

IVP (WITH/WITHOUT TOMOGRAMS)

SUPPLIES REQUIRED FOR IVP EXAMINATION:

Gloves
Tourniquet
Tegaderm
Alcohol prep wipes
20g and 22g IV needle
(2) 16g needles
Benadryl and other emergency drugs
Omnipaque 300 or Visipaque 320* (*depends on the lab work)
2) 60ml syringes
IV connector Tape
2x2 gauze
(2) 1 Oml Saline Flush
Coflex colored bandage
Emesis basin
Compression band (only if needed)

GENERAL CONSIDERATIONS FOR IVP EXAMINATIONS

1. Set up the room before calling in the patient.
2. Verify patient's name, date of the birth, and the procedure.
3. Obtain thorough patient history to include symptoms of urinary problems and prep for examination.
4. Be certain to ask the patient all the questions on the history sheet and the allergy form and document the information on the appropriate form..
5. If the patient answers "yes" to diabetes ask the patient what type of medication he/she is taking and if the medication contains metformin or glucophage.
6. If the patient indicates that the medication contains metformin or glucophage, then review the form that states not to take it for 48 hours after the exam. Ask the patient to sign the form and make a copy for your records before giving the paperwork to the patient.
7. If the patient answers "yes" to any of the questions on the bottom portion of the history sheet, you will need to obtain lab work (BUN/Creatinine).
8. There are four ways to get obtain lab work (in the following order):
 - a. Soarian
 - b. Check for recent contrast studies
 - c. Call the doctor's office who ordered the exam
 - d. Call one of their primary doctors for lab results

LAB WORK HAS TO BE WITHIN THE LAST 6 MONTHS
9. If the patient has no labs, then an ISTAT needs to be ordered. You will need to get a script faxed over from the ordering doctor.

10. Explain to the patient the procedure for the exam. It is important to ask the patient to empty their bladder before starting the exam.
11. Inform the patient that you will be taking preliminary KUB films to show to the doctor.
12. Present the complete history and the scout films to the radiologist.
13. Ask a technologist to start an IV and if no labs to perform an ISTAT.
14. Once you receive the BUN and Creatinine, you will need to use the GFR calculator to get the MDRD GFR value which will indicate if you are going to use 100 ml Omni 300 or Visi 320 (GFR calculator is located on ISITE).
15. See attached form for the GFR values
16. The radiologist will instruct the technologist as to the type and amount of contrast to be administered and what level tomograms to obtain.

****To find levels for tomograms, measure the patient and divide by three.**
(21cm....would be levels 7, 8, and 9)

17. Briefly and efficiently explain to the patient about what they might expect during the contrast injection:
 - a. Some might feel very little or nothing at all
 - b. Feel warm all over
 - c. Metallic taste in their mouth
 - d. Coolness at the IV site
 - e. Feel a sensation of urinating
18. If the patient is having any of the following symptoms below inform the radiologist immediately:
 - a. Burning or stinging sensation at or around the IV site
 - b. Shortness of breath
 - c. Tightness in the chest
 - d. Itching or hives
19. Contrast needs to be injected as quickly as possible to make sure there is no contrast in the kidney for the immediate film or tomography.

20. Routine projections as follow:

IVP (40yrs and younger)

IVP w/Tomography (40yrs and older)

- | | |
|-----------------------------|--|
| 0 min AP Kidneys | 0 min (3)tomo films (**levels assigned by Radiologist) |
| 5 min AP Kidneys | 5 min AP Kidneys |
| 10 min AP Kidneys & Bladder | 10 min AP Kidneys & Bladder |
| 10 min RPO/LPO | 10 min RPO/LPO |
| 20 min AP and PA | 20min AP and PA |
| Post Void Erect | Post Void Erect |
21. After taking the 20 min PA film show all the films to the radiologist in order to take the post void erect film.
 22. Once the radiologist looks at the films and gives you confirmation to post void the patient, remove the IV from the patient's arm.
 23. Take a full upright abdominal post void film and review the last film before letting the patient leave.

SUPPLIES REQUIRED FOR IVP EXAMINATION:

Crash cart	2x2 gauze
Emesis basin	IV sterile start kit
Alcohol prep wipes	(2) 10cc saline flushes
Tape	(2) 60cc syringes
Compression band	20 and 22 gauge IV needles
100cc Omnipaque 300 or 100cc Hypaque 60	Benadryl and other emergency drugs

INTRAVENOUS PYELOGRAM (ADULT)

****For all patients over 40, the IVP/Nephrotomogram protocol should be followed:**

ROUTINE PROJECTIONS: AP ABDOMEN (PRELIMINARY), AP KIDNEYS (IMMEDIATE), AP KIDNEYS (5 MINUTE), AP KIDNEYS AND BLADDER (10 MINUTE), AP AND PA ABDOMEN (20 MINUTE), AP UPRIGHT ABDOMEN (POST VOID).

AP ABDOMEN (PRELIMINARY):

14 X 17	LENGTHWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

AP KIDNEYS (1 MINUTE):

14 X 17	CROSSWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at a point midway between the iliac crest and the xiphoid process of the sternum.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

AP KIDNEYS (5 MINUTE):

14 X 17
BUCKY
44"

CROSSWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at a point midway between the iliac crest and the xiphoid process of the sternum.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

AP KIDNEYS & BLADDER (10 MINUTE):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

BILATERAL OBLIQUE KIDNEYS & BLADDER (10 MINUTE):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: From the AP position, oblique the patient 30 degrees towards both the right and left sides, for two separate exposures.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

****Must include both kidneys on each film.****

**** Just prior to the 20 minute film, compression should be removed.****

AP ABDOMEN (20 MINUTE):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

PA ABDOMEN (20 MINUTE):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: Prone with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

AP UPRIGHT ABDOMEN (POST VOID):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP upright with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

INTRAVENOUS PYELOGRAM (ADULT) WITH NEPHROTOMOGRAM

ROUTINE PROJECTIONS: AP ABDOMEN (PRELIMINARY), AP KIDNEYS (PRELIMINARY TOMOGRAPHIC SCOUT), AP KIDNEYS (0 MINUTE TOMOGRAPHIC CUTS X 3), AP KIDNEYS (5 MINUTE), AP KIDNEYS AND BLADDER (10 MINUTE), AP AND PA ABDOMEN (20 MINUTES), AP UPRIGHT ABDOMEN (POST VOID).

AP ABDOMEN (PRELIMINARY):

14 X 17	LENGTHWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

AP KIDNEYS (1 MINUTE):

14 X 17	CROSSWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at a point midway between the iliac crest and the xiphoid process of the sternum.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

AP KIDNEYS (5 MINUTE):

14 X 17	CROSSWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at a point midway between the iliac crest and the xiphoid process of the sternum.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

AP KIDNEYS & BLADDER (10 MINUTE):

14 X 17	LENGTHWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

BILATERAL OBLIQUE KIDNEYS & BLADDER (10 MINUTE):

14 X 17

LENGTHWISE

BUCKY

SUSPENDED EXPIRATION

44"

PATIENT POSITION: From the AP position, oblique the patient 30 degrees towards both the right and left sides, for two separate exposures.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

****Must include both kidneys on each film.****

**** Just prior to the 20 minute film, compression should be removed.****

AP ABDOMEN (20 MINUTE):

14 X 17

LENGTHWISE

BUCKY

SUSPENDED EXPIRATION

44"

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

PA ABDOMEN (20 MINUTE):

14 X 17

LENGTHWISE

BUCKY

SUSPENDED EXPIRATION

44"

PATIENT POSITION: Prone with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

AP UPRIGHT ABDOMEN (POST VOID):

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP upright with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

INTRAVENOUS PYELOGRAM (CHILDREN FIVE YEARS OF AGE OR LESS)

ROUTINE PROJECTIONS: AP ABDOMEN (PRELIMINARY), AP ABDOMEN (1 MINUTE), PA ABDOMEN (5 MINUTE), LATERAL ABDOMEN (ONLY IF PATIENT IS LESS THAN 1 YEAR OLD), AP UPRIGHT ABDOMEN (POST VOID).

AP ABDOMEN (PRELIMINARY):

SIZE OF FILM DETERMINED BY PATIENT

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

Inject contrast as indicated by radiologist.

*The amount of contrast used (Omnipaque 300 OR Hypaque 60) is determined by the weight of the child, NOT the age.

3 cc's of contrast per kilogram. 1 kg. = 2.2 lbs.

4.5lbs – 6cc
6 lbs – 9cc

20lbs – 24cc
26lbs – 28cc

9 lbs – 12cc
11 lbs – 15cc
13 lbs – 18cc
15 lbs – 20cc
17 lbs – 22cc

33lbs – 30cc
40lbs – 36cc
44lbs – 40cc
45lbs – 50cc

AP KIDNEYS (1 MINUTE):

SIZE OF FILM DETERMINED BY PATIENT

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: AP supine with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

PA ABDOMEN (5 MINUTE):

SIZE OF FILM DETERMINED BY PATIENT

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: Prone with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at a level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: Gonads on **ALL** patients.

LATERAL ABDOMEN (ONLY IF PATIENT IS LESS THAN 1 YEAR OLD):

SIZE OF FILM DETERMINED BY PATIENT

14 X 17
BUCKY
44"

LENGTHWISE
SUSPENDED EXPIRATION

PATIENT POSITION: Lateral recumbent on their left side.

CENTRAL RAY: Perpendicular to the film 1" above the crest, and 1" anterior to the spine.

COLLIMATION: Collimate to the skin surface.
SHIELDING: None.

AP UPRIGHT ABDOMEN (POST VOID):

14 X 17	LENGTHWISE
BUCKY	SUSPENDED EXPIRATION
44"	

PATIENT POSITION: AP upright with mid-sagittal plane centered to the midline of the table.

CENTRAL RAY: Perpendicular to the film, at the level of the iliac crest.

COLLIMATION: Collimate to the skin surface.

SHIELDING: None.

SHOULDER ARTHROGRAM

FLUORO KVP – 70

DIGITAL FLUORO WITH PATIENT INFORMATION TYPED IN

PATIENT POSITION FOR FLUORO – SUPINE

CONTRAST SUPPLIES: 50ccs HYPAQUE 60, ARTHROGRAM TRAY, STERILE GLOVES, 1% LYDOCAINE, SPINAL NEEDLES (20G AND 22G), ALCOHOL PREPS, LEAD GLOVES AND APRONS, EXTENSION TUBING.

GENERAL DESCRIPTION OF PROCEDURE AFTER SET-UP IS COMPLETE

- No routine preliminary films are required unless the patient does not have a routine shoulder xray within the last thirty (30) days.
- If preliminary films are required, the procedure for a routine shoulder should be followed.
- The radiologist will scrub the injection site with Betadine solution.
- The technologist should assist the radiologist in drawing up the xylocaine, Lidocaine, and/or Omnipaque.
- The radiologist will drape the area and make the injections.
- Following the injection of contrast, the radiologist will fluoroscope the patient's shoulder.
- Following the completion of fluoroscopy, the radiologist will instruct the technologist to exercise the patient's shoulder and perform overhead radiographs if necessary.

