

# 6<sup>th</sup> World Congress on Spine and Spinal Disorders

December 06-07, 2021 | Dubai, UAE

## Influence of the Chêneau-Brace Therapy on Thoracic and Lumbar Spine and its interdependency with Cervical Spine alignment in patients with Adolescent Idiopathic Scoliosis (AIS)

Aly El Zeneiny<sup>1</sup>, Wojciech Pepke<sup>1</sup>, Haidara Almansour<sup>2</sup>, Thomas Bruckner<sup>3</sup>, Stefan Hemmer<sup>1</sup> and Michael Akbar<sup>4</sup>

<sup>1</sup>Heidelberg University Hospital, Germany

<sup>2</sup>Eberhard-Karls University, Germany

<sup>3</sup>University of Heidelberg, Germany

<sup>4</sup>Meoclinic, Germany

For the treatment of Adolescent Idiopathic Scoliosis (AIS) the Chêneau-Brace has proven to be an effective therapy. Information regarding the interdependent changes of the sagittal profile including the Cervical Spine is still scarce. The focus of this study was to evaluate in-brace changes of the Thoracic and Lumbar Spine and their influence on the pelvis and the Cervical Spine and apical vertebral rotation has been noted. Included were ninety-three patients with Adolescent Idiopathic Scoliosis who were undergoing Chêneau-Bracing. Patients were stratified by lumbar, thoracic, and global spine alignment into normolordotic vs. hyperlordotic or normokyphotic vs. hypokyphotic or anteriorly aligned vs. posteriorly aligned groups. In all groups, the coronal Cobb angle showed a significant decrease implying a good correction during in-brace therapy. In-brace treatment led to a significant flattening of Lumbar Lordosis (LL) in all stratified groups in the sagittal profile. Thoracic Kyphosis (TK) was significantly flattened in the normokyphotic group, but no TK changes were noticed in the hypokyphotic group. During the in-brace therapy, Pelvic Tilt (PT) stayed unchanged. The Chêneau-Brace had no influence on the upper Cervical Spine but showed marginal changes in the Lower Cervical Spine. In primary and secondary curves, the apical vertebral axis was unchanged during the first radiological follow-up. Outcomes from this study contribute to a better understanding of basic spine behavior in the sagittal and axial plane in the context of bracing.

**Keywords:** Adolescent Idiopathic Scoliosis, Chêneau, Brace, Cobb Angle, Sagittal Alignment, Cervical Spine, Axial Rotation.

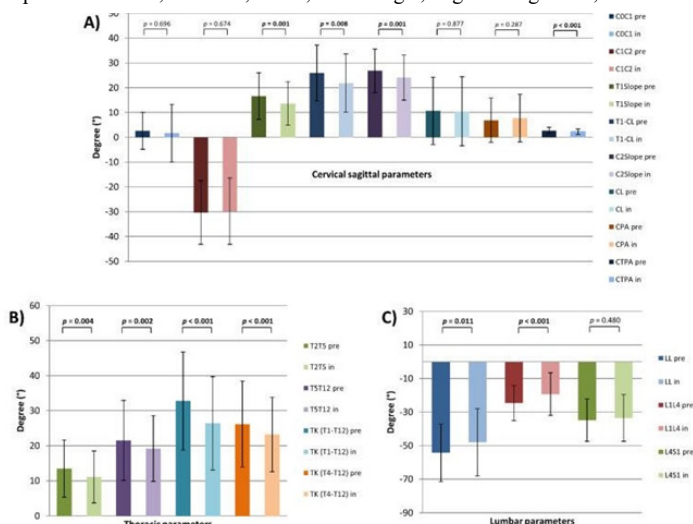


Figure 1. Sagittal plane parameters of cervical (A), thoracic (B) and lumbar (C) spine for all patients (pre- and in-brace);

p = statistical significance, p < 0.05

## 6<sup>th</sup> World Congress on Spine and Spinal Disorders

December 06-07, 2021 | Dubai, UAE

### Biography

Aly El Zeneiny has been involved in scientific research at the University Clinic for Orthopedic Surgery in Heidelberg since 2016. He knew early on during his years in medical school that the field of Orthopedic Surgery would be his passion. This interest in Spinal Surgery runs like a central theme throughout his academic career. His research in the area of treatment in Adolescent Idiopathic Scoliosis (AIS) was fueled by his passion for improving health and well-being in the area of his expertise. Results from this study contribute to a deeper understanding of initial spine behavior in the sagittal and axial plane in the context of bracing.

e: elzeneiny@gmail.com