

AOMSI Radiology Report Optional – Linear Translation (Neutral)

Create a Report - PI Demo

Must select at least one

- Angulation Analysis (Flexion - 5th or 6th Editions)
- Relative Translation (Flexion/Extension - 5th or 6th Editions)
- Linear Translation (Flexion/Extension - 5th Edition only)

Optional

- Measurement Graphs
- Posterior Vertebral Body Line Analysis - George's Line (Neutral)
- ALL and PLL Diagrams and Explanations
- Total Linear and Relative Translation (Flexion/Extension)
- Relative Translation (Neutral)
- Linear Translation (Neutral)
- Images with Dot Placement

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**Option will only be active when the Advanced Line Analysis - Vertebral Translation is drawn on the neutral view. This usually occurs when the individual could not do a flexion or extension.*

The Linear Translation Calculation Method will always appear as Figure C.

Cervical Spine Linear Translation (Lateral Neutral View)

Clinical Relevance of Measurements & Analysis

Linear translation measurements on the Neutral Lateral Cervical Spine view can be used in diagnosing Alteration Of Motion Segment Integrity (AOMSI). An AOMSI diagnosis, indicating significant permanent ligament injury and loss of motion of the cervical spine, qualifies the patient for a permanent impairment rating if the linear translation exceeds 3.5mm with confirmation of clinical correlation and MMI. The measurements in this section were obtained from the patient's cervical neutral lateral radiographic view in accordance with the linear translation methodologies described in the scientific literature and AMA Guides.³⁻⁶ The use of this neutral lateral view is considered applicable when the patient is unable to properly extend or flex in the respective extension and flexion views, or in cases where substantial linear translation exists in a neutral position that affects the flexion or extension motion views measurements. This neutral view can be utilized to detect ligament damage and instability with alteration of motion from cervical spine injury and determination of cervical spine permanent impairment.³⁻⁶ In certain cases, the neutral measurements may be offset with the flexion or extension linear translational measurements depending on the clinical circumstances of the patient case presentation and the significance of the neutral view measurements in comparison to the flexion and extension views.^{5,6,16-18} This neutral view is not typically analyzed for AOMSI determination when the flexion and extension views are readily available for analysis.

Neutral



Linear Translation Measurements

Motion Segment	Neutral Translation (A) (mm)
C2-C3	0.1 anterior
C3-C4	2.3 posterior
C4-C5	1.1 posterior
C5-C6	5.3 posterior
C6-C7	1.2 posterior

The table above displays the neutral lateral view cervical spine motion segment linear translation measurements. The method for calculating the linear translation is described in Figure C: Linear Translation Calculation Method. Alteration of Motion Segment Integrity (AOMSI) is diagnosed when there is more than 3.5mm of measured linear translation anteriorly or posteriorly on the neutral lateral radiograph. Measurements exceeding the 3.5mm AOMSI threshold determination are bolded in the table above. When linear translation is greater than 3.5mm, then AOMSI is present, and the patient qualifies for a permanent impairment rating due to permanent damage to the cervical spine ligaments and alteration of motion at that respective motion segment.¹⁻⁴ Linear translation segments exceeding 1.1mm and are less than 3.5mm threshold, are not ratable, but demonstrate evidence of ligament injury and alteration of motion segment from ligament injury. The impressions and discussion on page 1 of this radiology AOMSI report describe any significance of the measurements and analysis.

Figure C: Linear Translation Calculation Method



The method for measuring linear translation is to measure distance A as shown in Figure C, which is the same as the Relative Translation measurement for determining the distance A. On the lateral neutral radiograph of the cervical spine motion segments, a dot is placed at the posterior superior corner of the lower vertebra, and a separate dot is placed at the posterior-inferior corner of the upper vertebra. The distance (A) is measured as illustrated by Figure C, using two parallel lines. Measurements are obtained in the neutral view. The motion segment measurements are displayed in the Relative and Linear Translation Measurement- Neutral View table.