

MEDICAL IMAGING: PROCEDURE INFORMATION AND PREPARATION – CHW

PRACTICE GUIDELINE[®]

DOCUMENT SUMMARY/KEY POINTS

- Information for Nursing staff on patient management for Medical Imaging Procedures.
- Information includes:
 - Fasting instructions
 - Brief description of procedures
 - Duration of Medical Imaging examinations
 - Preparations for Medical Imaging procedures

CHANGE SUMMARY

- Rewording and updating of all information
- 1.12 changed to a different procedure
- Updated fasting guidelines, [Table 1](#)
- Insertion of [table 2](#) and [table 3](#)

READ ACKNOWLEDGEMENT

- Acknowledge Only – NE / CNE required to acknowledge the document.

This document reflects what is currently regarded as safe practice. However, as in any clinical situation, there may be factors which cannot be covered by a single set of guidelines. This document does not replace the need for the application of clinical judgement to each individual presentation.

Approved by:	SCHN Policy, Procedure & Guideline Committee	
Date Effective:	1 st March 2021	Review Period: 3 years
Team Leader:	NUM	Area/Dept: Medical Imaging

TABLE OF CONTENTS

General Information	4
1 Fluoroscopy Procedures	5
1.1 Contrast Enema.....	5
1.2 Contrast Meal	6
1.3 Contrast Meal & Follow Through	6
1.4 Contrast Swallow	7
1.5 Distal Loopogram	8
1.6 Genitogram.....	8
1.7 MCU (Micturating Cysto-urethrogram)	8
1.8 Modified Barium Swallow (MBS)	9
1.9 Nephrostogram.....	10
1.10 Transgastric Jejunal Feeding Tubes (TJT) – Inserting/change	10
1.11 Transpyloric Tube (TPT) Insertion.....	11
1.12 Cholangiogram	11
2 Ultrasound Procedures.....	12
2.1 General Information.....	12
2.2 Abdomen Doppler.....	12
2.3 Abdomen/Pelvis for Appendicitis	13
2.4 Abdomen Doppler.....	13
2.5 Chest Ultrasound.....	14
2.6 Head Ultrasound.....	14
2.7 Hip Ultrasound.....	14
2.8 Neck Ultrasound	15
2.9 Pelvic ultrasound	15
2.10 Renal Ultrasound.....	16
2.11 Renal Doppler.....	16
2.12 Scrotum/Testes Ultrasound.....	16
2.13 Soft Tissue Ultrasound	17
2.14 Spine Ultrasound	17
2.15 Vascular Studies.....	18
3 MRI Scan Procedures.....	18
3.1 General Information.....	18
3.2 MRI Preparations.....	19
<i>Feed & Sleep.....</i>	<i>19</i>
<i>MRI Scan Under Sedation.....</i>	<i>19</i>
3.3 Abdomen MRCP/MRE/MRU (kidneys; pancreas; liver; spleen bowel)	20
3.4 Brain	20
3.5 Cardiac/Chest.....	21
3.6 Face/ Neck	21
3.7 Musculoskeletal (Joints, Bones, Muscles, Tendons).....	22
3.8 Pelvic (Uterus, Ovaries, Testes, Prostate)	22
3.9 Spine	22
4 CT Scan Procedures	23
4.1 General Information.....	23
<i>Feed & Sleep.....</i>	<i>23</i>
<i>CT Scan Under Sedation.....</i>	<i>23</i>
4.2 CT Scan Under General Anaesthetic (GA).....	23

4.3 Oral Contrast Protocol for CT Scan of Abdomen and Pelvis24
4.4 CT Scan Oral Contrast for Non-GA Patients24
4.5 IV Contrast.....24

General Information

Contact Numbers:

Medical Imaging NUM	83220/50667
Medical Imaging Team Leader	83221
Fluoroscopy	52917/52188
General X-Ray	52916
Radiographer page:	p6216

Booking Clerks:

Fluoroscopy	51244
Ultrasound	52908
MRI 3T (inpatient enquiries)	51922
MRI 1.5 (outpatient)	52385
CT Scan	51244
Interventional Procedures	51922

ALL PATIENTS REQUIRING CONTRAST, ORAL OR IV REQUIRE WRITTEN CONSENT

- Inpatient x-rays do not need bookings but are best left to the afternoon as the mornings are very busy with outpatient clinics.
- All inpatients must come to Medical Imaging with an ID/Allergy band on.
- **ALL OTHER MODALITIES** (fluoroscopy; ultrasound; MRI; CT scan; interventional procedures) **MUST BE BOOKED by modality booking Clerk and an ELECTRONIC ORDER PLACED.** Urgent requests need to be approved by the Radiologist rostered in each modality

1 Fluoroscopy Procedures

Table 1: Fasting Instruction for Contrast Swallow, Contrast Meal and Meal & Follow Through

Age	Fasting
0 – 6 months	NOTHING to eat or drink for 2 – 3 hours prior to procedure Babies should be due for a feed.
Over 6 months	NO FOOD OR MILK for 4 hours prior to procedure. May have clear fluids (lemonade, apple juice, cordial) up until 2 hours before test then NIL BY MOUTH
DIABETICS (Insulin Dependent) – fast for 3 hours fast for 3 hours in consultation with clinical team	
Children on continuous tube feeds TURN FEEDS OFF 2 HOURS prior to procedure	
Children are able to continue to take their regular medications	

1.1 Contrast Enema

Common indications include:

- Hirschsprung's Disease
- meconium plugs
- meconium ileus
- stricture/adhesion
- Fistulas.
- Chronic constipation

Preparation

- There is no preparation for enema in children

Procedure

1. Children lie on screening table
2. Foley catheter is inserted into the rectum, securely taped in with leucoplast, and contrast is injected into the bowel, whilst being screened – sometimes we have to roll children from supine to lateral to advance contrast or get another view.
3. Test is finished when the questionable part of the bowel has been visualised.

Notes:

- This test is not painful – may get uncomfortable when bowel is full of contrast.
- Enema should take 30 – 45 minutes

1.2 Contrast Meal

Common indications include:

- Malrotation
- Gastric Emptying
- Fundoplication Or Gastrostomy Check
- Reflux, Hernia
- Atypical Vomiting
- Volvulus

Preparation

- Fasting - refer to [Table 1](#).
- **Note:** Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions. Contrast may be given orally or via Nasogastric tube (NG).

Procedure

1. Patients lie on the fluoroscopy table and drink contrast or have it injected via the NG tube, oesophagus is visualised both lateral and supine views.
2. Duodenal-jejunal (DJ) flexure is viewed.
3. Patient is rotated and observed for reflux.
4. Test is finished when DJ flexure is documented

Notes:

- Test is not painful
- Contrast is water soluble and diluted for babies under 3 months
- Contrast Meal procedure should take 30 minutes

1.3 Contrast Meal & Follow Through

Common indications include:

- Strictures
- Obstruction
- Unusual Anatomy
- Crohn's Disease
- Superior Mesenteric Artery syndrome (SMA)

Preparation

- Fasting – Refer to [Table 1](#).
- **Note:** Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions.

Procedure

1. Patients lie on the Fluoroscopy table and are fed contrast orally or via nasogastric (NG) tube.
2. The stomach is filled and contrast is screened whilst it goes through Pylorus and Duodenal-jejunal (DJ) flexure (3rd part of duodenum): this can take 20 – 30 minutes.
3. After the DJ flexure is observed and documented the children can leave the Fluoroscopy room and abdominal x-rays are taken every ½ - 1 hour until contrast has reached caecum: this can take hours, even into the next day.

Notes:

- The mobile Radiographer will come to PICU and GCNC Intensive Care. Mobile radiographer will go to the ward for infectious patients ONLY for the follow through abdominal x-rays.

1.4 Contrast Swallow

(Contrast is swallowed to outline the oesophagus)

Common indications include:

- Tracheal Oesophageal Fistula (T.O.F)
- Atresia
- Aspiration Achalasia
- Stricture
- Caustic Ingestion
- Oesophageal web/ring

Preparation

- Fasting – refer to [Table 1](#)
- **Note:** Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions.

Procedure

1. Patients lie on the screening table; given the contrast orally via cup; bottle or syringe (dependant on age and/or development). A series of X-rays are taken whilst the contrast is going down the oesophagus - for T.O.F. we may insert/pull back on a nasogastric feeding tube whilst contrast is injected.
2. The test is finished when oesophagus has adequately filled with contrast and the area has been visualised.

Notes:

- Contrast swallow is not painful.
- Contrast swallow should take 20 – 30minutes

1.5 Distal Loopogram

Common indications include:

- Visualise the bowel from stoma to rectum pre colostomy closure.

Preparation

- There is no preparation for loopogram.
- Provide another colostomy bag as the existing bag will be removed.

Procedure

1. Patients' lie on the screening table.
2. Colostomy bag is removed.
3. A small gauge Foley catheter (10fg or 12fg) is inserted into the distal opening of the stoma and non-ionic contrast is injected.
4. The contrast fills bowel down to rectum.
5. Test is finished when contrast reaches rectum.

Notes:

- This test is not painful.
- Distal loopogram should take 15 – 30 mins

1.6 Genitogram

Common indications include:

- Ambiguous Genitalia
- Fistulas
- Anatomical anomalies
- Urinary reflux

Preparation/ Procedure

Preparation is the same as for MCU (See [Section 1.7](#)).

1.7 MCU (Micturating Cysto-urethrogram)

Common indications include:

- Re-current Urinary tract infection (UTI)
- Pre/postnatal hydronephrosis
- History of dilated ureter
- To Determine Urinary Reflux
- To visualise post urethral valves in males
- Urinary tract infection (UTI)

Preparation

- Children must be on prophylactic antibiotic cover - the day before; day of test and 2 days after as there is an increased risk of a UTI following the procedure.
- Children must be urinary tract infection free for at least 4 weeks before test or at the discretion of the Consultant Radiologist.
- There is **no fasting** required for MCU or Genitogram (see [Section 1.6](#)).
- Nitrous oxide may be required for children above the age of 2 years, this requires 2 hours of fasting prior

Procedure

1. A 5fg/6fg feeding tube is inserted as a urinary catheter
2. The bladder is filled with diluted non-ionic contrast
3. A series of x-rays are taken whilst bladder is filling (left oblique; right oblique; supine; voiding) intermittent screening of renal system to look for reflux
4. There is a chance there may be pink staining of urine after test
5. MCU is finished when bladder is empty, for some children this may take some time

Notes:

- MCU is not painful – may be uncomfortable whilst catheter is inserted and when the bladder is full
- MCU takes 20 – 30 minutes if child voids straight away.

1.8 Modified Barium Swallow (MBS)

Common indications include:

- Aspiration
- Swallowing co-ordination difficulties

Note: Patient's requiring MBS are to be referred to the Speech Pathology Department for assessment and procedural planning.

Preparation

- All Patient's must fast 3 HOURS
- Patients can bring their favourite foods that will be mixed with barium at discretion of Speech Pathologist.
- Patients to bring any special feeding equipment (e.g spoons, cups or teats)

Procedure

1. Patients are given fluids and food mixed with contrast in different textures and consistencies under fluoroscopy guidance to assess swallowing co-ordination and possible aspiration.
2. The test is finished at the discretion of the Speech Pathologist and X-ray Nurse.

Note: MBS will take 30 - 40mins

1.9 Nephrostogram

Common indications include:

- Visualise the kidney/ureter post nephrostomy.

Preparation

- Patient must be on antibiotic cover
- Analgesia should be considered before coming to Fluoroscopy.

Procedure

1. There should be a drain coming from the kidney (stent) connected to a drainage bag.
2. Contrast is injected into the stented kidney via a 3 way tap and the ureter are visualised.
3. Test is finished when the kidney has drained the contrast into the bladder.

Notes:

- Test can be painful
- Nephrostogram will take at least 30 minutes

1.10 Transgastric Jejunal Feeding Tubes (TJT) – Inserting/change

Common indications include:

- Severe Gastric Reflux

NOTE: TJT can only be inserted by Radiology Interventionist. Appointments must be made to ensure Interventionist is available.

Preparation

- Patient must fast for 4 hours.
- If continuously fed, stop feeds 2 hours before procedure.

Procedure

1. Patient is positioned on fluoroscopy table.
2. A soft catheter is inserted into the gastrostomy stoma and positioned into the jejunum under fluoroscopy guidance.
3. A guide wire is inserted into the catheter and the catheter is removed over the guide wire.
4. The new TJT is threaded over the catheter into position and the balloon is inflated.
5. The jejunal port is injected with non-ionic contrast to confirm position.
6. Procedure is finished when tube is in correct position

Notes:

- TJT insertion may take 30 minutes to 60 minutes
- Patients with long term TJT's require regular tube changes (usually every 3 months)

1.11 Transpyloric Tube (TPT) Insertion

Note: TPT insertion is not a Radiology procedure: Fluoroscopy is used to confirm tube position. DO NOT use the PVC (short term) feeding tubes for Transpyloric placement.

Common indications include:

- Increased risk of aspiration secondary to persistent and severe gastro-oesophageal reflux.
- Vocal cord paralysis
- Continuous feed required at home for small infants.
- When bolus feeds are not tolerated in the stomach.

Preparation

- Fasting as per contrast meal – refer to [Table 1](#)

Procedure

- Please refer to the [Enteral Feeding Guideline](#)

1.12 Cholangiogram

Common indications include:

- To visualise the biliary tree
- To check tube/drain patency
- To check tube/drain position

Preparation

- There is no preparation required

Procedure

- Patient is positioned on the Fluoroscopy table
- Contrast is injected via a 3 way tap on the drainage tube

2 Ultrasound Procedures

2.1 General Information

- Enquiries for Inpatients: ext **52894**
- All inpatients must come to Ultrasound with an ID/Allergy band on.
- All Inpatients including Urgent and Same Day Ultrasounds requests must have an electronic order in Powerchart and be booked by the ordering Doctor by ringing the Ultrasound Radiologist ext: **52880**
- Inpatients will be “called for” by Sonographers.
- Enquiries for Outpatients: Doctors or Parents can make an appointment by ringing the Ultrasound Booking Clerk on **98452908**

2.2 Abdomen Doppler

Common indications include:

Abdominal pain

Presence/size/position of organs

Hepatosplenomegaly

Biliary Disease (jaundice)

Pyloric stenosis

Malrotation

Pancreatitis

Cysts/masses

? Collections

Upper abdomen

Intussusception

Preparation

- Patients must fast solids for abdominal Ultrasounds , clear fluids are encouraged as per [Table 3](#) (Unless contraindicated e.g patient nil by mouth)

Table 2

AGE	FASTING TIME
0-6months	3 hours. Baby to be ready for a feed
6-12months	4 hours
1-4years	5 hours
5-7years	6 hours
8-10yrs	7 hours
10years & over	8 hours minimum

Procedure

1. A transducer covered in warm gel is placed on the area of interest over abdomen.

Notes:

- Abdomen Ultrasound takes 30 mins

2.3 Abdomen/Pelvis for Appendicitis

Preparation

- Fasting solids as per [Table 2](#), must have clear fluids as per [Table 3](#) (if Nil by Mouth Patient must be hydrated with IV therapy)
- Must have a Full bladder
- Do not obtain a urine sample prior to arranging an ultrasound, this will delay early diagnosis

Procedure

- A transducer covered with warm gel is placed on the abdomen

2.4 Abdomen Doppler

Common indications include

- To assess blood flow
- Hepato/splenomegaly
- Portal hypertension
- Biliary atresia complications
- Liver transplant workup and postoperative assessment
- SMA syndrome
- MALS

Preparation

- Fasting as per [Table 2](#)

Procedure

- A transducer covered in warm gel is placed on the area of interest on the abdomen

Notes

- Abdomen Doppler takes 60mins

2.5 Chest Ultrasound

Common indications include:

- suspected Pleural Effusion
- suspected Mass
- suspected Consolidation

Preparation

- There is NO preparation for Chest Ultrasound

Procedure

1. A transducer covered in warm gel is placed over the chest

Notes:

- Chest Ultrasound takes 20 minutes

2.6 Head Ultrasound

Common indications include:

- suspected Intracranial haemorrhage
- suspected Hydrocephalus
- suspected Peri-ventricular leukomalacia (PVL)
- Seizures
- Meningitis
- Congenital Anomalie
- Traumatic birth

Procedure

1. A transducer covered in warm gel is placed on fontanelle.

Notes:

- There is NO preparation for Head ultrasounds. However, for Head Ultrasounds performed on babies, idea if just after feed so baby settled.
- Head Ultrasound takes 20 – 30 minutes.

2.7 Hip Ultrasound

Common indications include:

- Congenital Hip Displasia
- Hip pain, ?Effusion

Preparation

- There is NO preparation hip ultrasound – but baby should be calm, so after a feed best

Procedure

1. A transducer is covered in warm gel is placed on hips.

Notes:

- Hip Ultrasound takes 20 minutes

2.8 Neck Ultrasound

Common indications include:

- Thyroid/cervical lymphadenopathy
- Inflammation salivary glands
- Cyst/masses

Preparation

- There is NO preparation for Neck Ultrasound

Procedure

1. A transducer covered in warm gel is placed on neck.

Notes:

- Neck Ultrasound takes 20 minutes

2.9 Pelvic ultrasound

Common indications include:

- Bowel Disease in the pelvic area
- Collections
- Cysts
- Appendicitis
- Masses
- Uterus pathology
- Ovarian pathology
- Precocious puberty

Preparation

- Fasting is NOT required for pelvic scans
- A full bladder is mandatory

Table 3

Age	Amount of fluids
0 -9 months	Baby should be given a feed (bottle or breast) upon arrival to the Ultrasound department
10 months – 3 years	Drink a bottle or 400mL of water starting ½ hour prior to coming to department
4 – 6 years	Drink 500mL water starting 1 hour prior to coming to department
7 – 12 years	800 mL water starting 1 hour prior to coming to department
12 years & older	Min 1 litre water starting 1 hour prior to coming to department

Procedure

1. A transducer covered in warm gel is placed over pelvis.

Notes:

- Pelvic Ultrasound takes 30 minutes

2.10 Renal Ultrasound

Common indications include:

- Hydronephrosis
- Renal anomaly
- Altered renal function
- Masses
- Cysts
- Urinary tract infections (UTI)

Preparation

- Patients should be hydrated:
- Babies should have a feed before the scan
- Older children should have a full bladder, see [Table 3](#)

Procedure

- A transducer covered in warm gel is placed on the abdomen, side and back

Notes:

- Renal ultrasound takes 30 minutes

2.11 Renal Doppler

Common indications include:

- Acute renal failure
- Increased creatinine
- Post renal transplant
- Hypertension
- Suspected Renal Artery stenosis (RAS)

Preparation

- As for Renal Ultrasound, see [Table 3](#)
- RAS must also fast as per [Table 2](#)

Procedure

1. A transducer covered in warm gel is placed on the abdomen, side and back

Notes:

- Renal Doppler takes 60mins

2.12 Scrotum/Testes Ultrasound

Common indications include:

- Undescended Testes
- Torsion
- Hydrocele
- Hernia
- Ambiguous Genitalia
- Trauma
- Infection
- Mass

Preparation

- There is NO preparation for scrotum/testes ultrasound

Procedure

1. A transducer covered in warm gel is placed on the scrotum, groin and abdomen.

Notes:

- Scrotum/testes ultrasound takes 30 minutes

2.13 Soft Tissue Ultrasound

Common indications include:

Mass	Haemangioma
Collection	Lymphadenopathy

Preparation

- There is no preparation for a soft tissue ultrasound

Procedure

- A transducer with warm gel is placed on the area of interest

Notes

- The examination takes approximately 30 mins

2.14 Spine Ultrasound

Common indications include:

- Sacral pit/dimple
- Vertebral anomaly
- Suspected Tethered cord

Preparation

- There is NO preparation – however this is a very difficult scan and is best performed when babies are settled just after feed.

Procedure

1. Patients are placed prone on a pillow and a transducer covered in warm gel is placed on the lower spine.

Notes:

- Spine Ultrasound takes 30 – 45 minutes

2.15 Vascular Studies

Doppler	Upper extremity
Neck	Lower extremity

Preparation

- No preparation required. If a baby it is best performed after a feed when the baby is settled

Notes

- Vascular studies/Dopplers take approximately 60mins per region

3 MRI Scan Procedures

3.1 General Information

- All urgent inpatient/outpatient requests are made through the Staff Specialist or Radiology Fellow on-duty (ext 52941) or via switch board after hours
- All non-urgent MRI non General Anaesthetic (GA) outpatient appointments are made through the MRI Administration Clerks ext 52385 Inpatients.
- All non-urgent GA enquiries ONLY – not for bookings ext 51922
- A MRI Pre-scan Safety Questionnaire (PSQ) **must** be completed for all patients. Parents may be able to accompany their child during the MRI scan if deemed appropriate, this also requires the parent/guardian to complete a PSQ. Refer to : http://chw.schn.health.nsw.gov.au/ou/medical_imaging/resources/MRI_pre-scan_safety_questionnaire.pdf
- Parents are required to accompany their child to the MRI department to confirm the PSQ.

The PSQ is required to be completed and faxed to MRI 52948 at the time of booking. This is to allow review prior to declaring the patient safe for MRI.

- Patients will be changed into a hospital gown and jewellery and any metal objects removed prior to the examination.
- As the scanner is very noisy, hearing protection will be provided.
- A CD or DVD will be played during scans wherever possible. Patients may bring their own music or DVDs.
- The patient is required to lay still on the scanner bed for the entire duration of the scan. Therefore the following age guide will be applied:
 - >5 years old (sedation or GA generally not required)
 - 6 months to 5 years – GA required

- 3 – 6 months – sedation required
- 0 – 3 months – feed and sleep technique.

For GA refer to: [MRI under general anaesthetic- patient process, post anaesthetic care and discharge CHW practice guideline](#)

3.2 MRI Preparations

Drinking large quantities of liquid prior to MRI is not recommended due to long duration of the scans. Toilet breaks are not achievable and full bladders may become uncomfortable.

Some scans require the child to have an Intravenous (IV) cannula for the administration of IV contrast.

Feed & Sleep

Babies under 3 months may be settled and scanned with feed & sleep method for some MRI scans. Preparation and procedure is as follows:

- Fast baby for 4 hours prior to appointment time.
- Attend department 30minutes prior to appointment time.
- remove any metal from babies clothing
- remove any jewellery
- wrap and feed baby in a quiet area
- Avoid a long sleep prior to the scan

MRI Scan Under Sedation

- Sedation to be charted on MAR by the treating team
- Refer to [Procedural Sedation \(Paediatric Ward, Clinic and Imaging Areas\) Practice Guideline](#) for sedation administration and transportation.
- Please note: Sedation is contra-indicated for premature neonates or babies < 3months unless under the care of Grace Centre for Neonatal Care.
- Infants must have all metal removed before sedation given. Hospital gown.
- MRI staff will “call” ward to give sedation and instructions for sending Patient to MRI Scan.
- Some patients requiring sedation may also be admitted via the Imaging day stay (IDS) ward. A pre-sedation checklist on Powerchart is required to be completed by the requesting team at the time of booking for these patients.

3.3 Abdomen MRCP/MRE/MRU (kidneys; pancreas; liver; spleen bowel)

Common indications include:

- Crohn's Disease
- Liver lesions/disease
- Renal artery stenosis
- Renal lesions
- Gaucher's Disease (liver/spleen volumes)
- Biliary duct dilation
- Pancreatitis

Special Instructions

- MRCP - Patients are required to fast 4 hours.
- MRE - patients are required to fast a minimum of 6 hours for solids, allowed to keep drinking water.
- IV contrast is required. Oral contrast is also required, the MRI department will organise oral contrast administration and an antiemetic and antispasmodic.
- Abdomen - Patients are required to fast for 4 hours. IV contrast may be required
- MRU – Oral hydration 24 hours prior is preferable. The patient is required to fast 4 hours prior and receive oral/ IV hydration 1 hour before the scan. A diuretic, antispasmodic and contrast may be required.
- All the above scans require breath-hold and breathing triggered techniques.
- The patient will be unable to watch a movie during all the above scans. Notes:

Notes

- Abdomen scan takes 30 – 40 minute
- Individual sequences are 10 – 20 seconds each breath-hold, or 2 – 5 minutes for breathing triggered techniques. If children are unable to hold their breath for this period of time, a GA is required.

3.4 Brain

Common indications include:

- Seizures
- Investigation for tumours
- Hydrocephalus
- Orbital imaging
- Pituitary imaging
- Headaches
- Stroke
- Trauma
- Developmental delay
- Hydrocephalus
- Neurofibromatosis (NF1)
- Tubular Sclerosis
- Sturge Weber
- Vascular lesions
- Angiography
- Venography

Special Instructions

- Nil

Notes:

- Brain scan takes 20 – 45 minutes
- Individual sequences are 1.5 – 7 minutes each.

3.5 Cardiac/Chest**Common indications include:**

- Congenital heart disease (assessment of Tetralogy of Fallot's [TOF])
- Transposition of the great arteries (TGA)
- Artery stenosis
- Valvular incompetence
- Right Ventricular and Left Ventricular function
- Tumour evaluation
- Infection
- Venous anatomy

Special Instructions

- Patient is required to have only a light meal.
- IV contrast is frequently required for angiography (vascular work)
- The images are usually acquired with ECG monitoring and breath-holding techniques.

Notes:

- Cardiac/chest scan takes 45minutes – 1 hour
- Individual sequences are 10 – 20 seconds each breath-hold, or 2 – 5 minutes for breathing triggered techniques. If children are unable to hold their breath for this period of time, a GA is required.

3.6 Face/ Neck**Common indications include:**

- Tumour evaluation
- Vascular lesions
- Temporo-mandibular Junction (TMJ)
- Angiography/venography
- Soft palate study

Special Instructions

- Nil

Notes:

- Scan takes 30 – 45 minutes
- Individual sequences are 3 – 5 minutes each

3.7 Musculoskeletal (Joints, Bones, Muscles, Tendons)

Common indications include:

- Trauma
- Congenital anomalies
- Tumour evaluation
- Osteomyelitis
- Juvenile idiopathic arthritis
- Dermatomyositis
- Vascular lesions

Special Instructions

- Nil

Notes:

- Musculoskeletal scans take 15minutes – 90 minutes

3.8 Pelvic (Uterus, Ovaries, Testes, Prostate)

Common indications include:

- Congenital anomalies
- Tumour evaluation

Special Instructions

- Patient is required to have only light meal
- Semi-full bladder may be helpful (females to drink 200 – 300mL of water 1 hour prior to scan)
- IV contrast may be required

Notes:

- Pelvic scan takes 45 minutes
- Individual sequences are 3 – 4 minutes. Occasional breath holding is required for approximately 20 seconds.

3.9 Spine

Common indications include:

- Scoliosis
- Trauma
- Tumour/oncology investigations
- Congenital anomalies
- Dural ectasia
- Infection

Special Instructions

- MRI department must be notified if the patient is on spinal precautions

Notes:

- Spine scan takes 30minutes – 1 ½ hours
- Individual sequences are 2 – 5 minutes each.

4 CT Scan Procedures

4.1 General Information

- All CT appointments are made with CT Booking Clerk ext 51244
- CT Scan Staff will “call” ward for Inpatients to attend CT scan

Feed & Sleep

Babies under 6 months may be settled and scanned with feed & sleep method for non-contrast head scans. Preparation and procedure is as follows:

- Organise feed for baby when a scan is due. The baby may be fed on the ward or in the CT area depending on availability. CT scan staff will liaise with ward staff in regards to feeding and transfer times
- Remove any metal from babies clothing
- Remove any jewellery
- Wrap and feed baby in a quiet area in the CT area

CT Scan Under Sedation

(to be charted by the treating team on the MAR)

- [Procedural Sedation policy](#) is available on intranet
- Children must have all metal removed before sedation given
- CT staff will indicate if a cannula is necessary –cannulate patient on the ward before sedation is given
- Some patients requiring sedation may also be admitted via the Imaging day stay (IDS) ward. A pre-sedation checklist on Powerchart is required to be completed by the requesting team at the time of booking for these patients.

CT staff will “call” ward to give sedation and instructions for sending Patient to CT Scan

4.2 CT Scan Under General Anaesthetic (GA)

CT scans under GA follow the standard Operating Theatre protocols including Pre-op check lists, identification/Allergy bands and consent.

- GA'S are sometimes required for children. (eg: 18mths– 5 years of age, breath holding required or complex scans [eg; Angiography; Interventional procedures])
- Abdomen CT scans except for Renal Calculi and Fungogram require oral contrast, these require IV contrast.
- Oral contrast is to be commenced 3 hours before GA and finished within 1 hour – nothing else to eat after the oral contrast has started.

- CT scans that require Oral contrast will always require IV contrast as well
- **Fasting periods:** 6 hours for milk and solids, 2 hours for oral contrast & 2 hours for clear fluids.

4.3 Oral Contrast Protocol for CT Scan of Abdomen and Pelvis

- Ioscan is the oral contrast.
- Ioscan is available from pharmacy or in an emergency or after hours from the CT scan room (please see CT staff).
- Patients to be given appropriate number of 10mL Ioscan sachets, which each needs to be mixed with 200mL water/juice/soft drink (lemonade tastes best). Do NOT use milk.

Table 4

Age	Actual drinking amount	No. of sachets
0 -1 year	100mL of the 200mL mixture	1 sachet
2 years	200mL of mixture	1 sachet
3 years – 5 years	400mL of mixture	2 sachets
6 years and over	600mL of mixture	3 sachets

4.4 CT Scan Oral Contrast for Non-GA Patients

- Ioscan mixture administration:
 - Commence 2 hours prior to CT appointment time.
 - 2/3 should be consumed gradually over the first hour and the final 1/3 should be started 30 minutes prior to the scan and finished within 15 minutes of the scan.
- Nothing else to eat or drink during and after Ioscan intake.
- Patients may eat and drink after the scan is finished.

4.5 IV Contrast

Written consent must be obtained for all IV contrast administrations

Patients must be observed for a minimum period of 15mins after contrast administration prior to being discharged (if outpatient). Inpatients require nursing escort on return to the ward.

Copyright notice and disclaimer:

The use of this document outside Sydney Children's Hospitals Network (SCHN), or its reproduction in whole or in part, is subject to acknowledgement that it is the property of SCHN. SCHN has done everything practicable to make this document accurate, up-to-date and in accordance with accepted legislation and standards at the date of publication. SCHN is not responsible for consequences arising from the use of this document outside SCHN. A current version of this document is only available electronically from the Hospitals. If this document is printed, it is only valid to the date of printing.