

TRAUMA IMAGING

SCANS AND WHEN TO GET THEM



What is a **PAN SCAN**?



**CT Head
(non-con)**



**CT Spine
(non-con)**



**CT Chest
(arterial)**



**CT Abdo-
Pelvis
(venous)**

Imaging for blunt cerebral vascular injury

If any one of the below
Expanded Denver Criteria

Signs & Symptoms	- arterial hemorrhage from neck, nose, or mouth - cervical bruit in patients <50y - expanding cervical hematoma - focal neurologic deficit (TIA, hemiparesis, vertebrobasilar symptoms, Horner syndrome) - neurologic exam incongruous with head CT findings - stroke on CT or MRI
Risk Factors	- Le Fort II or III midface fracture - Mandible fracture - Complex skull fracture/basilar skull fracture/occipital condyle fracture - Severe TBI with GCS <6 - C spine fracture, subluxation or ligamentous injury - Near hanging with anoxic brain injury - Seatbelt abrasion with significant swelling, pain or AMS - TBI with thoracic injury - Scalp degloving - Thoracic vascular injury - Blunt cardiac rupture - Upepr rib fracture

CTA Head and Neck



Imaging for renal injury

Renal	Bladder	Urethra
- Penetrating abdomen - Blunt trauma + - Gross hematuria - Microscopic hematuria + hypotension - High risk mechanism (rapid decel, low rib/pelvic #, direct contusion)	- Penetrating pelvis - Blunt trauma + - Gross Hematuria - Microscopic hematuria + pelvic rim or obturator #	- Blood @ meatus - Scrotal hematoma - Inability to void



**Delayed Phase
CT Abdo**



**Retrograde CT
cystogram**



**Retrograde
urethrogram**

Imaging for Extremity Vascular Injury

Hard Signs	Soft Signs
- Pulse deficit (after reduction) - Pulsatile bleeding - Bruit or thrill - Expanding hematoma	- Nonexpanding hematoma - Neurologic deficit - Diminished pulse - Proximity to fracture, dislocation or penetrating wound



Penetrating



Blunt



CTA Extremity



**Operative
Exploration**

Other Scans PRN

1. **CT Facial Bones** if concern for facial injury
2. **CT abdo w/ rectal or oral contrast** if concern for retroperitoneal hollow viscus injury
3. **CT pelvis with arterial phase** if vascular pelvic injury based on venous phase or known pelvic