



RURAL MEDICAL IMAGING

Locations: Innisfail Mareeba Atherton Ingham

RADIOGRAPHY PROTOCOLS

INNISFAIL

This document should be read in conjunction with

[3.1 Diagnostic Imaging Protocols](#) .

Contents

CT PROTOCOLS	4
REGION	4
CT Head (Non Con)	4
CT Head (Post Con)	4
CT Pit Fossa	4
CT IAM's	4
CT Sinus	5
CT Facial Bones	5
CTA C.O.W	5
CT Soft Tissue Neck (Dual Phase)	5
CT C/Spine	5
CTA Carotids	6
CT Upper/Lower Extremities	6
CT Hi-Res Chest	6
CT Chest (Contrast)	6
CT PA	6
CT KUB.....	6
CT Abdo/Pelvis (PV Phase).....	7
CT Abdo/Pelvis (Multi Phase)	7
CT IVP	7
CTA Leg Run-off	7
CT T/Spine	8
CT L/Spine.....	8
XRAY PROJECTION PROTOCOLS.....	9
UPPER EXTREMITIES	9
FINGERS/HANDS/WRISTS:	9
FOREARMS	9
ELBOWS	9
HUMERUS	9
SHOULDERS	9
CLAVICLE	9

LOWER EXTREMITIES	10
TOES/FEET	10
CALCANEUM/HEELS	10
ANKLES	10
TIB-FIB	10
KNEES	10
FEMURS	10
PELVIC GIRDLE	11
PELVIS	11
HIPS	11
ABDOMEN	11
ABDOMEN	11
SKELETAL SURVEY	11
SPINES	12
CERVICAL	12
THORACIC	12
LUMBAR	12
SACRUM/COCCYX	12
CHEST / THORAX	13
CHEST	13
RIBS	13
STERNUM	13
HEAD	13
SKULL	13
FACIAL BONES	13
SINUS	13
OPG/TMJ/LAT CEPH	13

Radiographer Protocol

CT PROTOCOLS

In addition to all recons, fine slice axials are sent through to radiologists

Contrast Media used: **Omnipaque 370**

REGION

- CLINICAL INDICATIONS

○ RECONS

CT Head (Non Con)

- Headaches, Dementia, ?TIA, ?CVA, ?SAH, Age Care Screening, Epilepsy (follow-up), Syncope, Trauma
 - Brain - 3mm x 3mm Ax Sag Cor
 - Bone (Trauma Only) - 3mm x 3mm Ax, Sag, Cor

CT Head (Post Con)

- Tumours/SOL, Primary/Metastatic Ca, Epilepsy (First Presentation/Investigation), Abscess, AVM
 - Pre Con Brain - 3mm x 3mm Ax, Sag, Cor
 - Post Con Brain - 3mm x 3mm Ax, Sag, Cor

CT Pit Fossa

- ? Pituitary Adenoma, Pituitary Tumour
 - Pre Con Brain - 3mm x 3mm Ax Sag Cor
- *75mL Contrast @ 3.5 mL/sec*
25 sec Delay
 - Pit Fossa - 2mm x 2mm Ax Sag Cor
- *90 sec delay*
 - Post Con Brain - 3mm x 3mm Ax Sag Cor

CT IAM's

- Vertigo, Tinnitus, Dizziness, Headaches, Choleostoma
 - IAMs/Mastoids only - 1mm x 1mm Ax Cor – Bone window
- ? Acoustic Neuroma
 - Pre Con Brain - 3mm x 3mm Ax Sag Cor
 - Pre Con IAMs - 1mm x 1mm Ax Cor

- 50mL Contrast, Hand injected

90 sec delay

- Post Con Brain 3mm x 3mm Ax Sag Cor
- Post Con IAMs - 1mm x 1mm Ax Cor

CT Sinus

- Sinusitis, PND etc
 - Bone - 2mm x 2mm Ax, Sag, Cor

CT Facial Bones

- Trauma, ?#
 - Bone - 2mm x 2mm Ax Sag Cor
 - Soft - 2mm x 2mm Ax Sag Cor
 - 3D

CTA C.O.W

- ?Aneurysm
 - Pre Con Brain - 3mm x 3mm Ax Sag Cor

- 75mL Contrast @ 4.5mL/sec

Smart Prep @ base of skull, Monitor and initiate scan once Vertebral Arts blush

- CTA MIPs – 8mm x 4mm Ax Sag Cor
- 3D VR + MIPS
- MPVRs
- 90 sec Delay
 - Post Con Brain – 3mm x 3mm Ax Sag Cor

CT Soft Tissue Neck (Dual Phase)

- ? Tumour/Mass, Difficulty swallowing, Lymphoma, Abscess
- 100mL Contrast @ 3.0mL/sec

Inject 50mL, wait 35 sec then inject last 50mL and wait another 35sec

Total delay 70sec

- Soft Neck - 3mm x 3mm Ax Sag Cor

CT C/Spine

- Headaches, radiculopathy, paraesthesia, trauma
 - Soft – 3mm x 3mm Ax Sag Cor
 - Bone – 3mm x 3mm Ax Sag Cor

CTA Carotids

- ? Stenosis, Aneurysm
- 100mL contrast @ 4.5mL/sec

Smart Prep monitored at Aortic Arch, and initiated with dynamic transition

- CTA MIPs – 8mm x 4mm Ax Sag Cor
- 3D VR + MIPS
- Soft Neck – 3mm x 3mm Ax Sag Cor

CT Upper/Lower Extremities

- Soft – 2mm x 2mm Ax Sag Cor
- Bone – 2mm x 2mm Ax Sag Cor
- 3D VR

CT Hi-Res Chest

- ? Bronchiectasis, ? Atelectasis, ? Emphysema, COPD, Nodule follow-up
- Hi-Res Lung – 1mm x 10mm Ax
- Standard Lung – 3mm x 3mm Ax Sag Cor
- Soft – 3mm x 3mm Ax Sag Cor

CT Chest (Contrast)

- Hilar Mass, Trauma, ?Mets, Abscess, Consolidation on CXR
- 75 – 100mL Contrast @ 3.5mL/sec

Smart Prep at level of Carina monitored in descending Aorta, initiated with dynamic transition

- Lung – 3mm x 3mm Ax Sag Cor
- Soft – 3mm x 3mm Ax Sag Cor
- Bone (Trauma) 3mm x 3mm Ax Sag Cor

CT PA

- ?PE
- 100mL Contrast @ 4.5ml/sec

Smart Prep at pulmonary artery, monitored with dynamic transition

- CTA MIPs – 8mm x 4mm Ax Sag Cor
- Lung – 3mm x 3mm Ax Sag Cor
- Soft – 3mm x 3mm Ax Sag Cor

CT KUB

- ? Renal Stones

- Soft Abdo – 3mm x 3mm Ax Sag Cor

CT Abdo/Pelvis (PV Phase)

- Diverticulitis, Appendicitis, Trauma, ?Obstruction, Quadrant pain etc
 - 75 – 100ml Contrast @ 2.5mL

65 sec delay

- Soft Abdo – 3mm x 3mm Ax Sag Cor

CT Abdo/Pelvis (Multi Phase)

- Renal Tumour, Hepatic Haemangiomas, Pancreatic Ca, Adrenal Tumour (first presentation)
 - Pre Con Upper Abdo – 3mm x 3mm Ax Sag Cor
- 75 – 100mL Contrast @ 3.5mL/sec

Smart Prep set at level of first scan slice (above diaphragms) and initiated with dynamic transition OR 25 sec delay

- Arterial Abdo – 3mm x 3mm Ax Sag Cor
- 65 sec delay from injection initiation
 - PV Abdo Pelvis – 3mm x 3mm Ax Sag Cor
- For Hepatic Haemangioma
- 90 sec delay from injection initiation
 - Delayed Abdo – 3mm x 3mm Ax Sag Cor

CT IVP

- Macroscopic/Microscopic Haematuria
 - Pre Con KUB – 3mm x 3mm Ax Sag Cor
- 50mL contrast @ 2.5mL/sec

10min delay followed by another 50mL contrast

70sec delay

- Post Con KUB – 3mm x 3mm Ax Sag Cor
- 15min delayed KUB if contrast has not reached bladder on 10min IVP

CTA Leg Run-off

- 100 – 150mL contrast @ 4.5mL/sec

Smart Prep set at level of first scan slice (above kidneys) and initiated with dynamic transition

- CTA MIPs – 8mm x 4mm Ax Sag Cor
- MPVRs
- 3D VR + MIPs

CT T/Spine

- Soft Spine – 3mm x 3mm Ax Sag Cor
- Bone Spine – 3mm x 3mm Ax Sag Cor
- 3D VR

CT L/Spine

- Soft Spine – 3mm x 3mm Ax Sag Cor
- Bone Spine – 3mm x 3mm Ax Sag Cor
- Angled Axials - 3mm x 3mm, at ALL levels L1/2, L2/3, L3/4, L4/5, L5/S1

Radiographer Protocol

XRAY PROJECTION PROTOCOLS

UPPER EXTREMITIES

FINGERS/HANDS/WRISTS:

- * AP - OBLIQUE - LATERAL
- * AP - LATERAL (PAEDIATRICS)

FOREARMS

- * AP - LATERAL

ELBOWS

- * AP - EXT. OBLIQUE - LATERAL (ROUTINE VIEWS)
- * AP- EXT. OBLIQUE - LATERAL - RADIAL HEAD LATERAL (TRAUMA, ?#)
- * AP- LATERAL (PAEDIATRICS)

HUMERUS

- * AP - LATERAL

SHOULDERS

- * AP - INT. ROTATION 15°↓ - EXT. ROTATION 15°↓ - LATERAL (ROUTINE VIEWS, ?OA, ROTATOR CUFF etc.)
- * AP - LATERAL (TRAUMA & PAEDIATRICS)
- * ADDITIONAL VIEWS: AXIAL

WESTPOINT VIEW (ASSESSMENT OF GLENOID PROCESS)

CLAVICLE

- * AP - AP 30°↑

LOWER EXTREMITIES

TOES/FEET

- * AP - OBLIQUE - LATERAL
- * AP - LATERAL (PAEDIATRICS)

CALCANEUM/HEELS

- * AXIAL - LATERAL
- * ADDITIONAL VIEWS: AXIAL INTERNAL ROTATION (?#)

ANKLES

- * AP - OBLIQUE (MORTISE) - LATERAL
- * OBLIQUE (MORTISE) - LATERAL (PAEDIATRICS)

TIB-FIB

- * AP - LATERAL

KNEES

- * AP - INTERCONDYLAR – SKYLINE - LATERAL (ROUTINE)
- * AP BILATERAL WT. BEARING – INTERCONDYLAR- SKYLINE - LATERAL (?OA)
- * ROUTINE VIEWS - SKYLINE (? PATELLA PATHOLOGY)
- * AP - LATERAL (PAEDIATRICS, ?OSGOOD-SCHLATTERS)
- * ADDITIONAL VIEWS: INTERNAL OBLIQUE

EXTERNAL OBLIQUE

ROSENBERG VIEW

STRESS VIEWS

FEMURS

- * AP - LATERAL

PELVIC GIRDLE

PELVIS

- * AP (ROUTINE)
- * AP - LATERAL HIPS: FROGS LEGS VIEW (PAEDIATRIC, ?PERTHES)
- * ADDITIONAL VIEWS: JUDET VIEWS (ASSESS ACETABULUM)

AP 20° CEPHALIC (?# SYMPH PUBIS)

AP 30° CAUDAL (?# SYMPH PUBIS)

HIPS

- * AP PELVIS - LATERAL HIP (ROUTINE, ?OA)
- * AP HIP - LATERAL (PAEDIATRICS, T.H.R.)

ABDOMEN

ABDOMEN

- * SUPINE ONLY (KUB, ?RENAL STONES, PAEDIATRIC)
- * ERECT - SUPINE (ROUTINE, ?OBSTRUCTION)
- * ADDITIONAL VIEWS: DECUBITUS (?OBSTRUCTION ON PATIENTS THAT CANNOT BE ERECT)

SKELETAL SURVEY

? MULTIPLE MYELOMA, METASTATIC BONE DISEASE, PAGETS DISEASE

- LAT SKULL – PA CHEST – AP BILAT HUMERUS – LAT C/SPINE – LAT T/SPINE – AP, LAT L/SPINE – AP PELVIS – AP BILAT FEMURS

SPINES

CERVICAL

- * AP - AP PEG - LATERAL (TRAUMA)
- * AP - LATERAL - OBLIQUES (ROUTINE, ?OA, NECK PAIN etc)
- * AP - LATERAL - +/- AP PEG (PAEDIATRIC)
- * CHIROPRACTIC SERIES: DO VIEWS AS REQUESTED ON REFERRAL
- * ADDITIONAL VIEWS: SWIMMERS VIEW (VISUALISE C7-T1)

FLEXION/EXTENSION (ASSESS STABILITY OF C/SPINE)

STEEP OBLIQUES (ASSESS PEDICLES ?#)

LATERAL SOFT TISSUE NECK (?FB, ?ADENOIDS)

THORACIC

- * AP - LATERAL

LUMBAR

- * AP - OBLIQUES - LATERAL [INCL. L5-S1 SPOT IF NOT CLEARLY SEEN ON LAT] (ROUTINE, ?OA, ?SPONDYLOLISTHESIS etc)
- * AP - LATERAL (PAEDIATRICS)
- * CHIROPRACTIC SERIES: DO VIEWS AS REQUESTED ON REFERRAL
- * SCOLIOSIS: AP T/L SPINE @ 180cm FFD TO VIEW FROM ILIAC CRESTS UP
- * ADDITIONAL VIEWS: FLEXION/EXTENSION

SACRUM/COCCYX

- * AP 25° CEPHALIC - AP 15° CAUDAL - LATERAL (ROUTINE)
- * ADDITIONAL VIEWS: SACROILIAC JOINTS (ASSESS SI JOINTS)

CHEST / THORAX

CHEST

- * PA - LATERAL (ROUTINE)
- * PA/AP ONLY (PAEDIATRICS UNDER 10YRS)
- * INSPIRATION - EXPIRATION - LATERAL (?PNEUMOTHORAX)
- * ADDITIONAL VIEWS: AP LORDOTIC VIEW (ASSESS LUNG APEX, ?TB)

RIBS

- * PA CXR - POSTERIOR OBLIQUE - ANTERIOR OBLIQUE

STERNUM

- * POSTERIOR OBLIQUES - LATERAL
- * ADDITIONAL VIEWS: STERNOCLAVICULAR JOINTS

HEAD

SKULL

- * PA - TOWNES - LATERAL (ROUTINE)
- * PA - LATERAL (PAEDIATRICS, UNLESS OTHERWISE STATED)

FACIAL BONES

- * PA - OM - WATERS - LATERAL (ROUTINE, ?#)
- * ROUTINE - SMV (JUG HANDLES VIEW) - TANGENTIAL VIEWS (?# ZYGOMA)
- * OM - LATERAL NOSE (?# NASAL BONE)
- * OM LOOK UP - OM LOOK DOWN - LATERAL LOOK UP - LATERAL LOOK DOWN (ORBITS ?FB)
- * PA - LATERAL - OBLIQUE MANDIBLE - +/- OPG (?# MANDIBLE)

SINUS

- * PA - OM - WATERS - LATERAL (ROUTINE)
- * OM - LATERAL (PAEDIATRICS)

OPG/TMJ/LAT CEPH

- * OPG (?#, CARIES, PERIODONTAL DISEASE, WISDOM TEETH etc)
- * TMJ (?JT DEGENERATION, DYSFUNCTION etc)
- * LAT CEPH (ORTHODONTIC ASSESSMENT)