Chiropractic Measurement Tool Set

The following is a list of the standard chiropractic tools and their functions.

- **Horizontal Distance** – measure the horizontal distance between any two points.
- **Vertical Distance** – measure the vertical distance between any two points.
- **Distance from Vertical Line** – measure the distance from any point to a vertical line.
- **Distance from Horizontal Line** – measures the distance from any point to a horizontal line.
- **Cervical Curve** – marks the cervical curve according to two points.
- **Horizontal Deflection** – measures the angle between a deflection line and horizontal line.
- **Ray Line** – ray line is based on two points.
- **Spinal Body Canal Ratio**
  
  The Spinal body canal Ratio is displayed from 0 ~ 100%.
- **Atlas Plane Line**
  
  To create a line across the atlas plane displayed in degrees.
- **Antero & Retrolisthesis** – the antero and retrolisthesis value is displayed in percentage.
  
  Ratio: 0 ~ 50 %
Center Mass

The Center Mass line is composed by two lines and an extra line connecting the middle points of those two lines.

George's Line

Displays the George’s line and misalignment in degree° + or –; and distance in millimeters.

Vertebral Angles

Cobb’s Angle

The standard Cobb’s Angle measurements

Extended Cobb’s Angle

Multi-Cobb’s angles measurement (up to 5 Cobb’s Angle)

Spine Label

Labeling the spine (C1 ~ C7, T1~T12, L1~L5)

Full Lateral Spine Marking

Marking and measuring for full lateral spine in degrees of + or -

Gonstead Pelvis Analysis – the Gonstead analysis for A-P pelvic X-ray image to calculate the measured deficiency

Logan Marking – full Logan Basic Marking used to measure pelvic anteriority, true sacral anteriority, true leg deficiency and true ischial deficiency. All displayed in red.

Function commands available with all measurement and alignment tools:

Undo – Deletes in reverse order one step at a time of each measurement and alignment point.

Skip – Skips a designated step or ends the measurement and alignment instructions when that option is available.

Hide/Show – Show or Hide current lines or measurements on image.

Delete – Deletes all currently displayed measurements.

Upload (save) – Saves all currently displayed lines and measurements.
Optional Lordosis Tools

Cervical Lordosis provides a subset of four additional tools.

- **Absolute Rotation Angle / Relative Rotation Angle.**
- **C2-C7** — to display actual curve in degree and millimeters with 42° displayed.
- **C1 to Horizontal** — 29° results displayed in degrees.
- **C1-C7** — displayed in degrees.

Lumbar Lordosis provides a subset of five additional tools.

- **Absolute Rotation Angle / Relative Rotation Angle.**
- **Translation** — displayed in millimeters.
- **L1-S1** — displays lordosis in degree and millimeters.
- **L1-L5** — displays lordosis in degrees with 40° displayed.
- **T12-S1** — Cobb measurement displayed in degrees.
How to: Step by Step

Example using the Gonstead Pelvis analysis tool.

Step 1

After selecting the appropriate thumbnail image from the patient series; left click on the chiropractic tool button to display the measurement and alignment tools.

Step 2

A second row of chiropractic tools will be displayed under the standard tool bar. To see a description of each icon hover your cursor over it. Toggling between the distance button and line button will display additional tool buttons. Using this example, hover over the additional displayed icons until you locate the Gonstead Analysis tool. Once located, left mouse click to get started. Since we are using an AP pelvis image that does not include the full lumbar spine we can left mouse click on the Skip button (see text message on 2nd image below) to skip the lumbar marking and go directly to the 16 anatomical points that are used to calculate the displayed measurements upon completion.
Step 3

Continue to follow the text instructions and plot each point in the order of the instructions. If there is any error in point placement you can click on the Undo button as displayed below and correct the point placement. The undo button will remove one step or point placement with each click of the button.

Step 4

After completing the placement of the all anatomical points, the line measurements are displayed along with the Measured Deficiency which is highlighted in the red parenthesis. At this point you will see final text instructions indicating that you now can now click on any control point to modify the measurement.
Final Step

Your last task upon completion of the Gonstead Analysis tool is to either save and upload those measurements by clicking on the upload button or you may choose to remove the current measurements by clicking on the delete button. Any measurements that are saved can be displayed or hidden by clicking on the Show/Hide button.

Applying what was demonstrated for the completion of the Gonstead Analysis you will find the necessary tools and steps that will allow you to use all the features in the chiropractic measurement tool set.