



## Trauma CT

### 1. Concept

Early and complete (head to pelvis) CT scanning is indicated in the initial assessment of the blunt trauma patient even when there is physiological compromise **if there is concern about possible significant injury**. Early identification of the bleeding point(s) facilitates planning of surgical / radiological intervention.

***Any patient considered too unstable for CT should go immediately for definitive care. Any debate about mode of treatment (ie surgical vs interventional radiological) or initial approach (ie laparotomy vs pelvic fixation) must be resolved by CONSULTANT to CONSULTANT discussion***

The decision to proceed to trauma CT should be made as early as possible (within 15 minutes of patient arrival) and documented. Once the decision to proceed to trauma CT is made the objective should be to get the patient to CT ASAP - aiming for **within 30 minutes** of their arrival.

### 2. Requesting and CT and imaging protocol

Communicate with the CT department (either directly **(x23617 / x26789)** or via the on call radiologist out of hours) *as soon as possible* when a CT is needed. Endeavour to be *as accurate as possible* when asked when the patient will be ready to go round: we almost always underestimate how long it will take to ensure the patient is ready to transfer.

A specific request form for trauma CT will be found located with the trauma chart. Please complete as fully as possible. The request form is also in the appendices to this document.

When requesting a head CT secondary to trauma consider the need for cervical spine and facial images too. In **most** instances cervical spine images will be justified.

In **most** instances of **blunt** major trauma **affecting more than one region of the body** the default position will be to scan **head, neck, chest, abdomen and pelvis**. In **penetrating** torso trauma head and neck may well not be needed.

Accurate provision of clinical information and differential diagnoses will aid the radiologist greatly. Specific diagnostic questions should be highlighted (e.g.? aortic injury).



### 3. Female patient of child bearing age

An attempt must be made to establish pregnancy status. If the patient is unable to communicate or unsure as whether or not she may be pregnant endeavour to perform urinary PT before CT (catheterise if necessary). If you cannot establish pregnancy status the senior clinician must document why CT should proceed without confirmation of non-pregnant state.

### 4. Intravenous access

The minimum access is a green venflon in the right ante-cubital fossa (left sided injections compromise interpretation of mediastinal vasculature).

### 5. Contrast in trauma CT

Blunt trauma: Oral contrast is **not required** for abdominal CT in trauma patients.

Penetrating trauma (Stable): Oral, rectal and iv contrast will be needed. The radiographer will advise on delivery of rectal contrast.

Penetrating trauma (unstable) but not immediately for theatre: iv contrast should be given first. PR contrast may be needed after initial scans at the radiologist's discretion.

CT Cystography: this will generally be performed after the initial trauma CT at the radiologist's discretion. All unstable or significantly injured patients should be catheterised prior to CT assuming there are no contraindications but this should not unduly delay transfer to CT. Clamp the urinary catheter prior to transfer.

### 6. Transfer to CT

Transfer should be as smooth and fast as possible. Aim to use either the trauma transfer mattress (when available) or leave the patient on the scoop stretcher. The scan can be performed on the scoop stretcher but ensure that there is as much distance as possible between the top of the patient's head and the metal clip at the top of the stretcher.

If the patient cannot be transferred on a stretcher or transfer mattress then 4 staff must accompany the patient to allow safe log-rolling and sliding.

Phone CT on x23617 when leaving A&E to ensure they are ready.

Take the route past the Paediatric Emergency Department.

The most senior doctor (plus anaesthetist if necessary) and one nurse **MUST** stay in the control room whilst the patient is being scanned. **ALL** other non CT personnel must wait in the corridor outside CT to allow the radiographer to perform the scan, and the radiologist to issue an initial report without interruption/distraction.



## 7. Reporting

As the patient is on the scanner the reporting radiologist will fill in an Initial Primary Survey Review Proforma detailing the following:

- A - Airway (is it patent)
- B - Breathing (lungs / pneumothoraces)
- C - Circulation (bleeding)
- D - Disability (major intracranial pathology / major spinal injury)

In other words the information you need for immediate management. This is though, by its very nature, a PROVISIONAL immediate opinion which may well be superseded at a later time. This form will stay in CT for reference by all involved clinicians. At the bottom will be a space to fill in your contact details so that once the reporting radiologist has had time to properly look at the CT they have all the relevant points of contact easily to hand.

The Radiologist will then go and carefully review the whole scan (1-2,000 images). We need to insist that they are not repeatedly disturbed, as is often the case, whilst they do this. Each interruption means starting again from the beginning to avoid mistakes. Once completed a verified report will go onto the Results server detailing all areas. Any significant findings particularly where there is a variance to the Initial Primary Survey report will be phoned through to relevant clinicians. Please note if contact details are not left then this can't be done.

These scans will then be double read within 24 hours to check for any errors with a final full report going onto the results server. Again the list of contact details will be invaluable where there is a change in findings.

## 8. Post CT scanning

If life-threatening injuries are identified the patient should be transferred to the appropriate point of care (theatres or interventional radiology) whenever possible and only returned to resus if no safe alternative exists.

Where no need for immediate treatment is identified the patient will generally be returned to resus for a more thorough secondary survey.