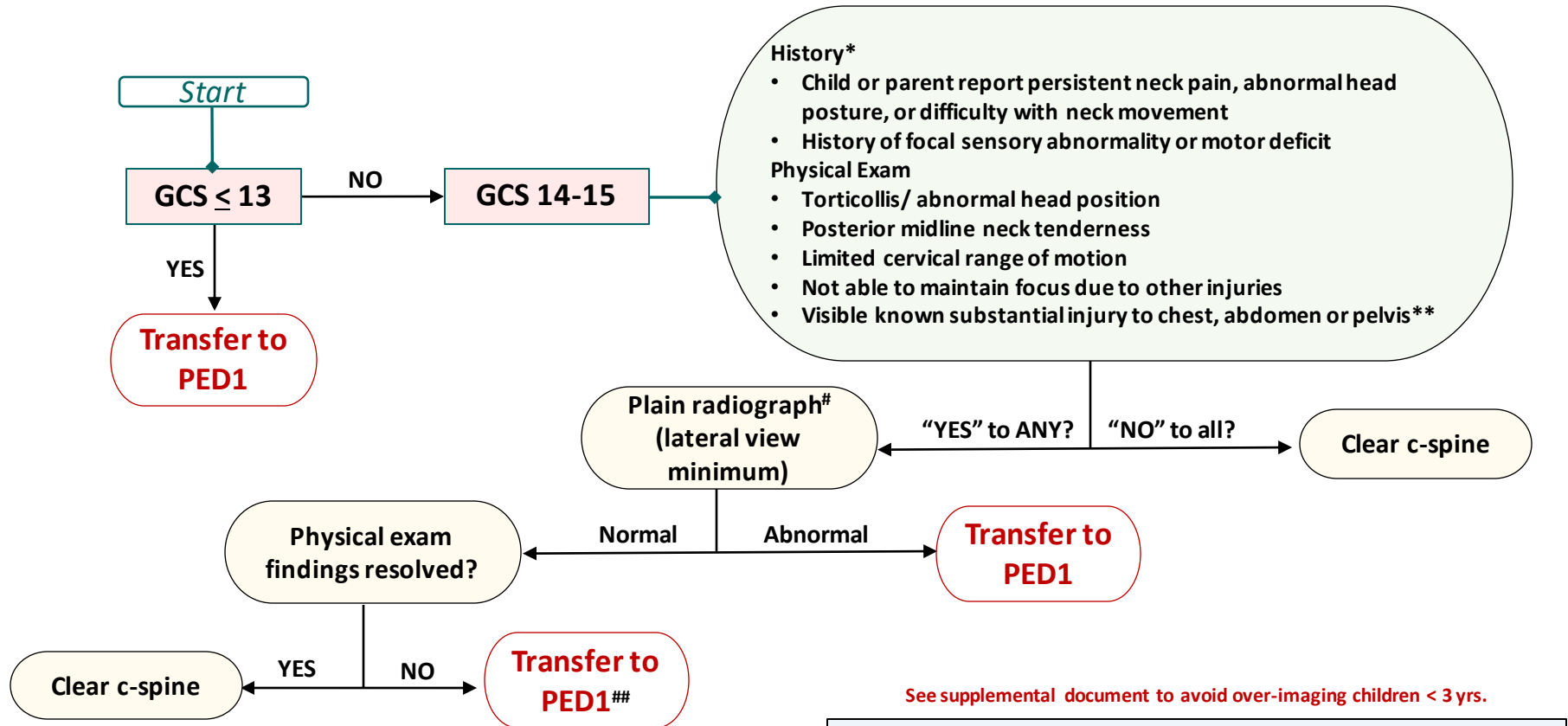


2023 Pediatric Cervical Spine Clinical Guideline

Blunt Mechanism



History*

- Child or parent report persistent neck pain, abnormal head posture, or difficulty with neck movement
- History of focal sensory abnormality or motor deficit

Physical Exam

- Torticollis/ abnormal head position
- Posterior midline neck tenderness
- Limited cervical range of motion
- Not able to maintain focus due to other injuries
- Visible known substantial injury to chest, abdomen or pelvis**

Plain radiograph#
(lateral view minimum)

"YES" to ANY?

"NO" to all?

Clear c-spine

Normal

Abnormal

Transfer to
PED1

Physical exam
findings resolved?

YES

NO

Clear c-spine

Transfer to
PED1##

##Recommend PED1 telemedicine
consult before transfer
(utahptn.org)

See supplemental document to avoid over-imaging children < 3 yrs.

*Stronger consideration for imaging should be given toward patients with the following mechanisms of injury: diving, axial load, clothes-lining and high risk MVC (head-on collision, rollover, ejected from the vehicle, death in the same crash, or speed > 55 mph)

** Substantial injury is defined as an observable injury that is life-threatening, warrants surgical intervention or warrants inpatient observation

All imaging should be read by an attending physician

This algorithm does not replace clinical judgment and is not intended to be prescriptive for all patients.

C-Spine Clearance: Who Doesn't Need Imaging?

No Imaging Needed

- GCS 14 or 15
- Not intoxicated
- < 3 years & no high-risk mechanism*



- No neurologic deficit
- No midline tenderness
- No distracting injuries
- No unexplained hypotension

*Exceptions Based on Mechanism (<3 years)



Fall > 10 feet

Motor Vehicle Collision



Non-Accidental Trauma

Special Populations

- Persistent pain & normal x-rays
- Advanced imaging vs. c-collar?



- Obtunded or intubated & normal CT
- Risk of pressure sore w/c-collar
- MRI or remove c-collar?

AVOID over-imaging for c-spine clearance



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Pediatric Cervical Spine Clearance Recommendations



Step 1



Step 2



Step 3

IS IMAGING NEEDED?
EVALUATE FOR:

Symptoms:

- Neck pain, difficulty w/ movement
- Focal sensory/motor deficit

Mechanism:

- Dive/axial load, clothesline
- MVC w/ any of: rollover, head-on, death of other, >55mph

Physical Exam:

- GCS < 14
- Torticollis or limited motion
- Midline injury
- Distracting injury
- Substantial injury to torso on admission

If any present - go to Step 2

IF ANY PRESENT
ASK FOR:

Lateral C Spine X-ray if:

GCS 14+
OR

GCS 9-13 anticipated to improve to 14+ within 24 hs



Non-con C spine CT if:

GCS < 9
OR

GCS 9-13 unlikely to improve in 24 hs



NEXT STEPS:

ABNORMAL X-Ray: Consult spine

Normal X-Ray +

- No other symptoms: **clear clinically**
- Midline neck pain:
 - Maintain collar 2 wks and repeat exam
 - Flex-ex with at least 30 degrees
 - **Consult spine**

ABNORMAL CT: Consult spine

NORMAL CT +

- Anticipate GCS 14+ w/in 72 hrs → repeat exam:
 - Exam normal: **clear clinically**
 - **Exam abnormal: consult spine**
- Unlikely to be GCS 14+ w/in 72h → **MRI**

ABNORMAL MRI: Consult spine

NORMAL MRI: Clear C-spine



@StayCurrentMD

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