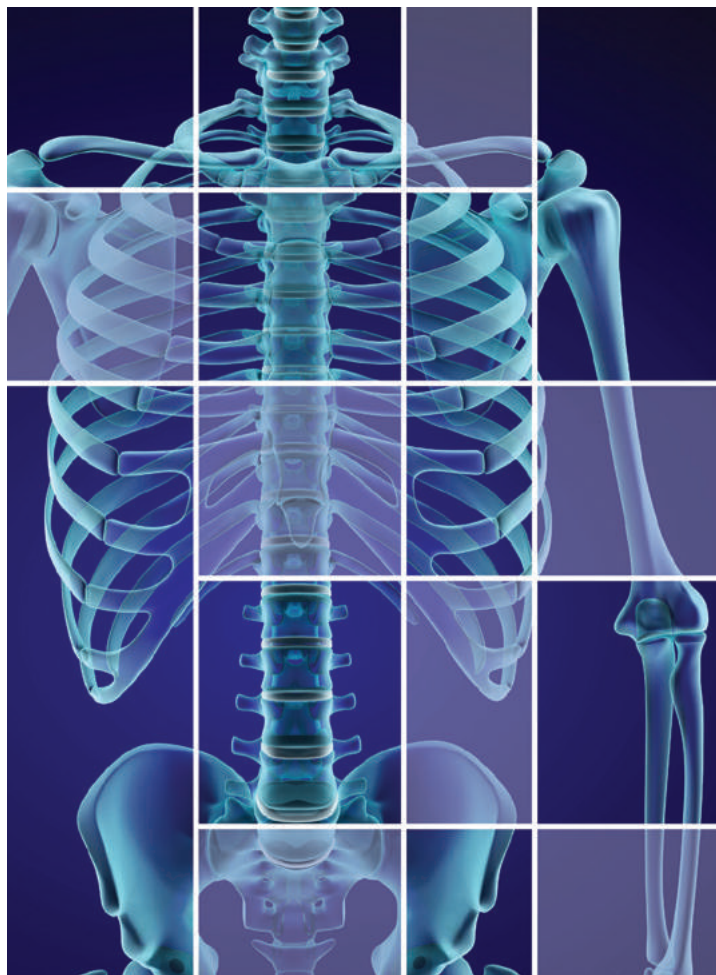


# Basic Radiological Technician

## Positioning Manual



Ontario Association of  
Medical Radiation Sciences



# BRT Positioning Routines for Nunavut Communities

The following images should be completed with each examination ordered:

## CHEST

- PA or AP
- Lateral

If the patient cannot be positioned for the lateral view due to immobility or unconsciousness, then complete one view of the following:

- AP – upright
- AP – Semi Erect
- AP – Supine

## FINGER

- PA
- Oblique
- Lateral

## THUMB

- Oblique
- Lateral
- AP

## HAND

- PA
- Oblique
- Lateral

## WRIST

- PA
- Oblique
- Lateral

## SCAPHOID

- PA with ulnar flexion

## FOREARM

- AP
- Lateral

## ELBOW

- AP
- Lateral

## ELBOW (TRAUMA)

- AP (forearm in contact)
- AP (humerus in contact)
- Lateral (partial flexion)

## HUMERUS (NON - TRAUMA)

- AP
- Lateral

## HUMERUS (TRAUMA)

- AP
- Lateral

## SHOULDER (NON-TRAUMA)

- AP (external rotation)
- AP (internal rotation)
- Axial

## SHOULDER or SCAPULA (TRAUMA)

- AP
- Lateral – Transcapular Y

## CLAVICLE

- AP
- AP 30 degree

## ACROMIO-CLAVICULAR JOINTS

- AP

## TOES

- AP (dorsiplantar)
- Lateral

## FOOT

- AP (dorsiplantar)
- Oblique
- Lateral

## CALCANEUS / OS CALCIS (HEEL)

- Axial
- Lateral

## ANKLE

- AP
- Oblique
- Lateral

## TIBIA and FIBULA

- AP
- Lateral

## KNEE

- AP
- Lateral

## PATELLA

- Axial (skyline)

## PELVIS/ABDOMEN

- AP Upper and Lower abdomen

## SUPPLEMENTARY VIEWS

*Lower Extremity Shoot-Thru's*

- Lateral – Ankle (shoot-thru)
- Lateral – Tibia-Fibula (shoot-thru)
- Lateral – Knee (shoot-thru)

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# POSITIONING TERMINOLOGY

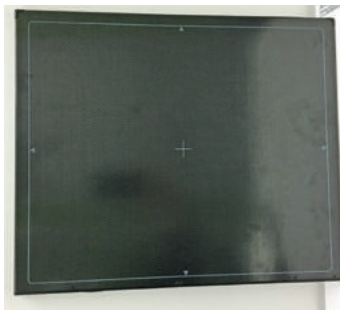
AP (Anteroposterior)	X-rays enter the front (anterior) and come out of the back (posterior) of the body part.
PA (Posteroanterior)	X-rays enter the back (posterior) and come out of the front (anterior) of the body part.
Lateral	X-rays enter from the lateral aspect of the body or body part.
Axial	X-rays enter patient at an angle.
Oblique	The patient or body part is rotated and x-rays enter the body from either the AP or PA aspect.
DP (Dorsiplantar)	X-rays enter from top (dorsum) of foot, and exit at the bottom (plantar surface) of foot.
Dorsiflexion	Flex foot towards head, so that tibia and fibula and foot are at 90°.
Ulnar Flexion	The wrist joint is flexed so that hand and fingers move towards the ulnar aspect.
SID	Source Image Distance (Distance between x-ray tube and the image receptor).
Cephalad	X-ray tube angled towards the patient's head.
Caudad	X-ray tube angled towards the patient's feet.

# Image Receptor (IR) Placement

Lengthwise / Portrait – IR is placed vertically



Crosswise / Landscape – IR is placed horizontally (sideways)



## Image Markers

Right or Left image markers must be placed in the light field of every image, not obstructing any anatomy



# FINGER

PA:	SID 40"
Oblique:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron and thyroid collar

## PA

Position:	Hand flat in centre of IR. Palm side down.
Centre:	Where injured finger joins the hand, at the head of the metacarpal. (Include finger on each side and full length of metacarpals.)
Instructions:	HOLD STILL

**R**

**L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Oblique – Finger

Position:	Hand at 45° to IR, with palm facing IR. Injured finger parallel to IR. Other fingers moved out of the way. Little finger is on the IR. Use small 45° sponge or finger sponge, if required.
Centre:	Where injured finger joins the hand, at the head of the metacarpal. (Include finger on each side and full length of metacarpals.)
Instructions:	HOLD STILL

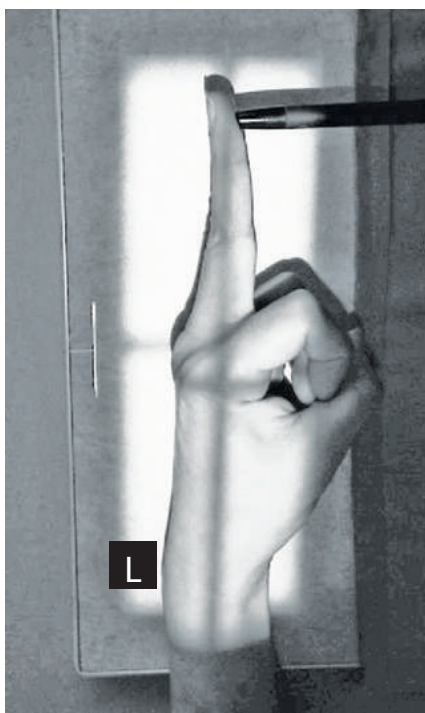


## Lateral – Finger

**Position:** Hand on side, medial aspect closest to IR for digits 3 - 5 lateral aspect closest to IR for digits 1-2.  
Move other fingers out of the way.  
e.g. If you are positioning the index finger, turn the hand inwards so that the lateral surface of the index finger is in contact with the IR.  
Use sponge to support injured finger if necessary.

**Centre:** Where injured finger joins the hand, at the head of the metacarpal  
(Include injured finger only.)

**Instructions:** HOLD STILL





# THUMB

Oblique:	SID 40"
Lateral:	SID 40"
AP:	SID 40"
IR:	Portrait
Protection:	Full apron and thyroid collar

## Oblique – Thumb

Position:	Palm flat in center of IR, hand extended away from thumb.
Centre:	At base of thumb (where thumb joins hand) (Include metacarpal on image)
Instruction:	HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral – Thumb

Position: Raise fingers so thumb is on side.  
Support fingers on small sponge.

Centre: At base of thumb  
(where thumb joins hand)  
(include metacarpal on image)

Instruction: HOLD STILL



## AP – Thumb

**Position:** Turn hand inward so back of thumb is against IR with arm fully extended.

**Centre:** At base of thumb (where thumb joins hand),  
at the head of metacarpal.  
(Include metacarpal on your image)

**Instructions:** HOLD STILL

**Measure:** At the base of the thumb (where thumb joins the hand).  
(Include metacarpal on image).



# HAND

PA:	SID 40"
Oblique:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron and thyroid collar

## PA

Position:	Hand with palm flat on IR. Fingers slightly separated.
Centre:	At base of third finger (where finger joins hand), at the head of the metacarpal.
Instructions:	HOLD STILL

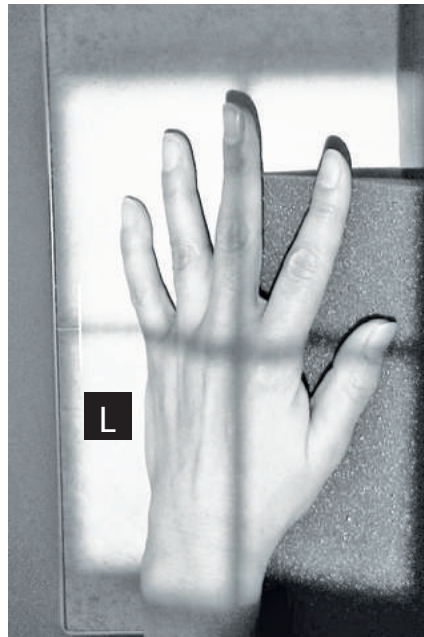
**R L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Oblique – Hand

Position:	Palm facing IR at 45° angle, little finger down. Spread fingers slightly. Keep fingers as parallel to IR as possible. Use small 45° sponge or finger sponge if required.
Centre:	At base of third finger (where finger joins hand), at the head of the metacarpal.
Instructions:	HOLD STILL



## Lateral – Hand

**Position:** Hand on side, little finger down.  
Fingers fanned apart.  
Knuckle of index finger superimposed on knuckle of little finger.

**Centre:** At base of index finger (where finger joins the hand).

**Instructions:** HOLD STILL



# WRIST

PA:	SID 40"
Oblique:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron and thyroid collar

## PA

Position:	Wrist flat, placed in centre of IR.
Centre:	At wrist joint.
Collimation:	To include distal radius/ulna and metacarpals.
Instructions:	HOLD STILL.



Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Oblique – Wrist

Position: Palm facing cassette at 45° angle, little finger resting on IR. Support on 45° small sponge if required.

Centre: At wrist joint.

Collimation: Same as position

Instructions: HOLD STILL





## Lateral – Wrist

**Position:** Hand and wrist on side, little finger down. (In centre of IR)  
Turn wrist back about 5° to superimpose the styloid processes.  
(Knuckle of index finger superimposed on knuckle of little finger).

**Centre:** At wrist joint.

**Instructions:** HOLD STILL



# SCAPHOID

**\*\*OPTIONAL VIEW DO ONLY ON THE SPECIAL REQUEST OF THE PHYSICIAN  
AFTER THREE VIEWS OF THE WRIST\*\***

PA with ulnar flexion: SID 40"

IR: Portrait

Protection: Full apron and thyroid collar

## PA with ulnar flexion

Position: Wrist flat, palm down, in ulnar flexion. (In centre of IR)  
(Carefully turn fingers towards ulna as much as comfortable.)

Centre: At Scaphoid  
(2 cm distal and medial to radial styloid)

Instructions: HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



# FOREARM

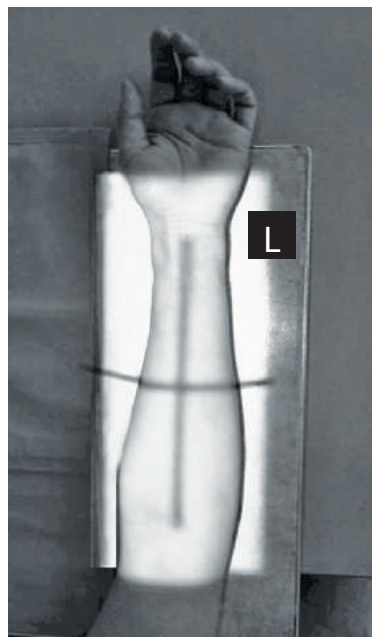
AP:	SID 40"
Lateral:	SID 40"
IR:	Lengthwise / portrait
Protection:	Full apron and thyroid collar

## AP

Position:	Arm extended, palm up, with elbow and wrist in AP position, in middle of IR. Humerus touching table.
Centre:	At mid forearm (include wrist and elbow joints on image).
Instructions:	HOLD STILL



Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral – Forearm

Position:	Elbow flexed 90°. Hand and wrist on side with little finger down. Humerus and forearm resting on IR.
Centre:	At mid forearm (include wrist and elbow joints on image).
Instructions:	HOLD STILL



# ELBOW

AP:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron and thyroid collar

## AP

Position:	Arm extended, palm up. Humerus and forearm flat and in centre of IR.
Centre:	At the elbow joint.
Instructions:	HOLD STILL

**R L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy

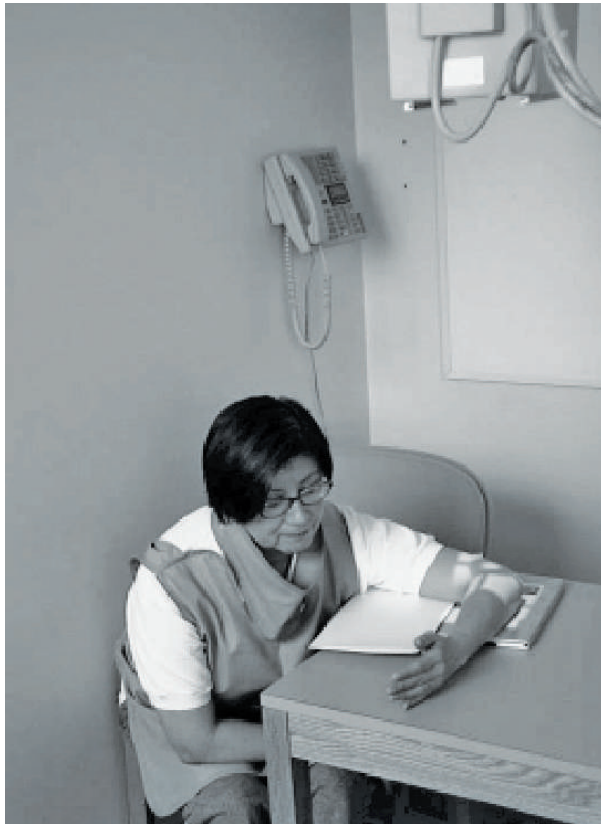


## Lateral – Elbow

Position: Elbow flexed 90°. Wrist and hand on side with little finger down. Humerus and forearm in centre with IR.

Centre: At elbow joint.

Instructions: HOLD STILL



# TRAUMA – ELBOW

If the patient cannot straighten elbow, the following routine should be followed:

1. Lateral (Same as non-trauma).
2. AP with elbow partially flexed and humerus in contact with IR.
3. AP with elbow partially flexed and forearm (radius and ulna) in contact with IR.



1. Lateral view.



2. AP with humerus on the IR.



3. AP with forearm on the IR.

# HUMERUS (NON-TRAUMA)

AP:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	1/2 apron around the waist and thyroid collar DO NOT COVER SHOULDER JOINT

## AP

Position:	Patient erect or lying down. Arm extended palm-facing tube. Epicondyles are equal distance to the IR. Turn patient's head away from beam.
Centre:	At mid humerus. Include elbow and shoulder joints on cassette/image plate.
Instructions:	HOLD STILL and STOP BREATHING *After the exposure tell the patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy





## Lateral

**Protection:** 1/2 apron repositioned to cover the back of the lower abdomen.  
Thyroid collar - DO NOT COVER AFFECTED SHOULDER

**Position:** Patient facing IR.  
Turn patient so humerus is against IR  
with epicondyles superimposed.  
Pull arm away from chest wall, hand on hip

**Centre:** At mid humerus  
(include elbow and shoulder joints on IR).

**Instructions:** HOLD STILL and STOP BREATHING.  
\*After the exposure tell the patient to BREATHE.



# HUMERUS (TRAUMA)

AP:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	1/2 apron around the waist and thyroid collar DO NOT COVER INJURED SHOULDER JOINT

## AP

**Position:** Patient erect facing x-ray tube.  
LEAVE ARM JUST AS PATIENT IS HOLDING IT.  
Turn patient so epicondyles are as parallel to the IR as possible.  
Turn patient's head away from x-ray beam.

**Centre:** At mid humerus in centre of the IR (include elbow and shoulder joints on image).

**Instructions:** HOLD STILL and STOP BREATHING  
\*After the exposure tell patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral

**Protection:** 1/2 apron repositioned to cover the back of the lower abdomen.  
Thyroid collar - DO NOT COVER AFFECTED SHOULDER

**Position:** Patient facing IR.  
Turn patient so humerus is against IR  
with epicondyles superimposed.  
LEAVE ARM JUST AS PATIENT IS HOLDING IT.

**Centre:** At mid humerus  
(include elbow and shoulder joints on IR).

**Instructions:** HOLD STILL and STOP BREATHING.  
\*After the exposure tell the patient to BREATHE.



# SHOULDER (NON-TRAUMA)

AP: (external rotation) SID 40"

AP: (internal rotation) SID 40"

Axial: SID 40"

IR: Portrait AND Landscape

Protection: 1/2 apron – around the waist  
Thyroid collar – DO NOT COVER AFFECTED SHOULDER

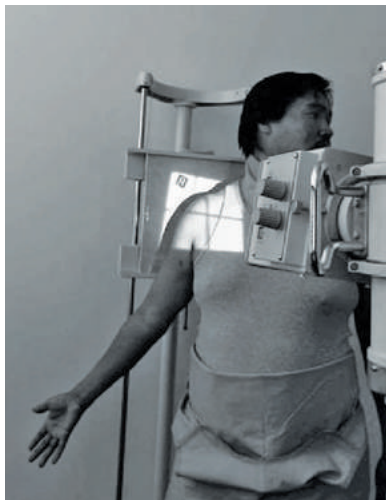
## AP (external rotation)

Position: Patient standing or lying supine facing tube.  
Turn patient towards painful side (so scapula is flat against IR).  
Turn arm outward so epicondyles are parallel to the IR.  
Turn patient's head away from x-ray beam.

Centre: 2 inches (3 fingers) below A.C. joint (in hollow of shoulder).

Instructions: HOLD STILL and STOP BREATHING  
\*After the exposure tell the patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## AP (Internal Rotation)

**Position:** Patient standing or lying facing supine x-ray tube.  
Turn patient towards painful side (so scapula is flat against IR).  
Turn arm inward so epicondyles are superimposed.  
Turn patient's head away from x-ray beam.

**Centre:** 2 inches (3 fingers) below A.C. joint (in hollow of shoulder).

**Instructions:** HOLD STILL and STOP BREATHING  
\*After the exposure tell the patient to BREATHE.



## Axial

Protection:	1/2 apron around the waist DO NOT USE THYROID COLLAR
Position:	Patient sitting beside table, the arm to be x-rayed closest to the table. (if possible adjust patient or table height to waist level). Place IR flat on table in the landscape position. Arm extended so armpit is as close to the middle of IR as possible..
Centre:	At A.C. joint area (include shoulder joint on image). **DO NOT USE THYROID COLLAR**
Instructions:	HOLD STILL and STOP BREATHING *After the exposure tell the patient to BREATHE.



# SHOULDER OR SCAPULA (TRAUMA)

AP:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	1/2 apron around the waist (no thyroid collar)

## AP

Position:	Patient standing, sitting or lying down facing x-ray tube. Place top of IR 2 inches (3 fingers) above top of shoulder. Slightly turn patient towards injured side (so scapula is flat against IR). DO NOT MOVE ARM Turn patient's head to uninjured side.
Centre:	At centre IR to include 1/3 of humerus, all of clavicle, scapula and top of shoulder area.
Instructions:	HOLD STILL and STOP BREATHING After the exposure tell the patient to BREATHE.



Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



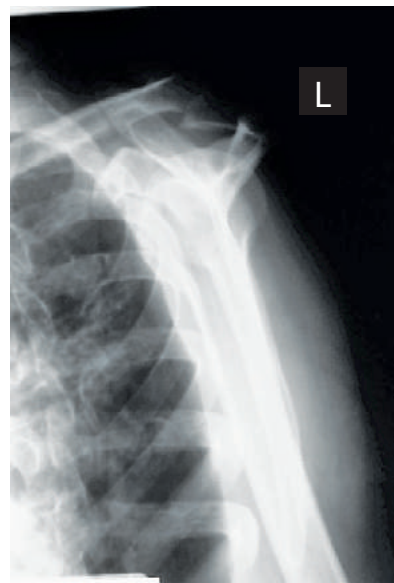
## Lateral – Transcapular Y

Protection: 1/2 apron - around the waist to cover the lower back of abdomen

Position: Patient erect facing IR.  
Turn body slightly so medial border of scapula and head of humerus are superimposed.

Centre: In centre of IR.  
At mid point of medial border of scapula.  
Include top 1/3 humerus, top of shoulder and all of scapula.

Instructions: HOLD STILL and STOP BREATHING  
After the exposure tell the patient to BREATHE.





# CLAVICLE

AP:	SID 40"
30° AP:	SID 40"
IR:	Portrait
Protection:	1/2 apron around the waist

## AP

Position:	Patient sitting or standing facing x-ray tube. Arm at side. Turn patient's head away from beam.
Centre:	In centre of IR At mid clavicle (include both medial and lateral ends of clavicle).
Instructions:	HOLD STILL and STOP BREATHING After the exposure tell the patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## AP 30°

**Position:** Patient sitting, standing, or lying facing tube.  
Arm at side.  
Place the top of the IR at the top of the patient's ear.  
Angle tube 30° towards patient's head.  
Make sure you adjust distance to 40 inches after angling tube.  
Turn patient's head away from x-ray beam.

**Centre:** Centre of IR.  
At mid clavicle (include both ends of clavicle).

**Instructions:** HOLD STILL and STOP BREATHING  
After the exposure tell the patient to BREATHE.



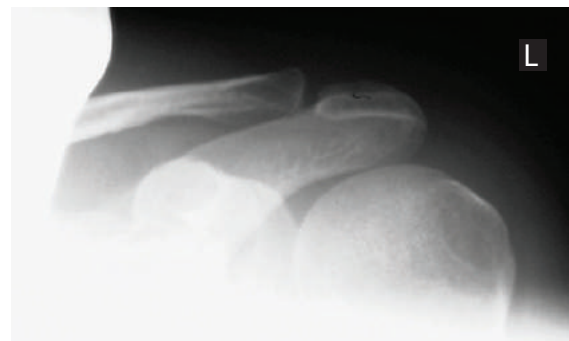
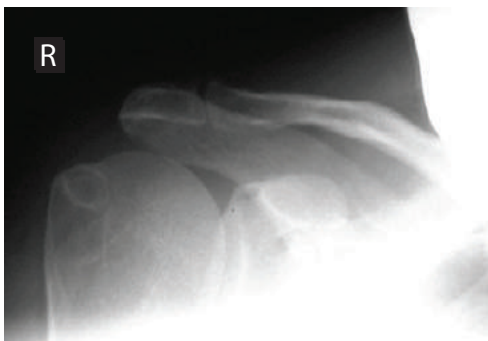
# ACROMIO-CLAVICULAR JOINTS

AP:	SID 40"
IR:	Portrait
Protection:	Thyroid collar and 1/2 apron

## AP

Position:	Standing facing x-ray tube Arms naturally at sides
Centre:	Take 1 image of each joint, centering over each AC joint.
INSTRUCTIONS:	HOLD STILL and STOP BREATHING. *After the exposure tell the patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



# TOES

AP (Dorsiplantar): SID 40"

Lateral: SID 40"

IR: Portrait

Protection: Full apron (tuck apron between legs) and thyroid collar

## AP (Dorsiplantar)

Position: Patient sitting on table, knee bent, foot flat in centre of IR.

Centre: At base of toe being examined (where toe joins the foot),  
at the base of the metatarsal.  
Include toe and metatarsal on either side as well.

Instructions: HOLD STILL



Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral – Toe

Position:	Foot turned on side (if big toe being examined, place it against IR. For all other toes, place little toe against IR.) Move toes not being examined out of the way. *DO NOT MOVE INJURED TOE.
Centre:	At base of toe being examined (where toe joins the foot), at the head of the metatarsal. Include injured toe and metatarsal only. Measure toe, not metatarsals.
Instructions:	HOLD STILL



# FOOT

AP (Dorsiplantar):	SID 40"
Oblique:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron (tuck apron between legs) and thyroid collar

## AP (Dorsiplantar)

Position:	Patient sitting on table with foot flat on cassette/image plate.
Centre:	In middle of foot at the level of the base of the 5th metatarsal.
Instructions:	HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Oblique – Foot

Position:	Patient sitting on table, knee bent. Foot flat on centre of IR. Turn foot and leg inward 30° from the AP position.
Centre:	In middle of foot at the level of the base of the 5th metatarsal.
Instructions:	HOLD STILL



## Lateral – Foot

Position:	Foot turned to lie on lateral side, in centre of IR. Place support under knee so metatarsals are superimposed. Dorsi-flex ankle to 90°.
Centre:	At middle of foot at the level of the base of the 5th metatarsal.
Instructions:	HOLD STILL





# CALCANEUS (HEEL)

Axial:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron (tuck apron between legs) and thyroid collar

## AXIAL

Position:	Patient sitting on table or stretcher with leg extended and big toe pointing to the sky. Dorsi-flex ankle using a tensor bandage. Place heel in lower third of IR. Angle tube 40° towards patient (remember to adjust distance to 40" after angling tube).
Centre:	In the middle of the heel at the level of the base of the 5th metatarsal.
INSTRUCTIONS:	HOLD STILL

**R L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy

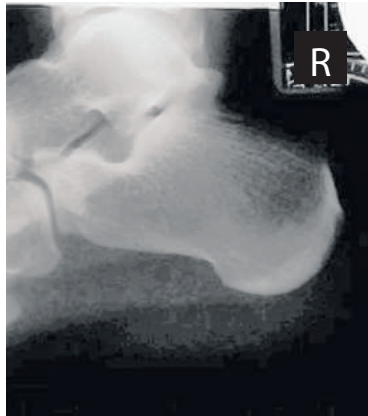
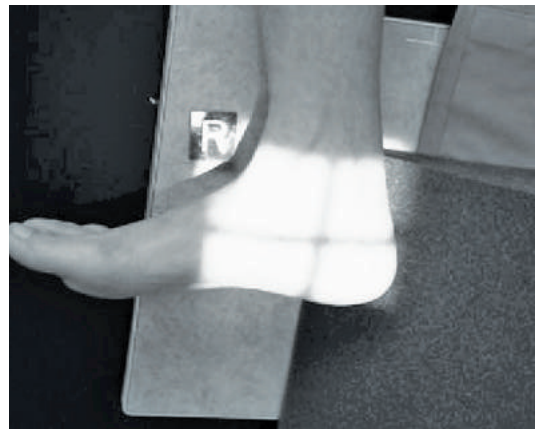


## Lateral – Calcaneus

**Position:** Foot turned to lie on lateral side, in centre of IR.  
Place support under knee so metatarsals are superimposed.  
Dorsi-flex ankle to 90°

**Centre:** Over heel at a point 2 fingers below medial malleolus

**Instructions:** HOLD STILL



# ANKLE

**\*\*IF THE PATIENT IS UNABLE TO MOVE, COMPLETE AP AND REFER TO PG.54 FOR SHOOT-THRU LATERAL VIEW.**

AP:	SID 40"
Oblique:	SID 40"
Lateral:	SID 40"
IR:	Portrait
Protection:	Full apron (tuck apron between legs) and thyroid collar

## AP

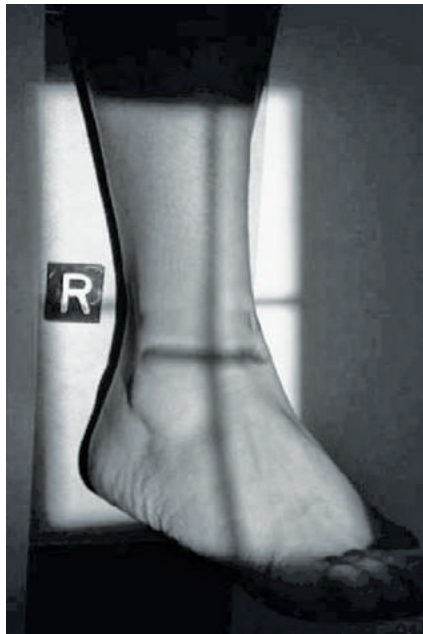
Position:	Patient sitting or lying on table with leg extended, ankle in centre of IR. Dorsi-flex ankle to 90°. Turn leg inward so big toe is straight up (12 o'clock position).
Centre:	At the ankle joint. (In midline 2 cm above lateral malleolus).
Instructions:	HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Oblique – Ankle

Position:	Patient sitting or laying supine with leg extended, ankle in centre of IR. Dorsi-flex ankle to 90°. Turn leg slightly inward so big toe is at the 10 o'clock position.
Centre:	At the ankle joint. (In midline 2 cm above lateral malleolus).
Instructions:	HOLD STILL

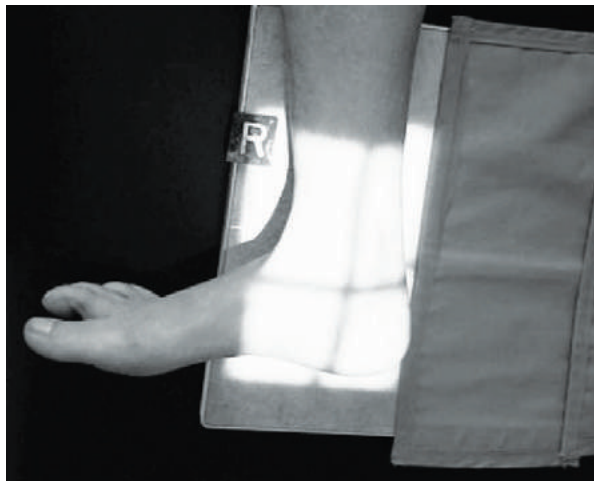


## Lateral – Ankle

**Position:** Foot turned to lie on lateral side, ankle in centre of IR.  
Dorsi-flex ankle to 90°.  
Place support under knee if required.  
Ensure lateral surface of foot is in contact with the IR.

**Centre:** At the medial malleolus.

**Instructions:** HOLD STILL



# TIBIA AND FIBULA

AP: SID 40" – 45"

Lateral: SID 40" – 45"

IR: Diagonal unless patient fits portrait.

Protection: Full apron (tuck apron between legs) and thyroid collar.

\*\*If Patient is unable to move, complete AP and refer to pg. 55 for Shoot-Thru lateral view.

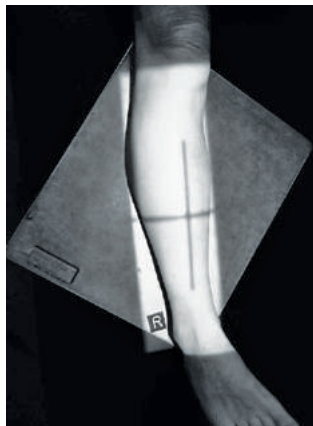
## AP

Position: Patient sitting or laying supine with leg extended in middle of IR.  
Dorsi-flex ankle.  
Turn leg inward so big toe is straight up (12 o'clock position).  
Include knee and ankle joints on the image.

Centre: At the middle of tibia and fibula.

Instructions: HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy

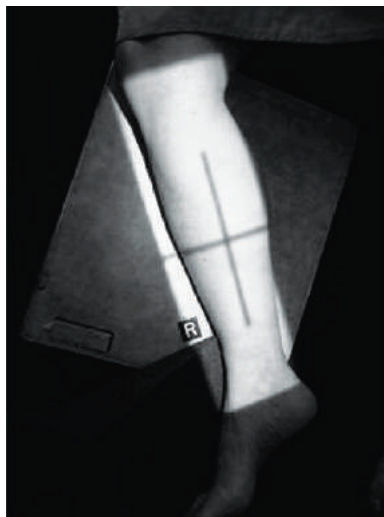


## Lateral – Tibia Fibula

**Position:** Patient laying on lateral side, tib-fib in center of IR.  
Knee slightly bent.  
Place support under opposite leg.  
Include knee and ankle joints on the image.  
\*\*If the leg is too long place the leg diagonally on the IR.  
\*\*If the leg is too long when diagonal, increase SID by 4".

**Centre:** At the middle of the tibia and fibula.

**Instructions:** HOLD STILL



# KNEE

AP: SID 40"

Lateral: SID 40"

IR: Portrait

Protection: Full apron (tuck apron between legs) and thyroid collar)

\*If patient is unable to move, complete AP and refer to pg. 56 for Shoot Thru lateral view.

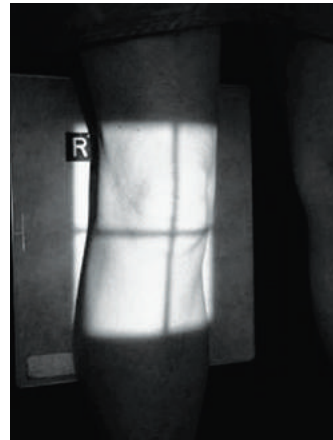
## AP KNEE

Position: Patient laying supine with leg extended.  
Dorsi-flex ankle  
Turn leg inward so patella is in middle of knee  
(big toe pointing to the sky).

Centre: At the lower border of the patella.

Instructions: HOLD STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy





## Lateral – Knee

**Position:** Patient is laying on affected side.  
Slightly bend the knee.  
Bring the opposite leg the affected leg and support the opposite knee with a sponge.

**Centre:** At the knee joint.

**Instructions:** HOLD STILL



# PATELLA

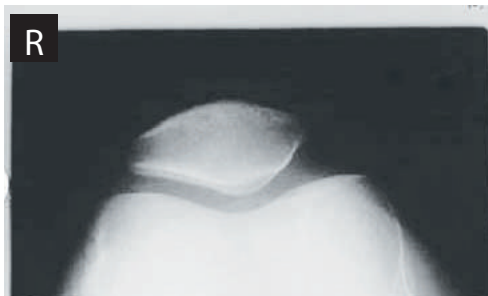
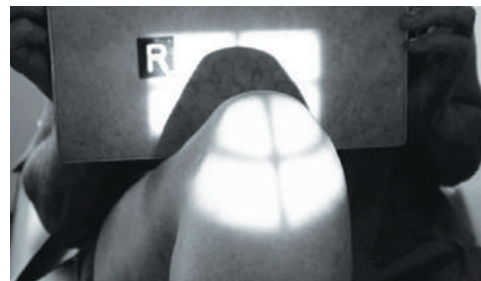
**\*\*DO A FULL KNEE EXAM FIRST**

Axial:	SID 40"
IR:	Portrait
Protection:	Full apron (tuck apron between legs) and thyroid collar

## Axial

Position:	Set machine for horizontal beam. Place patient in sitting position with injured knee bent to 90° or less. Have patient hold IR on edge at mid point of femur so the film is perpendicular to the table (see diagram). Adjust SID to 40".
Centre:	At the lower border of the patella.
Instructions:	HOLD LEG AND IR STILL

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



# ABDOMEN FOR OPAQUE OBJECTS – ADULT

(\*Opaque objects are foreign bodies such as ingested tablets)

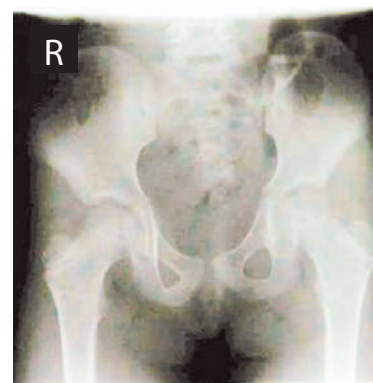
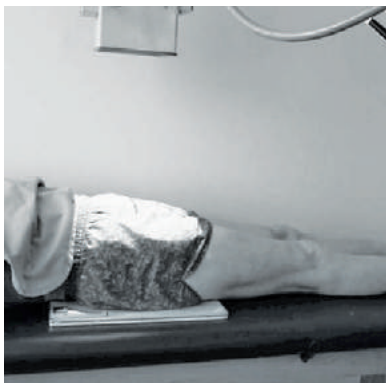
AP Pelvis:	SID 40"
AP Upper Abdomen:	SID 40"
IR:	Landscape
Protection:	AP PELVIS: 1/2 apron and thyroid collar above the waist. AP UPPER ABDOMEN: thyroid collar and lead strip above upper light field. 1/2 apron below lower light field.

## AP LOWER ABDOMEN

Position:	Patient laying supine with legs extended. Place IR under patients hips. Place top of IR 2 inches (3 fingers) above level of iliac crest.
Centre:	At the middle of the IR.
Collimation:	To size of IR
Instructions:	HOLD STILL and STOP BREATHING. *After the exposure tell patient to BREATHE.

**R** **L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## AP Upper Abdomen

**Position:** Patient laying supine with legs extended and arms at sides.  
Place the IR crosswise under patients upper abdomen.  
Place bottom of IR 2 inches (3 fingers) below level of iliac crest.

**Centre:** At the middle of the IR.

**Instructions:** HOLD STILL and STOP BREATHING.  
\*After the exposure tell patient to BREATHE.



# ABDOMEN – PEDIATRIC

(0 – 8 YEARS)

AP Abdomen:	SID 40"
IR:	Portrait
Protection:	Thyroid collar and lead strip above upper light field. 1/2 apron below lower light field.

## AP

Position:	Patient laying supine with legs extended to top of the IR.
Centre:	In the mid-line at level of iliac crest.
Collimation:	Open light field to include both sides of abdomen and upper light field to level of arm pit.
Instruction:	HOLD STILL and STOP BREATHING, or watch stomach and take x-ray when patient is still. *After the exposure tell patient to BREATHE.

**R L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



# LOWER LIMB

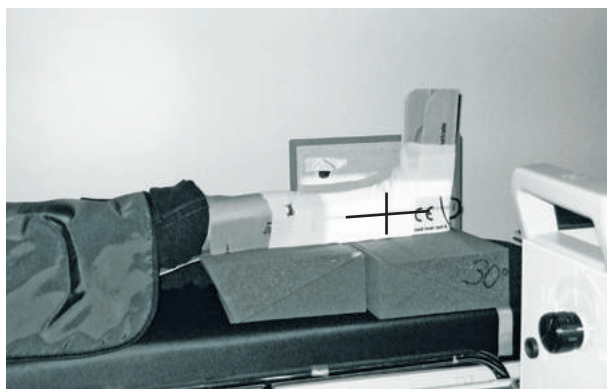
## Lateral – Ankle (Shoot Thru)

**\*\*OPTIONAL VIEW IF PATIENT CANNOT TURN LEG ON SIDE\*\***

IR:	Portrait
Protection:	Full apron and thyroid collar
Position:	Patient sitting or laying supine with leg extended. Injured leg should be nearest to x-ray tube. Carefully raise leg and support on sponges. If the patient can, turn the leg inward so the big toe is straight up (in the 12 o'clock position). IF PATIENT IS INJURED, do not move leg. Place IR on edge between legs, supported by sponge/tape if required.
Centre:	Use horizontal beam. Centre at the lateral malleolus at centre of IR.
Instructions:	HOLD STILL

**R L**

Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral – Tibia Fibula (Shoot Thru)

**\*\*OPTIONAL VIEW IF PATIENT CANNOT TURN LEG ON SIDE\*\***

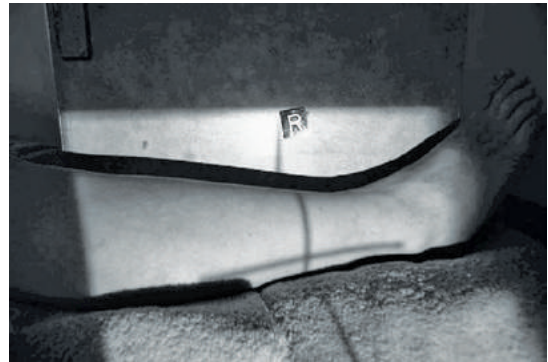
IR: Portrait

Protection: Full apron and thyroid collar

Position: Patient sitting or laying supine with legs extended. Injured leg nearest tube and raised on a small pad/sponge. If possible carefully turn leg so big toe is straight up (in the 12 o'clock position). Place IR on edge between lower legs, supported by sponge and sandbag. (include knees and ankle joints on the image).  
**\*\* If leg is too long do 2 images, one including knee, one including ankle.**

Centre: Use a horizontal beam and centre to the middle of the tibia and fibula in centre of the IR.

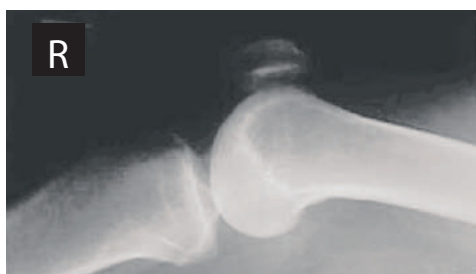
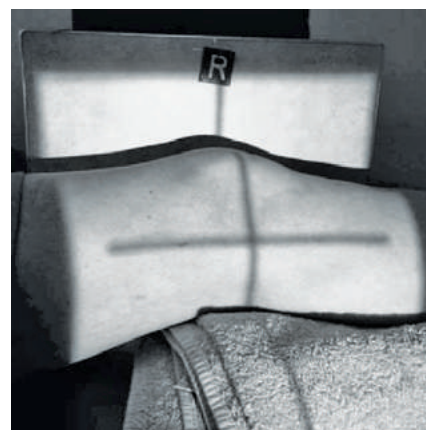
Instructions: HOLD STILL



## Lateral – Knee (shoot thru)

**\*\*OPTIONAL VIEW IF PATIENT CANNOT TURN TO THEIR SIDE\*\***

IR:	Portrait
Protection:	Full apron and thyroid collar
Position:	Patient sitting or laying supine with legs extended. Injured leg nearest x-ray tube and raised on a small pad/sponge. Carefully turn leg so big toe is pointing straight up. Place IR on edge between knees, supported by sponge and sandbag.
Centre:	Use a horizontal beam and centre at the knee joint.
Instructions:	HOLD STILL





# CHEST

PA:	SID 72"
Lateral:	SID 72"
IR:	Portrait
Protection:	1/2 apron around the waist
Measure Patient:	2 inches (3 fingers) below armpit

## PA

Position:	Patient standing, facing IR. Roll shoulders forward. Backs of hands resting on hips. Top of IR 2 inches (3 fingers) above the shoulders.
Centre:	To mid IR for men, at the level of the armpit for women.
Collimation:	Open light field to ensure light is seen above shoulder and sides of chest.
Instructions:	Deep breath IN and HOLD IT. *After the exposure tell the patient to BREATHE.

**R L** Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy



## Lateral – Chest

Protection: 1/2 apron turned to cover lateral aspect of the patient.

Position: Patient standing or sitting.  
LEFT side placed against IR.  
Arms raised over head.  
Adjust patient's hips so they are straight.  
Ensure broad base of support.  
Ensure patient does not lean in against IR.  
Top of IR 1 inch (2 fingers) above the shoulder.

Centre: To the IR

Collimation: Same as on PA

Instructions: Deep breath IN and HOLD IT.  
\*After the exposure tell the patient to BREATHE.

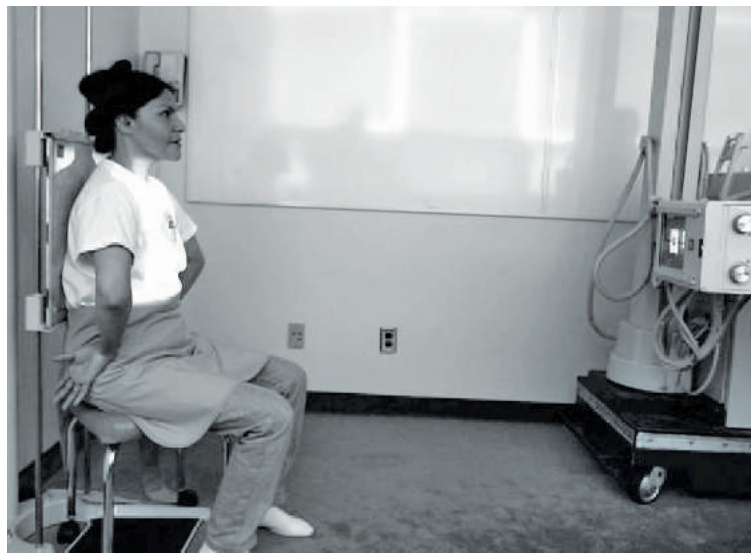


## AP – Chest – Upright

\*\*OPTIONAL VIEW

USE IF UNABLE TO OBTAIN PA PROJECTION DUE TO PATIENT CONDITION

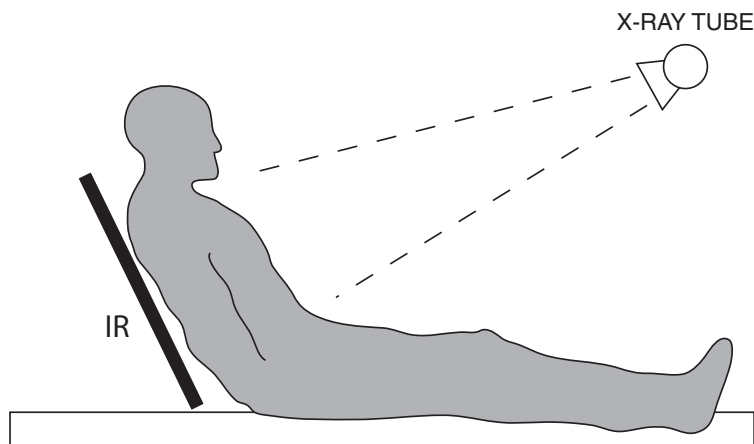
SID 72":	IR portrait
Position:	Patient sitting, facing x-ray tube. Place backs of hands on hips and roll shoulders forward. Position top of IR 2 inches (3 fingers) above the shoulders.
Centre:	To the IR
Collimation:	Same as in PA
Instructions:	Deep breath IN and HOLD IT. *After the exposure tell the patient to BREATHE.



## AP – CHEST – Semi-Erect

**\*\*OPTIONAL VIEW**  
USE IF UNABLE TO OBTAIN PA OR AP UPRIGHT

Position:	Lean patient forward and place IR behind their back. Ensure patient is in middle of IR. Position top of IR 3 fingers above the shoulders.
Centre:	To the IR. Angle tube down (caudad) so the CR is perpendicular to the IR.
Collimation:	Same as in PA.



# CHEST – PEDIATRIC

These ages are a guide. The size of the child should be taken into account when deciding how to proceed with chest images.

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0 – 3 months	Supine on stretcher or in Pigg-O-Stat
3 months – 2 years	In Pigg-O-Stat
2 – 3 years	Standing or sitting on a stool or extremity table or in Pigg-O-Stat
4 – 7 years	Standing at chest stand

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- One or two parents or helpers are required for these procedures.
- Ensure that female helpers are not pregnant.
- Provide helper with lead apron and thyroid collar.
- Explain the procedure to the helper before starting.
- Explain that it is better if the baby cries to make sure we have a deep breath for the image.
- Practice holding breath with an older child.
- Remove all clothing from infant's chest.

# CHEST PEDIATRIC

AP:	SID. (40")	IR portrait
Lateral:	SID (40")	IR portrait
IR:	Portrait	
Protection:	1/2 apron or shield over pelvis	

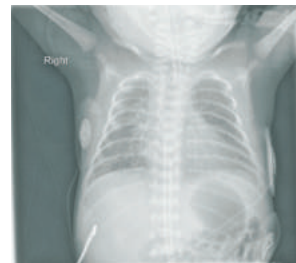
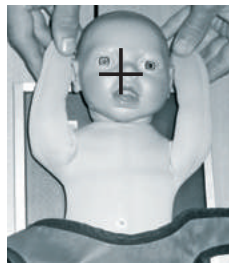
## AP - SUPINE (with 2 helpers)

\*\*SUPINE POSITION (IF UNABLE TO PLACE CHILD IN PIGG-O-STAT)

Position:	<p>Cover IR with a cloth          Remove clothing from child's chest          Lie baby in supine position on IR          Put the top of the IR level with the baby's mouth          Raise arms above head to either side of the ears          Legs extended          The helpers should hold the arms and knees to keep the baby straight and as still as possible.</p>
Centre:	To the midline at level of the nipple
Collimation:	Open light field to see light above shoulder and sides of chest
Exposure:	<p>On inspiration          Watch the child breathe. When the stomach rises the baby is breathing in.          Listen for the 'gasp' as the baby breathes in when crying.</p>

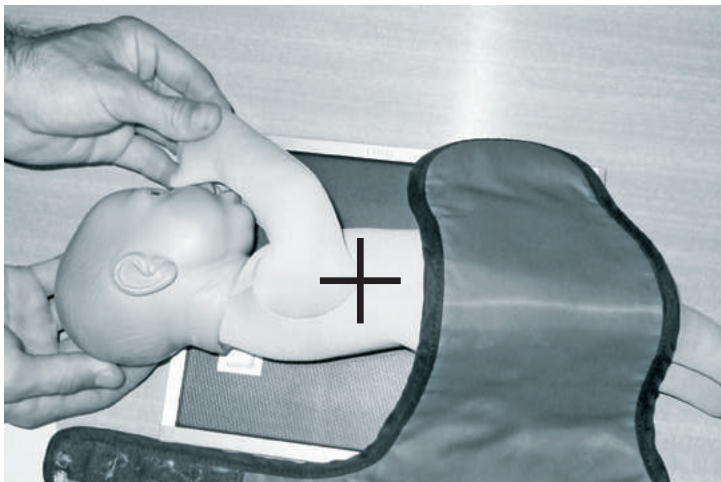


**Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy**



## Lateral

Position:	Turn baby onto left side on the IR Raise arms above head to either side of the ears Legs extended The helpers should hold the arms and pelvis to keep the baby straight
Centre:	To the midline (Mid Coronal Plain) at level of the nipple
Exposure:	On Inspiration Watch the child breathe. When the stomach rises the baby is breathing in. Listen for the 'gasp' as the baby breathes in when crying.



## To Place Child In Pigg-O-Stat Immobilization Device

- Ask the parent or person accompanying the child to assist. You are behind the baby with the helper in front facing the baby.
- Adjust the seat – higher for small children and lower for large. The seat should be adjusted so the child is looking out of the round opening.
- Place the child on the seat facing the IR with legs down through the openings (helper may need to hold the feet until the baby is completely sitting).
- Raise arms to the sides of the head by the ears and have the helper hold them in place by the ears.
- Bring the clear plastic sleeves in to the baby's sides and fix in place.
- Position the IR, so it is 2" above the shoulders or at the level of the baby's mouth
- Rotate the apparatus so the child is in the PA position facing the IR.
- Ensure no rotation.
- Raise the lead gonadal shield to cover the entire pelvis and raise the Left marker





# CHEST PEDIATRIC (IN PIGG-O-STAT)

PA:	SID 72"
Lateral:	SID 72"
IR:	Portrait
Protection:	1/2 Apron placed over patient's abdomen

## PA

Position:	Place child in Pigg-O-Stat (see previous page). Rotate the apparatus so the child is in the PA position facing the IR. Ensure no rotation Remove clothing from child's chest.
Centre:	To the midline at level of the nipple.
Collimation:	Cover IR with a cloth Remove clothing from child's chest Lie baby in supine position on IR Put the top of the IR level with the baby's mouth Raise arms above head to either side of the ears Legs extended The helpers should hold the arms and knees to keep the baby straight and as still as possible.
Exposure:	On inspiration. Watch the child breathe. When the stomach rises the baby is breathing in. Listen for the 'gasp' as the baby breathes in when crying.

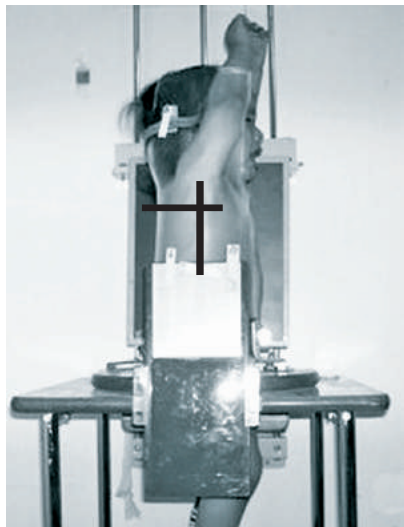


**Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy**



## Lateral

Position:	Turn the pigg-o-stat so the baby's left side is against the IR.
Centre:	To the midline (mid coronal plain) at level of the nipple.
Collimation:	Same as position.
Exposure:	On inspiration. Watch the child breathe, when the stomach rises the baby is breathing in. Listen for the 'gasp' as the baby breathes in when crying.



# CHEST PEDIATRIC

## (Child too large for Pigg-O-Stat)

PA:	SID 72"
Lateral:	SID 72"
IR:	Portrait
Protection:	1/2 Apron placed over patient's abdomen

### AP

Position:	Remove clothing from child's chest (a plain t-shirt or undershirt with no studs may be left on (no writing or decals). Sit child on either a stool or small table with their back to the IR. Place their arms by their sides and their chin up. Place the top of the IR 2" above the shoulders. A helper should stay with the child for safety and to ensure that the position is maintained.
Centre:	To the midline at level of the nipple.
Collimation:	Same as position
Exposure:	On inspiration. If possible ask the child to breath in and hold their breath or watch the child breathe (look at stomach).



**Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy**



## Lateral

Position:	Turn child so the left side is against the IR. Raise arms above head to either side of the ears. Ask the helper to hold the child's hands so the arms are out of the way of the chest, or hold arms close to head by the elbows.
Centre:	To the midline (mid coronal plain) at level of the nipple
Collimation:	Same as position
Exposure:	On inspiration Watch the child breathe. When the stomach rises the baby is breathing in. Listen for the 'gasp' as the baby breathes in when crying.



## CHEST PEDIATRIC: 4-7 Years

PA:	SID 72"
Lateral:	SID 72"
IR:	Portrait
Protection:	1/2 Apron placed over patient's abdomen

### PA

Position:	Remove clothing from child's chest (a plain T-shirt or undershirt with no studs, writing or decals may be left on). Sit or stand child facing the IR. Place the top of the IR 2" above the shoulders. Extend arms to wrap around chest stand. If child cannot keep still use a helper to hold top of head with one hand and hips with the other hand.
Centre:	To the midline at level of the nipple.
Collimation:	Same as position
Exposure:	On inspiration. Ask the child to breathe in and hold their breath. Demonstrate and practice with them before exposing.

**R****L**

**Right or Left image markers must be placed in the light field of EVERY image, not obstructing any anatomy**



## Lateral

Position:	Turn patient so left side is against IR. Raise arms above head (helper may hold hands and extend arms). Top of IR 2" above the shoulders.
Centre:	To the midline at level of the nipple.
Collimation:	Same as position
Exposure:	On inspiration. Ask the child to breathe in and hold their breath. Demonstrate and practice with them before exposing.



## AP Chest – Supine Position

**\*\*Optional view**

Use if patient cannot sit up or is unconscious.

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SID	As long as possible. Place the x-ray tube high to get as much distance as possible. LARGE CASSETTE – PORTRAIT OR LANDSCAPE
Protection:	1/2 apron placed over patient's abdomen
Position:	Patient supine on stretcher or bed Arms by the sides Position IR under patients chest, top of IR 2 inches (3 fingers) above the shoulders.
Centre:	To the IR.
Instructions:	Deep breath IN and HOLD IT. If patient can't do this watch the abdomen to see when he/she breathes in. *After the exposure tell the patient to BREATHE.

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