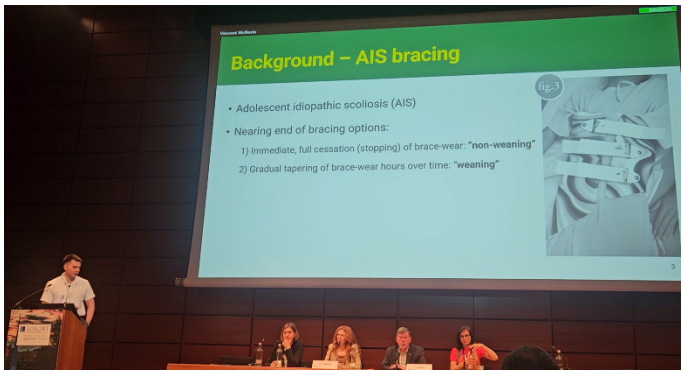
Canadian MSK Rehab Research Network

**Effects of brace weaning compared to no weaning on curve progression in adolescents with idiopathic scoliosis: a systematic review and meta-analysis**




**Research Question:**

For youth with adolescent idiopathic scoliosis, how does the sideways spine curve differ when tapering bracewear near the end of treatment compared to stopping all-at-once?

**What is the problem?**

Adolescent idiopathic scoliosis (AIS) is a sideways curve and rotation of the spine that affects 2-2.5% of youth worldwide. Rigid brace treatment braces the youth's spine in a straightened position while they grow to avoid potential health impacts as an adult. Near the end of treatment, bracing can either be stopped all-at-once or can be tapered (weaned) by slowly reducing the wear hours over several months. It is thought that tapering may allow the muscles to adjust without the brace, but it is unclear if weaning is advantageous.

**How did you study the problem?**

We searched health science literature for rigid bracing studies for youth with AIS and compared weaning studies to studies which used all-at-once discontinuation (non-weaning) using meta-analyses.

**What did you find?**

Weaning studies were associated with a 2.3° to 3.9° smaller curve during the bracing period and at <2 and >2 year follow-ups compared to non-weaning studies. During the weaning phase of treatment, there was a slight 3.23° increase in the curve angle of the spine.

**How can this research be used?**

Clinicians can consider these effects on the curve during bracing when planning weaning and/or when modifying wear hours when prescribing bracewear for youth with AIS.

**Cautions**

Most bracing studies tended to be associated with weaning or non-weaning rather than studies that showed a high confidence in a weaning or non-weaning cause-and-effect. Studies often didn't have the required x-ray data to be included, and weaning timelines also often vary between studies, both which limit the accuracy of analyses.

**Reference** – Paper in Progress

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