Atlas Orthogonality - A.O. is based on the original works of Dr. John F. Grostic. The A.O. Program is an Instrument Adjusting Procedure.

All A.O. listings are in degrees.

This conversion chart should be helpful to upper cervical doctors in converting inches and degrees in adjusting procedures.

A.O. uses abbreviations on: Atlas Cephalic Displacement Angle-ACD which is the same as Atlas-AT; Axis Spinous Rotation-AXSP is the same as Spinous or SP.

The Atlas Frontal Plane Line – AFP is the same as Plane line-PL. The Condylar Axial Circles – C/A factor is used in all programs. Cervical Spine-CS is the same as Lower Angle – LA.

Grostic stated, “the average arm lengths were from 22 inches to 26 inches” and he used an average of 24 inch arm length in his hand adjusting vectors.

To convert from inches to degrees, 1 inch is 2.38 degrees, which we round up to 3 degrees as an average.

In the A.O. Program we eliminated the AT-OD factor and our C/A equations are different, so on the Z vector and High/Low listings a 10-degree conversion factor is necessary to be added or subtracted.

A.O. vectors C3/A5 = 13 degrees. Inches vectors C3/A5 = 1 inch. On the Z vector 10 degrees should be subtracted and then 3 degrees = 1 inch. On inches listings 10 degrees should be added and then 1 inch = 3 degrees.

Zero inches in hand adjusting would be .10 degrees, Z vector (High). One inch high would be 3 degrees plus 10 degrees equals 13 degrees. Z 13 degrees subtract 10 degrees then 3 degrees equals 1 inch.

In A.O. the Z vector never goes below 10 degrees or more than 30 degrees.

On Rotation or the Y-axis, 1 degree off the x-ray (Vertex/Horizontal x-ray) equals 1 inch in hand adjusting. 1 degree rotation equals three degrees on the Y vector.

Orthogonally Yours,

Matthew H. Sweat, BA, D.C., B.C.A.O.
# Upper Cervical Listings and Vectors

## Conversion Key:

- **ATLAS Orthogonality**
- **NUCCA/GroTic/Orthospinology**

<table>
<thead>
<tr>
<th>Patient Name</th>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
<tbody>
<tr>
<td>*ACD = **AT = ATLAS</td>
<td>Rotation</td>
<td>Rotation</td>
</tr>
<tr>
<td>*AXSP = **SP = SPINOUS</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*CS = **LA = LOWER ANGLE</td>
<td></td>
<td></td>
</tr>
<tr>
<td>*AFP = **PL = PLANE LINE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

*AFP. 2mm = 1degree = **1/16 inch = .80 degree

*Degrees = **Inches = C = ________ / A = ________

**Leg Length Inequality**

<table>
<thead>
<tr>
<th>Pre</th>
<th>Post</th>
</tr>
</thead>
</table>

**Figures**

Axis Spinous Rotation

*1mm = 3 degrees = **1.00 degree = 1mm

[Diagram of Axis and Body]

**Average Diameter 19.1 mm@Axis Level**

1MM = 3 DEGREES

[Diagram of Atlas Brackets]

**Conversion Factor**

1 INCH = 3.00 DEGREE

1 DEGREE = 1 mm

1/4 inch = 1.19 DEGREE

24 inch radius

[Diagram of Plane Line]

1/16" = .80 degrees

0.50

4 1/2 inches

Average Mandible Width

114mm (4.5 inches)
CONVERSION TABLE

*DEGREE VECTOR C3 = 13 DEGREES
**INCHES VECTOR C3 = 1 INCH

* Z VECTOR CONVERSION FACTOR:
DEGREES TO INCHES IS SUBTRACT 10 DEGREES &
INCHES TO DEGREES IS ADD 10 DEGREES

*3 DEGREES = **1 INCH
**1 INCH = *3 DEGREES

EXAMPLE
INCHES TO DEGREES CONVERSION ADD 10 DEGREES DEGREES
TO INCHES CONVERSION SUBTRACT 10 DEGREES

<table>
<thead>
<tr>
<th>*DEGREES</th>
<th>**INCHES</th>
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<tbody>
<tr>
<td>10.00</td>
<td>0</td>
</tr>
<tr>
<td>11.50</td>
<td>½</td>
</tr>
<tr>
<td>13.00</td>
<td>1</td>
</tr>
<tr>
<td>16.00</td>
<td>2</td>
</tr>
<tr>
<td>19.00</td>
<td>3</td>
</tr>
<tr>
<td>22.00</td>
<td>4</td>
</tr>
<tr>
<td>25.00</td>
<td>5</td>
</tr>
<tr>
<td>28.00</td>
<td>6</td>
</tr>
<tr>
<td>31.00</td>
<td>7</td>
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*Z

**INCHES

*Y VECTOR

**ROTATION VECTOR

**EACH DEGREE OFF THE X-RAY EQUALS 1 INCH

A – ANTERIOR
P – POSTERIOR

*3.00 DEGREES = **1 INCH

EXAMPLE

<table>
<thead>
<tr>
<th>*DEGREES</th>
<th>**INCHES</th>
</tr>
</thead>
<tbody>
<tr>
<td>3.00</td>
<td>1</td>
</tr>
<tr>
<td>6.00</td>
<td>2</td>
</tr>
<tr>
<td>9.00</td>
<td>3</td>
</tr>
<tr>
<td>12.00</td>
<td>4</td>
</tr>
<tr>
<td>15.00</td>
<td>5</td>
</tr>
</tbody>
</table>

*Y

**INCHES