MEDICAL IMAGING PROCEDURES: INFORMATION AND PATIENT MANAGEMENT

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

Minor review to re-word the last dot point in section 4.2 and the first dot point in section 4.4.

READ ACKNOWLEDGEMENT

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

Approved by:	SCHN Policy, Procedure & Guideline Committee	
Date Effective:	1st April 2017	**Review Period**: 3 years
Team Leader:	NUM	**Area/Dept**: Medical Imaging

Date of Publishing: 28 March 2017 11:57 AM Date of Printing:

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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**.

The times mentioned in this document are approximate

- **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
6 months – 6 years	**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
> 6 years	**NO FOOD OR MILK** from 12 midnight the night before procedure. May have **clear fluids (lemonade, apple juice, cordial)** up until **2 hours** before test then NIL BY MOUTH
DIABETICS (Insulin Dependent) – In consultation with clinical team	
Children on continuous tube feeds TURN FEEDS OFF 2 HOURS prior to procedure	

Please continue to take regular medications

1 Fluoroscopy Procedures

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

- **Preparation**

Fasting

Note: Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions.

Age	Fasting
0 – 6 months	**NOTHING** to eat or drink for **2 – 3 hours** prior to procedure
6 months – 6 years	**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
> 6 years	**NO FOOD OR MILK** from 12 midnight the night before procedure. May have **clear fluids (lemonade, apple juice, cordial)** up until **2 hours** before test then NIL BY MOUTH
DIABETICS (Insulin Dependent) – In consultation with clinical team	

Children on continuous tube feeds TURN FEEDS OFF 2 HOURS prior to procedure

Please continue to take regular medications

- **Procedure**

1. Patients lie on the fluoroscopy table and drink contrast, 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 although small children do not like being held still.

Contrast is water soluable and diluted

Contrast Meal procedure should take 30 minutes

1.3 Contrast Meal & Follow Through

- **Common indications include:**

Strictures

Obstruction

Unusual Anatomy

Crohn's Disease

- **Preparation**

Fasting

Note: Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions.

Age	Fasting
0 – 6 months	**NOTHING** to eat or drink for **2 – 3 hours** prior to procedure
6 months – 6 years	**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
> 6 years	**NO FOOD OR MILK** from 12 midnight the night before procedure. May have **clear fluids (lemonade, apple juice, cordial)** up until **2 hours** before test then NIL BY MOUTH
DIABETICS (Insulin Dependent) – In consultation with clinical team	
Children on continuous tube feeds TURN FEEDS OFF 2 HOURS prior to procedure	

Please continue to take regular medications

- **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

- **Preparation**

Fasting

Note: Contrast Swallow, Contrast Meal and Meal & Follow Through Procedures have the same fasting instructions.

Age	Fasting
0 – 6 months	**NOTHING** to eat or drink for **2 – 3 hours** prior to procedure
6 months – 6 years	**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
> 6 years	**NO FOOD OR MILK** from 12 midnight the night before procedure. May have **clear fluids (lemonade, apple juice, cordial)** up until **2 hours** before test then NIL BY MOUTH
DIABETICS (Insulin Dependent) – In consultation with clinical team	
Children on continuous tube feeds TURN FEEDS OFF 2 HOURS prior to procedure	

Please continue to take regular medications

- **Procedure**

1. Patients lie on the screening table; given the contrast orally via cup; bottle or syringe (which ever they'll take) and are x-rayed whilst it is going down the oesophagus - for T.O.F. we may insert/pull back on a nasogastric feeding tube whilst contrast is injected.
2. Test is finished when oesophagus has adequately filled with contrast to determine any leaks.

- **Notes:**

Contrast swallow is not painful although babies may get upset about being held down.

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 one that's there 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:**

Ambiguus 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)

To Determine Urinary Reflux

To visualise post urethral values in males

- **Common indications include:**

Urinary tract infection (UTI)

pre/post natal hydronephrosis

history of dilated ureter.

- **Preparation**

Children must be on antibiotic cover - the day before; day of test and 2 days after.

Children must be urinary tract infection free for at least 2 weeks before test.

There is **no fasting** required for MCU or Genitogram (see Section 1.6).

- **Procedure**

1. Change child into hospital gown
2. Child is held in position by parents/nurses at top of table and at feet
3. Aseptic technique used for catheterisation
4. Using 5fg/6fg feeding tube as a catheter
5. Catheter is held in position by micropore tape
6. Bladder is filled with diluted non-ionic contrast
7. 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
8. There is a chance there may be pink staining of urine after test (catheter can irritate going in)
9. Also a chance of UTI occurring after test (be aware of UTI symptoms)
10. MCU is not painful – may be uncomfortable whilst catheter is going in
11. MCU is finished when bladder is empty.

- **Notes:**

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 where the patient will be assessed and organise the Fluoroscopy appointment.

- **Preparation**

All Patient's must fast 3 HOURS

Patient's can bring their favourite foods that will be mixed with barium at discretion of Speech Pathologist.

- **Procedure**

1. Patients are given fluids and food 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.

- **Notes:**

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 XRAY.

- **Procedure**

1. There should be a drain coming from the kidney (stent) connected to a drainage bag.
2. Contrast is injected into the stent kidney and 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

- **Common indications include:**

Severe Gastric Reflux

NOTE: TJT can only be inserted by Radiology Interventionist Appointments must be made with the Fluoroscopy Nurse 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. Both gastric and jejunal ports are injected with non-ionic contrast to check position.
6. Both ports are flushed with water for injection.
7. Procedure is finished when tube is in correct position

- **Notes:**

There is no way to tell how long TJT insertion will take could be from 30 minutes to 60 minutes.

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 (as above)

- **Procedure**

Please refer to the Enteral Feeding Guideline:
http://intranet.kids/o/documents/policies/guidelines/2006-8237.pdf

Transpyloric tubes can be placed in all clinical areas at the bedside.

Transpyloric tubes cannot be used until x-ray confirms position.

Medical staff to have Fluoroscopy request form completed prior to the procedure.

Fluoroscopy staff should be notified of the intention to insert a TPT, giving advance notice Fluoroscopy will be required to confirm tube placement.

The tube will be advanced at the time of confirmation, if required.

- **Measurement**

Set up as for insertion of Nasogastric tube, measuring from tip of nose to ear lobe to xiphisternum (note measurement).

- **Insertion of Transpyloric tube**

1. Prepare the tube as for nasogastric tube insertion. Insert as per nasogastric tube to length measured for xiphisternum.
2. Remove wire
3. Place infant/child on right side
4. Advance tube slowly 5 – 10cm
5. Tape securely but with the capacity for easy removal
6. Leave child on right side for 30 minutes
7. Await Fluoroscopy call; to perform position confirmation

8. Send wire in packet to Radiology with child.

1.12 Urethrogram

- **Common indications include:**

Visualise urethra anatomy

- **Preparation**

Patient must be on antibiotic cover.

Older children may require nitrous oxide (N_2O) (N_2O to be ordered by referring Doctor) and/or analgesia given before coming to X-ray Department

- **Procedure**

1. Using aseptic technique a 5fg/6fg feeding tube is inserted into urethra.
2. Contrast is injected into the feeding tube as the tube is pulled back along the urethra.
3. The test is finished when the urethra is visualised.

- **Notes:**

This test can be painful and will take 30 minutes.

2 Ultrasound Procedures

2.1 General Information

Enquiries for Inpatients: ext 52912

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 (02 984)52908

2.2

2.3Abdomen Doppler

- **Common indications include:**

To assess blood flow

Hepato/splenomegaly

Portal hypertension

Biliary Atresia

Transplants

- **Preparation**

FASTING (as per table 2.2)

- **Procedure**

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

- **Notes:**

Doppler scan takes an additional 30 minutes after the 30 minute Abdomen Scan. (total 60 minutes scan)

2.2Abdomen (Upper) Ultrasound

- **Common indications include:**

Presence/size/position of organs	Pancreatitis
Hepatosplenomegaly	Cysts/masses
Biliary Disease (jaundice)	? Collections
Pyloric stenosis	Upper abdomen pain
Malrotation	Intussusception

- **Preparation**

Patients must fast for Abdominal Ultrasound

- **Procedure**

1. A transducer covered with warm gel is placed on the abdomen and moved to all areas of interest.

- **Notes:**

Upper Abdomen Ultrasound takes 30 minutes

2.4 **Abdomen/Pelvis for Appendicitis**

Preparation

- Fasting (as per table)
- Full Bladder

2.5Chest 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

2.6Head 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.

2.7Hip Ultrasound

- **Common indications include:**

Hip Displasia

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

2.8Neck 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

2.9Pelvic ultrasound

- **Common indications include:**

Bowel Disease e.g. necrotising enterocolitis (NEC)

Collections

Cysts

Masses

Uterus pathology

Ovarian pathology

Appendicitis

Precocious puberty

- **Preparation**

Fasting is NOT required for pelvic scans

A full bladder is mandatory

- **Procedure**

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

- **Notes:**

Pelvic Ultrasound takes 30 minutes

2.11Renal Doppler

- **Common indications include:**

Acute Renal failure

Increased creatinine

Hypertension

suspected Renal Artery Stenosis

- **Preparation**

As for Renal Ultrasound

Fasting as per table for Renal Artery Stenosis

- **Procedure**

As for Renal Ultrasound

- **Notes:**

Doppler scan takes an additional 45 minutes after the 15 minute Renal Ultrasound. (total 60 minutes scan)

2.10Renal Ultrasound

- **Common indications include:**

Hydronephrosis	masses
suspected renal anatomy/anomaly	UTI
increased creatinine	cysts
altered renal function	

- **Preparation**

Patients should be hydrated:

- Babies should have a feed before scan
- Older children should have a full bladder – drink water 1 hour prior to Ultrasound (SEE TABLE)

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 400mls of water starting ½ hour prior to coming to department
4 – 6 years	Drink 500mls water starting 1 hour prior to coming to department
7 – 12 years	800 mls 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 on the abdomen, side and back

- **Notes:**

Renal Ultrasound takes 30 minutes

2.12Scrotum/Testes Ultrasound

- **Common indications include:**

Undescended Testes

Torsion

Hydrocele

Hernia

Ambiguous Genitalia

Suspected Epididymoorchitis

- **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

2.13Spine 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

2.14 **Vascular Studies**

- Doppler
- Neck
- Upper extremity
- Lower extremity

Preparation

NO preparation (Babies after feed when settled - check preparation with sonographers on ext 51250; some may need full bladder)

3 MRI Scan Procedures

3.1 General Information

All non-urgent MRI appointments are made through the MRI Administration Clerks (Outpatients ext 52385 Inpatients ext 51922)

All urgent appointments are made through the Staff Specialist or Radiology Fellow on-duty (ext 52941) or via switch board after hours.

A MRI Pre-scan (safety) Questionnaire **must** be completed for all patients and accompanying guardians (refer to: http://intranet.kids/ou/medical_imaging/resources/forms/MRI_pre-

scan_questionnaire.pdf). If ANY of the answers to the questions are **"yes"**, contact MRI as soon as possible before bringing the patient to the scan room (ext 52883)

All patients requiring an MRI to be performed under General Anaesthetic (GA) or sedation are required to:

i. Fast

ii. Have a signed consent (if GA required)

iii. Have a pre-op checklist completed

iv. Have an MRI questionnaire completed and signed.
Refer to **MRI Under General Anaesthetic – Patient Process Policy**: http://intranet.kids/o/documents/policies/policies/2008-8119.pdf for further information about related procedures.

FASTING for non-GA scans is only necessary for Abdomen Scans and Sedation.

ORAL CONTRAST is required for Bowel scans.

INTRAVENOUS CONSTAST may be required.

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.

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 not required)
- 6 months to 5 years – GA required
- 3 – 6 months – sedation required
- 0 – 3 months – feed and sleep technique.

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.

IV contrast is commonly required and is given based on the indication of the scan or if additional information is required after base imaging is acquired. If it is known that contrast is required the patient will usually be cannulated prior to the scan (please inform staff if Emla cream is necessary). This contrast agent does not usually have any side effects; however, **if the patient has any allergies and/or impaired renal function please inform staff immediately**.

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

MRI Scan Under Sedation

(to be charted as "on call" on "once only" chart)

- Refer to Procedural Sedation (Paediatric Ward, Clinic and Imaging Areas) Practice Guideline (http://chw.schn.health.nsw.gov.au/o/documents/policies/guidelines/2011-9017.pdf) 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.

MRI sedated patients require monitoring throughout the examination. This is to be organised on a case by case basis.

Given sedation and arrange transport immediately. Do not wait till the child is asleep before organising transfer.

3.3 Abdomen MRCP (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**

Patients are required to fast 4 hours

IV contrast is frequently required for angiography (vascular) and evaluation of lesions and inflammatory processes.

Oral contrast is required for bowel imaging. MRI Department will organise oral contrast administration.

The scans usually acquired with breath-hold and breathing triggered techniques. No movie.

- **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
Development delay
Hydrocephalus
Orbital imaging
Pituitary imaging(LCH; growth hormone deficiency; hypothalamic lesion)
Headaches
Stroke
Psychology workup
Trauma
Neurofibromytosis (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

Tempra-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)

- **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**

Nil

- **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 – liaise with CT scan staff feeding and transfer times

remove any metal from babies clothing

remove any jewellery

wrap and feed baby in a quiet area

CT Scan Under Sedation

(to be charted as "on call" on MAR chart?)

Procedural Sedation policy is available on intranet
http://intranet.kids/o/documents/policies/guidelines/2006-8293.pdf

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

Sedation administration as per sedation policy

Sedated patients must be transported as per sedation policy

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 needed for children that for any reason can't co-operate for scan (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.

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.

Fasting periods: *6 hours* for milk and solids, *2hours* 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.

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.

Abdomen scans require Oral contrast except renal calculi scans and fungogram (and they require IV contrast only).

CT scans that require Oral contrast will always require IV contrast as well.

4.5 IV Contrast