LETTER TO THE EDITOR

"Three-Dimensional Movements of the Sacroiliac Joint: A Systematic Review of the Literature and Assessment of Clinical Utility" Goode et al. *J Man Manip Ther* 2008;16:25–38.

Regarding the review of movements of the sacroiliac joint by Goode et al[1], I am compelled to comment. I recall the studies by Smidt and colleagues[2] in which he measured movement in the sacroiliac joints from 22 degrees to 36 degrees in elite athletes, well stretched out, with loaded sacra from relaxed standing to asymmetric pelvis at two point support. His measurements demonstrated a lateral flexion of the sacrum with rotation. This seeming extreme of movement in the sacroiliac joint was not included in the study, yet none of the studies cited measured that specific movement, which occurs with normal gait. It was unfortunate that Smidt's[2] measurements were not included in Goode's[1] study because in my opinion they had a lot more to do with normal function of the sacroiliac joint than the cited studies, which measured little more than nothing. I also recall that when Smidt measured this movement he blocked the trunk so the subject could not rotate, but in so doing he unwittingly blocked further movement of the sacrum on the innominates. It is highly probable that if Smidt had realized this he could have increased the measured motion in the sacroiliac joints considerably. It is unfortunate that none of the cited authors realized the existence and extent of this functional movement or they probably would have included it in their studies.

It is generally agreed that when the sacrum is loaded and the pelvis is symmetrical, movement in the pelvis is practically non-existent. However, when the pelvis moves into asymmetry such as when moving from standing to normal gait, the innominate on the side of loading rotates posteriorly whereas the contra lateral innominate moves anteriorly. With this motion the sacrum is caused to flex laterally toward the side of loading to create an oblique axis and then rotates on that oblique axis to drive counter rotation of the trunk. This counter rotation precedes loading and functions to decrease the forces of deceleration[3,4]. This movement is palpable[4].

To palpate lateral sacral flexion and rotation sit with knees bent and feet flat. Using both hands put the fingertips of each hand on each side of the coccyx. Now retract the right thigh to rotate the right innominate posteriorly and project the left to rotate the left innominate anteriorly as you move the pelvis into asymmetry. You can feel the sacrum as it flexes toward the right. Note how the trunk is caused to rotate toward the right. Now reverse the asymmetry and feel how the sacrum flexes toward the other side. Now holding the pelvis in asymmetry rotate and flex the trunk to the extreme to feel the sacrum move posteriorly as it moves to rotate on the oblique axis[5]. Find more on pelvic dynamics at www.thelowback.com.

Regarding pelvic movement with dysfunction, roentgenograms taken before and after correction of the SIJs demonstrate movement of the PSISs caudad and medially on the sacrum with correction[6].

RICHARD L. DONTIGNY, PT
2025 10th Ave
Havre, MT 59501

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