



MN Western Regional Trauma Advisory Committee (WESTAC)  
 Trauma Treatment Guideline – 1.0  
 Pediatric Radiation Exposure Guideline

Pediatric Radiation Exposure Guideline

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**PURPOSE:**

To establish guidelines for decreasing radiation exposure in the pediatric trauma patient population for ages 0-16 years of age.

**GUIDELINE STATEMENTS:**

- A. Pediatrics represents a small fraction of tests, BUT the fraction is increasing.
- B. Higher radiation doses and larger lifetime risk results in a higher lifetime cancer mortality risk.
- C. Lifetime risk of cancer in a single dose of radiation is higher in children.
- D. Risks of doing CT scans versus the benefits of doing scans should be considered.
- E. Alternatives to CT scan include:
  1. Evaluate and determine if there is a need for radiologic studies
  2. Get baseline studies FIRST (i.e. x-rays)
  3. Never delay transfer to definitive care to get scans
  4. If it is felt that a CT scan is needed, USE contrast to decrease the need for repeated CT scans at the definitive care facility.

**PROCEDURE:**

**A. Pediatric C-Spine Clearance (Age < 3 years of age):**

1. C-spine injury in children <3 years of age is extremely rare (occurring in <1%) of injuries in this age group.
2. Nearly all injuries in this age group occur above C3
3. Factors associated with C-Spine injury in children <3 years of age are:
  - a. CGS <14
  - b. GCS eye score = 1
  - c. MVC mechanism of injury
  - d. May be a higher incidents of injury between 2 and 3 years of age
4. The vast majority of the time, Level III & IV trauma centers should not clear C-Spines in children < 3 years of age if concern for injury, transfer to higher level of care is indicated.



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**B. Pediatric C-Spine Clearance (AGE: 3-16 years of age)**

1. NEXUS Criteria Applies to pediatric patients!
  - a. NEXUS CRITERIA (Bedside clearance of C-Spine is appropriate when):
    - *Patient is NOT intoxicated.*
    - *Patient has normal mentation.*
    - *Patient has NO neurologic deficits.*
    - *Patient has NO midline neck pain.*
    - *Patient has NO distracting injuries.*
  2. Clinically clearing the Pediatric C-Spine:
    - a. **Mental status should be AGE APPROPRIATE!**
      - Ask parents/guardians to help you assess this.
      - If mental status is altered, **DO NOT CLINICALLY CLEAR!**
        1. Obtain imaging (reference algorithm below)
    - b. **A child does NOT need imaging when:**
      - Normal Alertness/Mental Status
      - No Midline Neck Pain
      - No Neurologic Impairment
      - No Distracting Injuries



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**C. Pediatric C-Spine Clearance Algorithm (Ages: 3-16 years of age)**

1. Reference algorithm below

## Pediatric C-Spine Clearance Algorithm (3-16 Years of Age)

