

Lesson 6: The Angle to Line of Progression Measure

This lesson demonstrates the effect of the Angle to Line of Progression measurement on the accuracy of your walking trial results and explains why this measure is essential to accuracy.

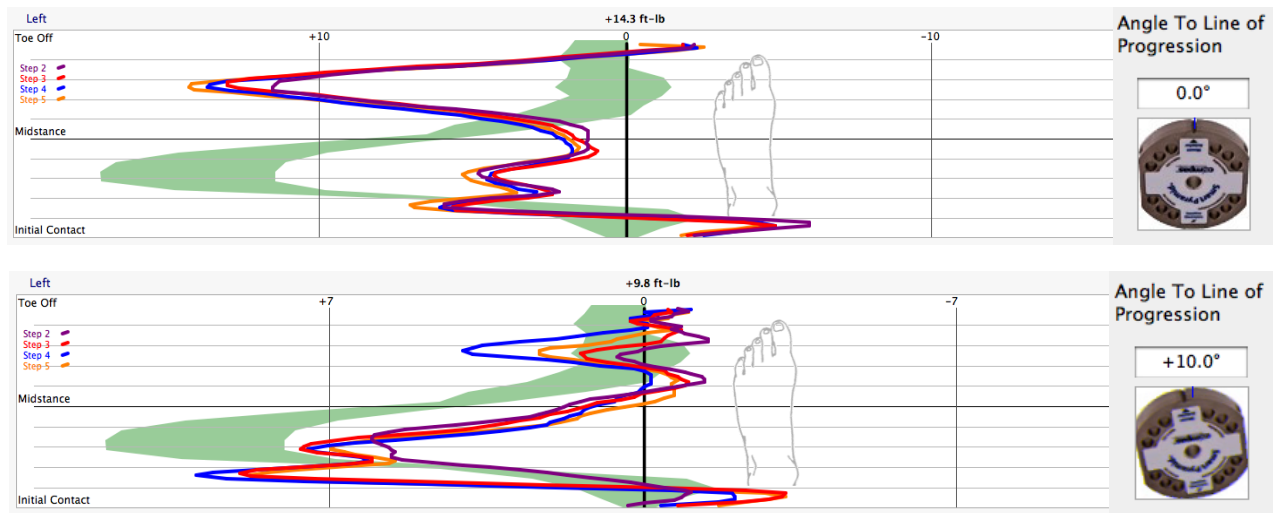
Why an Accurate Angle to Line of Progression Measure is Essential to Accurate Walking Trial Data

As you know, Compas readings arise from measures of torque as well as force. **To accurately display the forces applied to the socket (and thus the patient’s residual limb) as translated from the ground reaction forces generated during walking, we must know precisely where in space the Smart Pyramid is aligned in relation to these forces.**

The Compas output displays the socket torques in a two-axis format in relation to the patient’s motion. To be able to display the torques in only the true anterior-posterior and medial-lateral directions in relation to the patient’s center of gravity through space, you must eliminate any angular offset of the Smart Pyramid’s raw readings. By capturing the angle of the Smart Pyramid relative to the line of progression at midstance and correcting for it in our algorithms, you can display the true torques in the two axes. If the Angle to the Line of Progression measure is entered inaccurately or not at all, you are likely to see misleading information that results in incorrect alignment changes.

With and Without an Accurate Measure

Below are two different medial-lateral Compas graphs. These were captured on the same patient in back-to-back walking trials, with the only difference being the value that was entered for the Angle to the Line of Progression.



In the top graph, no Angle to the Line of Progression value was entered, and the graph displays only the raw torque values in the Smart Pyramid’s true direction and not those related to the patient’s actual movement direction. In the bottom graph, the correct offset was entered—in this case, the Smart Pyramid was rotated outwardly 10 degrees at midstance—and with that data noted in the Compas’ calculations, we see a much more normal medial-lateral force pattern.

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How to Collect and Enter the Angle to Line of Progression Measure

To collect the Angle to Line of Progression value and enter it into the Setup screen, you can either have Compass measure this value itself, (by clicking on the Measure button and following the on screen instructions) or you can observe the angle and enter it by hand. Angle values externally rotated away from the midline are positive and internal rotation will be a negative angle.