

# 31. C-Spine Clearance Algorithm

This clinical pathway is intended to supplement, rather than substitute for, professional judgment and may be changed depending upon a patient's individual needs. Failure to comply with this pathway does not represent a breach of the standard of care.

See 30. Trauma Management Pathway

For Alert (Glasgow Coma Scale Score = 15) and Stable Trauma Patients Where Cervical Spine (C-Spine) Injury is a Concern

Perform **Manual in-Line Stabilization** of the C-Spine  
Maintain and support ABCs

- ☐ Age  $\geq$  65 Years
- ☐ Glasgow Coma Scale score of 14 or less
- ☐ Decreased alertness secondary to intoxication
- ☐ Disorientation to person, place, time, or events
- ☐ Inability to remember 3 objects at 5 minutes
- ☐ Delayed or inappropriate response to external stimuli
- ☐ Any focal deficit on motor or sensory examination or paraesthesia in extremities

No

- ☐ Midline Neck Pain
  - ☐ Midline C-spine Tenderness (C1 – T1)
- Provide immediate adequate analgesia**

Yes

No

- ☐ **Able to Actively Rotate Neck 45° Left and Right Without Pain?**
- The doctor should allow the patient to perform the above movement while maintaining in-line stabilization without moving the patient's neck

Unable

Able

**No Radiography Necessary**  
Document clearly in patient's clinical notes successful completion of **ALL** the above steps

**Remove Immobilization devices**

Yes

- Perform C-spine immobilization with the **patient flat on a trolley** with **Head Blocks or Blanket Rolls** strapped to the patient's head and trolley. **DO NOT APPLY A C-COLLAR**
- Keep patient immobilized as above **UNTIL** patient is reviewed and C-spine is cleared by the **ED doctor / Orthopaedic surgeon**
- Order **ALL 3 views** C-spine X-rays;
  - a cross-table **lateral view** - must be of good quality and adequately visualize the base of the **occiput to the upper part of T1**.
  - an **anteroposterior view** - must reveal the spinous processes of **C2 to C7** and up to **C7-T1**
  - an **open-mouth view** to visualize the **odontoid process of C2**. Must visualize the **entire dens** and the **lateral masses of C1**.
- **DO NOT INTERPRET INADEQUATE IMAGES**
- Obtain **CT C-spine IF**;
  - patient is to receive an **immediate CT head**. No c-spine X-rays are required initially
  - X-rays are **inadequate**
  - patient has **persistent symptoms** despite **analgesia and negative X-rays**
  - pathology is noted on c-spine X-rays

Review X-rays and/or CT C-spine images and the patient  
**C-Spine Cleared on Radiology?**

No

- **Consult an Orthopaedic Surgeon**
- Maintain immobilization with the **patient flat on a trolley** with **Head Blocks or Blanket Rolls** strapped to the **patient's head and trolley**

**Symptoms persist?**

Yes

No

Yes