Dynamic Chiropractic

CLINICAL CORNER

A Posture-Based Strategy for Performance, Balance, Injury Prevention and Longevity

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Good posture is associated with longevity, and affects our ability to breathe properly, balance and move safely while performing daily activities. It is also critical for efficient athletic performance and is a strong predictor of injury resistance. Let's just consider everyone an athlete; some keep score, and some just want to keep being active and independent. Creating a plan to enhance and preserve posture is simple and beneficial to everyone.

Do Patients Understand Posture?

According to the Merriam-Webster Dictionary, posture is *the position or bearing of the body whether characteristic or assumed for a special purpose.* In the chiropractic community, good posture commonly refers to the three natural curves present in a healthy spine, functioning in a way that keeps the spine vertical from the front or back, shoulders and hips level, and hips, knees and ankles aligning in a vertical orientation. It also includes maintaining a lateral vertical line from the ear, through the lateral shoulder at the acromial clavicular joint, greater trochanter, and lateral malleolus (neutral spine).

Posture is the result of repetition. Repetitious exercise, inactivity, or exposure to emotional or physical stress creates patterns that become hardwired into our nervous system. It is the result of neural networks that are created from muscular activity; what is commonly called muscle memory. Poor posture has been associated with future dependence in activities of daily living among older adults.[1]

Posture and Performance

According to Webster's Dictionary, performance is *the action or process of carrying out or accomplishing an action, task, or function*. Athletic performance, whether you are keeping score or not, requires a combination of coordinated strength, agility and flexibility driven by the skill that results from repetitive, intentional activity.

Performance is present in all professions and activities. The effects of repetitive activity have identical neurological responses whether you are working in a warehouse or playing wide receiver in a football game. Inefficient posture, whether acquired from injury or activity, characteristically involves the recruitment of neighboring muscles to assist with movement. This process diminishes fine motor control, which is necessary for efficient physical performance.

A person who ambulates with a limp or an obvious kyphotic thoracic spine is displaying the result of recruitment and the inefficient musculoskeletal response. This requires an increased energy output and increases the risk of a trip and fall due to changes in the center of gravity and muscular incoordination.

Posture and Balance

Balance is the result of clean sensory input being received in the cortico-motor regions of the brain, resulting in an efficient motor response being sent back to the body. Much of this sensory input comes from proprioceptive stimulation in the joints of the body, not the least of which exist in the feet. These reflexes engage fine motor control in the upper extremities, lower extremities and trunk.

Much of our postural control and functional movement efficiency emanates from the feet. Identifying differences in foot function can now be easily observed with recent advances in non-invasive imaging systems and can be incorporated into the patient examination process. The use of three-arch custom flexible orthotics in the early stages of treatment enhances the chiropractic care and helps reduce potential relapses.

Posture and Injury Prevention

Approximately 7.9 million athletes participated in high-school-sanctioned sports during the 2018-2019 school year, the third highest annual number of participants reported since the first National Federation of State High School Associations survey was implemented in 1971.[2]

There were more than 1.4 million high-school sports-related injuries per year, an average of 153 injuries every hour, associated with the sports included in this study.[3] In addition to the monetary toll an injury may take, which can be upward of $700 per injury in direct medical costs, athletes can be subject to long-term physical and psychological sequelae.[4] The consequences of injury, when combined with the frequency of injury and rising sport participation, represent a large burden on both student athletes' health and the health care system overall.

The results of these injuries can linger long into adulthood. It has been estimated that more than 7 million Americans are living with a hip or knee replacement, and more than 1 million knee or hip replacement procedures are performed each year.[5] With the aging baby boomer generation, knee and hip replacement procedures are expected to become the most common elective surgery procedure in the coming decades.

A Strategy for Lifetime Posture to Maximize Patient Longevity

Several years ago, I had two 83-year-old patients with very different postural presentations. [See images] One had severe anterior head carriage with an obvious thoracic kyphosis. The other had very strong posture with the ear, shoulder, hip, and lateral ankle in perfect alignment. I show these images to patients today and ask them, "What's *your* plan to make it to age 83?"

Everyone I have asked wants to have strong posture in their golden years, but few have any idea how to accomplish it. There are many things in life that we don't have any control over, but there are also many things we *can* control. Here is a non-inclusive list of some important things to consider.

Does your patient need orthotics to create a balanced pedal foundation? If your patient presents with an asymmetrical foot scan or navicular drop test, custom stabilizing orthotics are essential for maximum proprioceptive input for efficient musculoskeletal output. This is foundational for efficient postural tone and functional movement.

High-quality shoes that fit properly and are appropriate for the patient's activity level. This topic may be more applicable to female patients due to the large choice of "cute," inexpensive shoes that do not adequately support the feet and body. I know this is a sensitive topic, but if the goal is to make it to 83 with good posture and healthy knees and hips, we might have to sacrifice fashion for function.

Exercise that counteracts sitting and using personal electronic devices. Postural exercises that engage the extensor muscles of the neck, upper extremities and lower extremities are simple to learn and can be done with or without any exercise equipment. Getting in the habit of erasing the effect of sitting for long periods of work or driving can re-engage healthy posture.

Regular adjustments and ongoing chiropractic care. As every DC knows, this is good for spinal and extremity joint health, and helps reset the nervous system to repair and recover from accumulated stress that can also weaken posture.

The effectiveness of your strategy for strong posture and injury prevention is dependent on how early in life you begin. It's never too late to start to improve posture, balance and functional movement, but the earlier you begin, the healthier you will arrive at your 83rd birthday.

References

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