EDITORIAL

Sagittal plane - Non-structural misalignments of body posture

Balraj K

EDITORIAL NOTE

The biological sagittal spinal curvature signifies a classic feature of good body posture in the sagittal plane. The lumbar spine and the cervical are curved anteriorly (lordosis), despite the fact that the thoracic segment is curved posteriorly (kyphosis). The pelvis is inclined anteriorly, and the lower limbs' junctions remain in a neutral position. Though, there are many deviations from the optimum body alignment.

The utmost common types of non-structural misalignments of body posture in the sagittal plane are as follows: (1) Lordotic, (2) Kyphotic, (3) Flat-back, and (4) Sway-back postures. Each one may affect both the skeletal and the muscular system leading to the functional disruption and an increased strain of the supporting structures.

Generally, the disturbances contained within the muscles are analyzed in respect to their lengthening or shortening. But, according to suggestions presented in the literature, when the muscles in control for retaining good body posture (the so-called stabilizers) are not being enthused to resist against gravity for a prolonged period of time, e.g., during prolonged sitting, their steadying function is disturbed by the hypoactivity reaction resulting in muscular weakness. The deficit of the locomotor system immovability triggers a compensatory mechanism - the stabilizing function is leaving behind by the so-called mobilizing muscles. Though, as a side effect, such compensation leads to the increased activity of mobilizers (hyperactivity) and decreased flexibility, which may lastly lead to the pathological chain of reaction within the musculoskeletal system.

Lordotic posture: The lordotic posture characterizes a defective posture that differs from the perfect one by the following: (1) increased pelvic anteversion and (2) increased lumbar lordosis (anterior tilt). Increased anterior tilt of the pelvis leads to enlarged flexion of hip joints. The knees can be in hyperextension and, due to this knee position, the plantar flexion of the feet happens.

Kyphotic posture: The kyphotic posture characterizes a defective posture that differs from the perfect one by the following: (1) protraction of shoulders and scapulae, (2) increased thoracic kyphosis, (3) head protraction, (4) increased upper cervical lordosis, and (5) flattened or reversed lower cervical lordosis.

Flat-back posture: The flat-back posture characterizes a defective posture that differs from the perfect one by the following: (1) flattened lower part of thoracic kyphosis and (2) flattened lumbar lordosis. Additionally, amplified kyphosis in the upper part of the thoracic region along with kyphotisation of the cervico-thoracic junction may be present. Pelvis deposits in a neutral position or in a decreased anterior tilt.

Sway-back posture: The sway-back posture characterizes a defective posture that differs from the perfect one by the following: (1) apparently shorter lumbar lordosis, (2) normal or slightly decreased anterior pelvic tilt, (3) anterior pelvic shift, (4) thoracic kyphosis extended to the upper part of the lumbar spine (longer thoracic kyphosis is observed).

Department of Biotechnology, Osmania University, Hyderabad, Telangana, India.

Correspondence: Balraj Kandukuri, Department of Biotechnology, Osmania University, Hyderabad, Telangana, India, E-mail: balraj_k@gmail.com

Received: May 18, 2021, Accepted: May 23, 2021, Published: May 28, 2021