Deed E Harrison, J Neurol Clin Neurosci
ISSN:2752-809X | Volume 06

Received date: 27-04-2022 | Accepted date: 02-05-2022 | Published date: 26- 07-2022

Sagittal plane displacements of the cervico-thoracic region and their relationship to pain, disability, athletic performance and neurophysiological measures: Implications towards patients with movement disorders

Deed E Harrison
Chiropractic BioPhysics®, United States

Background: High quality case control and randomized clinical trials (RCTs) evaluating sagittal plane alignment rehabilitation methods and their correlation to improved disability, performance, and neurophysiological measures are lacking. Given the significant posture abnormalities in patients diagnosed with movement disorders (Parkinson's, Tourette's, etc.), it is prudent to conduct and review such studies as they may provide insights and innovations into non-pharmacological treatment for these and other patient populations.

Methods: Narrative literature review and discussion of our teams' recent publications. We present three case-control investigations looking at the relationship between forward head posture (FHP) magnitude relative to: 1) sensorimotor control variables and autonomic nervous system (ANS) function; 2) sensorimotor integration variables; and 3) athletic performance measurements. Additionally, we present 5 RCTs on the effect of sagittal spine correction on a variety of outcomes including: pain, disability, sensorimotor control, and neurophysiology.

Results: The case control investigations identified statistically significant differences between the FHP groups and control groups for sensorimotor measured variables ($p < 0.001$); for ANS measures ($p < 0.001$); for athletic performance measurements ($p < 0.005$), and for sensorimotor integration measurements ($p < 0.005$). The RCTs with long-term follow-up identified that patients receiving sagittal spine correction towards normal alignment improved statistically and clinically more in the following outcomes: pain and disability; sensorimotor control; ANS; and somatosensory evoked potentials and sensorimotor integration; all variables ($p < 0.005$).

Conclusions: Participants with FHP, abnormal thoracic and cervical sagittal curvature exhibited abnormal sensorimotor control, ANS dysfunction and athletic performance compared to those with normal posture alignment. Correction of sagittal displacements results in improved pain, disability, function, and neurophysiology. The implications of these findings relative to specific patients with Parkinson's disease and Tourette's syndrome are discussed.

Recent publications:

Ibrahim M Moustafa, Aliaa A Diab, Fatma Hegazy, Deed E Harrison(2021).Demonstration of central conduction time and neuroplastic changes after cervical lordosis rehabilitation in asymptomatic subjects: a randomized, placebo-controlled trial Nature communications doi: 10.1038/s41598-021-94548-z.

Biography

Deed E. Harrison, D.C., graduated from Life-West Chiropractic College in 1996. He has developed and researched original spinal rehabilitation procedures and has lectured at nearly 1000 educational conferences around the world. He has authored approximately 200 peer-reviewed spine related publications, 7 spine textbooks, and numerous conference proceedings. He is a highly respected chiropractic researcher and authority in today's profession. He is also a manuscript reviewer for approximately 20-different peer-reviewed spine and rehabilitative journals. Additionally, Harrison is a former member of the International Society for the Study of the Lumbar Spine (ISSLS), a former International Chiropractors Association's (ICA) Nevada State Assembly Representative member, and is the Chair of the PCCRP Chiropractic Radiography Guidelines. He formerly held a position in the Chiropractic Physicians Board of Nevada. Currently, Harrison is the President / CEO of Chiropractic BioPhysics® (CBP®) Technique & Seminars and is the President of CBP Non-Profit, Inc. – a spinal research foundation.

drdeedharrison@gmail.com