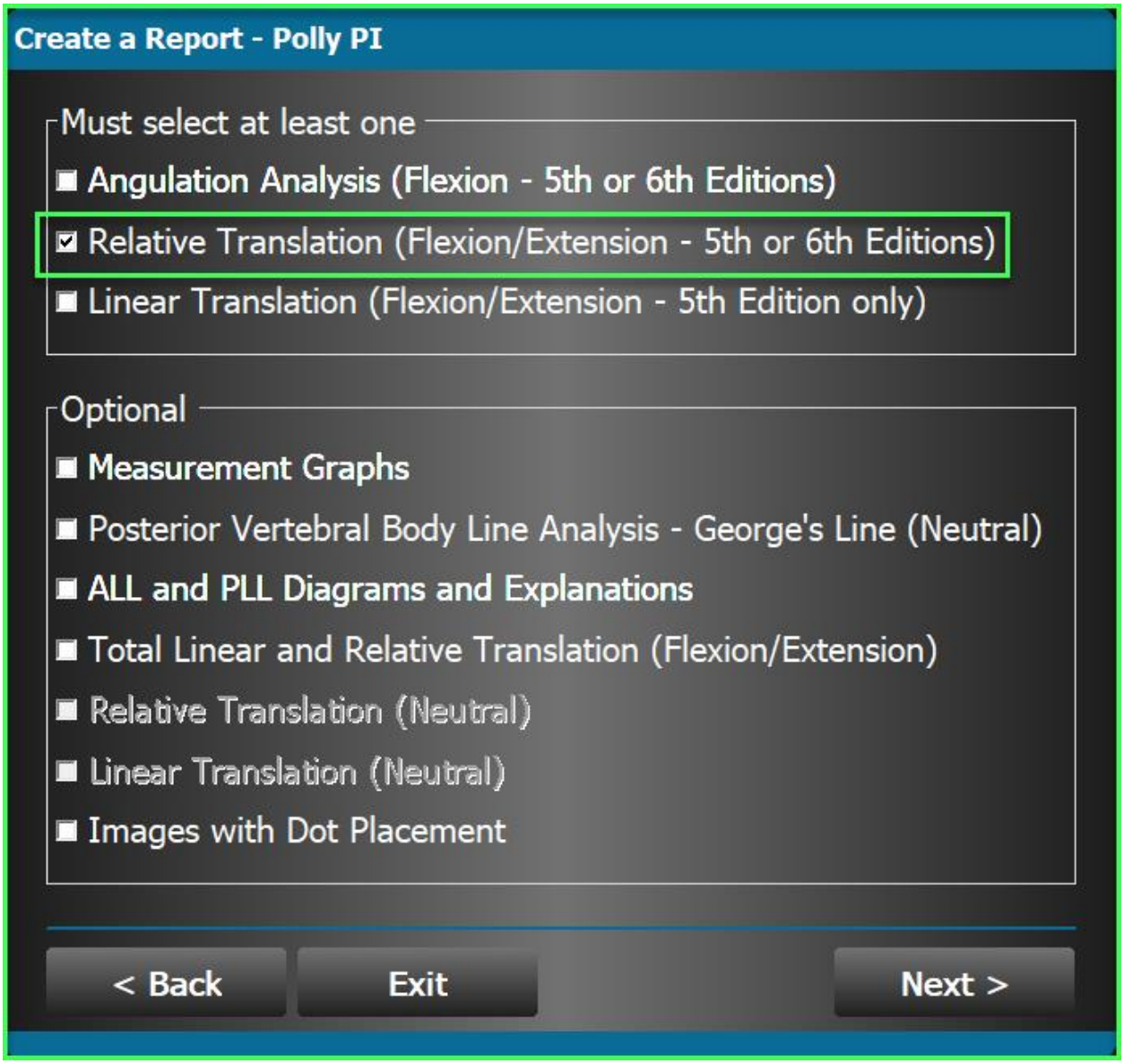
BIOKINEMETRICS
ALIGNING CHIROPRACTIC AND TECHNOLOGY

AOMSI Radiology Report Layout – Relative Translation



The flexion and extension views with the drawn Advanced Line Analysis will appear on the report with the Relative Translation tables containing the outcomes from the drawn analyses.

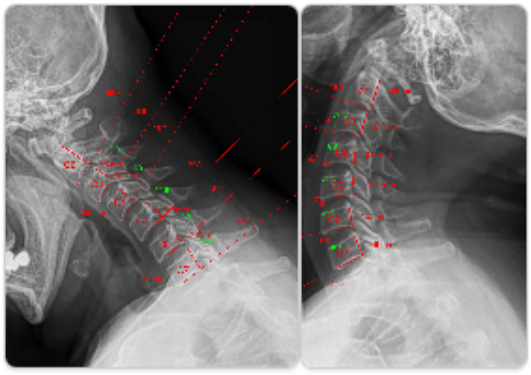
The Relative Translation Calculation Method will always appear as Figure B on the report, even if you don't select the prior Figure (Angulation Analysis).

Cervical Spine Relative Translation (Flexion / Extension)

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 alteration 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 established. The measurements in this section were obtained from the patient's cervical flexion and extension radiographic views in accordance with the relative translation methodologies described in the scientific literature and AMA Guides.[1-8] This method, standardized in the AMA Guides,[1-2] is considered the most scientific method of measuring translation utilized to detect ligament damage and instability with alteration of motion from cervical spine injury to determine cervical spine permanent impairment.[5-6]

Flexion **Extension**



Flexion

Motion Segment	Linear Translation (A) (mm)	Superior Body Diameter (B) (mm)	Relative Translation (%)
C2-C3	0.5 posterior	28.0	1.8
C3-C4	4.9 posterior	33.5	14.6
C4-C5	7.9 anterior	26.7	**29.6**
C5-C6	3.8 posterior	35.8	10.6
C6-C7	1.5 posterior	35.8	4.2

Extension

Motion Segment	Linear Translation (A) (mm)	Superior Body Diameter (B) (mm)	Relative Translation (%)
C2-C3	3.8 posterior	31.8	11.9
C3-C4	3.7 posterior	32.3	11.5
C4-C5	3.9 posterior	34.7	11.2
C5-C6	10.1 posterior	34.7	**29.1**
C6-C7	4.2 posterior	35.3	11.9

The tables above quantify cervical spine motion segment relative translation measurements in flexion and separately in extension. Alteration Of Motion Segment Integrity (AOMSI) is diagnosed when there is more than 20% relative translation, anteriorly OR posteriorly, on flexion OR extension radiographs. (AMA Guides [1-8]) Measurements exceeding the 20% AOMSI threshold determination are bolded in the tables above. The Relative Translation Calculation Method is described in Figure B. 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.[3-4] The 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 vertebral 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 measured superior mid-vertebral body diameter (B); then, the percentage is determined for comparison to the cervical spine relative translation threshold value for AOMSI (>20%). Relative Translation Measurements are obtained in flexion and separately in extension.[3-8] The patient's measurements and calculations are compiled in the Relative Translation Measurements table.

[i]

[i] V7.7.0