

Forward Head Carriage and the Feet: What's the Connection? (Pt. 2)

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Postural Evaluation

Clinical evaluation of standing posture using relatively low-tech tools has been confirmed as valid and reliable by several studies.¹⁴⁻¹⁶ The original device used to evaluate posture was the plumb line, which served as a reference line for the effects of gravity on body alignment. The plumb line remains a useful tool, and there are also software and apps you can employ to quickly evaluate a patient's posture.

A valuable procedure in postural evaluation is the assessment in the frontal and sagittal planes of the balance and alignment of the three major regional masses of the body (cervical, torso, pelvis) and their relationship to their base of support: the feet and legs. This method permits a rapid, yet standardized determination of postural deviation from the optimal alignment, and can be used in prescribing specific corrective exercises.

When assessing cervical postural distortions in the sagittal plane, the most common is identified as anterior translation.¹⁷ Translation is the motion of a rigid body in which a straight line in the body always remains parallel to itself. "For example, if a boat is pushed smoothly in a straight line from position one to position two without pitching or rolling, it moves in pure translation."¹⁸

In anterior translation, the ear is forward of the AC joint and the bite line is level, creating the so-called "dowager's hump."¹⁹ In addition to the forward head, the evaluating clinician will note an increased cervical lordosis, round shoulders, internally rotated humerus and kyphotic posture.

Lack of stability in the pedal foundation can lead to serial distortions and muscular stretching all the way up the spine. With foot pronation and the associated collapse of the anterior transverse arch, the base point of the body's center of gravity shifts forward. This shifting causes a pelvic translation, which in turn produces a thoracic extension.

At this point, the head attempts to maintain its position over the vertical center of gravity, and therefore slides into anterior translation. The body's overall stabilization efficiency is greatly reduced, and it must work harder to maintain a standing posture. Cailliet concluded that for every 1 inch of anterior translation, there is a 10-fold increase in muscular effort on the part of the supporting muscles of the cervical spine. This inefficiency results in a constant firing of these muscles.²⁰

There are literally hundreds of clinical observations suggesting a mutually detectable relationship appears to exist between a cervical anterior translation and a deviated pedal foundation ([pronated feet](#)). In order to provide your patient with optimal balance and stability, it is critical you evaluate and treat both the cervical spine and the feet.

Adjust - Support - Rehab

Care for cervical anterior translation requires adjustments, functional orthotics for support, and the use of an appropriate rehabilitative exercise regimen. Often, both muscle and joint dysfunction require correction,²¹ and appropriate strength should be developed to help minimize the potential for future injury.²²

Cervical spine. For isotonic exercise of the cervical spine, look for home rehab equipment that is versatile and simple-to-use. The patient can be instructed within minutes and then, at home, perform the prescribed exercise of posterior translation.

Thoracic spine. As mentioned by Porterfield, cervical anterior translation can be linked to weakness in the thoracic spine.¹⁴ Many home care systems provide easy-to-use, effective ways to condition and strengthen back muscles affected by injury, illness or postural deficits. In the case of thoracic extension, the appropriate exercise would be thoracic flexion.

Orthotic support. Custom-made orthotics are of special value in cervical anterior translation cases in which foot pronation and arch ligament laxity have been observed. A flexible, custom-made orthotic addresses the excessive pronation and provides support for collapsed structures in the feet.

Additional support. Many patients also benefit from the use of a support for their excessively stressed spinal areas. For prolonged sitting, having an adjustable, supportive chair is key. The height and angle of the seat, arm rests, and seat-back should be adjustable and fitted to the person sitting in it. Cervical [support pillows](#) can help ensure proper neck and shoulder alignment during sleep.

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Editor's Note: [Part 1](#) of this article (August issue) was submitted and appeared in print with Dr. William Austin incorrectly attributed as the author.

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