

AOMSI Radiology Report Optional – Relative 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 Relative Translation Calculation Method will always appear as Figure B.

Cervical Spine Relative Translation (Lateral Neutral View)

Clinical Relevance of Measurements & Analysis

Relative translation measurements are 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 relative translation exceeds 20% 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 relative translation methodologies described in the scientific literature and AMA Guides.³⁻⁶ The use of this neutral 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 translation exists in the static neutral position, that may affect translation in the flexion or extension motion views measurements. This view can be utilized to detect ligament damage and instability with loss of motion from cervical spine injury and determination of cervical spine permanent impairment.⁵⁻⁶ In certain cases the neutral measurements may be offset with the flexion or extension translational measurements depending on the clinical circumstances of the patient case and of the significance of the neutral view measurements in comparison to the flexion and extension views.⁵⁻⁶ The neutral view is not normally utilized for translation determination.



Relative Translation Measurements

Motion Segment	Linear Translation (A) (mm)	Superior Body Diameter (B) (mm)	Relative Translation (%)
C2-C3	0.1	28.1	0.4
C3-C4	2.3	30.6	7.5
C4-C5	1.1	31.5	3.5
C5-C6	5.3	30.3	17.5
C6-C7	1.2	28.4	4.2

This table displays the neutral lateral view cervical spine motion segment relative translation calculations. The method for calculating the percentage of relative translation is described in Figure B below. Alteration Of Motion Segment Integrity (AOMSI) is diagnosed when there is more than 20% relative translation, anteriorly OR posteriorly, on the neutral lateral radiograph. Measurements exceeding the 20% AOMSI threshold determination are bolded in the table above. When relative translation is greater than 20%, 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.¹⁻² Impressions and discussion on page 1 of this radiology AOMSI report describe the significance of the measurements and calculations.

Figure B: Relative Translation Calculation Method



Figure B shows the location of the lines to be drawn. 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 B, using two parallel lines. The A-P sagittal plane diameter is measured at the mid-level of the superior vertebra body (B). Distance A is then compared to distance B, by the following formula: Relative Translation is a % that equals 100 times measured translation (A) divided by the superior mid-vertebral body diameter (B); then, the percentage or distance in mm is determined for comparison to the cervical spine relative translation threshold value for AOMSI (>20%). Relative Translation Measurements are obtained, and the percentage is calculated for the neutral lateral view for each motion segment. The patient's measurements and calculations are compiled above in the Table: Relative Translation Measurement- Neutral View.