

Breath and the Sacroiliac Joint

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Motion and visual analysis of the sacroiliac joint can be performed in relation to inhalation, exhalation, and uncontrolled breathing. Testing can be done using two procedures:

1. seated trunk-forward flexion;
2. standing bent-knee raise.

Using seated trunk-forward flexion with normal breathing causes sacral counternutation to occur, whereby the sacral base moves posteriorly and superiorly, while the ilia move anteriorly and superiorly, with the PSISs as the points of reference on the ilia. During forced and held inhalation, the ilia also move anteriorly and superiorly during flexion.

During forced held exhalation, there is no sacroiliac motion during flexion. Exhalation prevents anterior superior ilium motion during forward flexion.

Using the standing bent-knee raise during normal breathing allows posterior inferior (PI) ilium motion with forced held inhalation; the ilium will not rotate posteriorly with a knee raise. It will, however, rotate posteriorly with forced held exhalation during a knee raise.

To summarize:

1. Forced and held inhalation promotes AS ilium motion during trunk-forward flexion, and prevents PI ilium motion with the knee raise.
2. Forced and held exhalation prevents AS ilium motion during trunk flexion, and promotes PI ilium motion with the knee raise.

This may reflect the mechanism involved during heavy lifting, by which a person naturally takes a breath and holds it during the lift. Inhalation may promote increased sacral counternutation, and therefore act to decompress the posterior spinal three-joint complex.

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