

## **P57 Pain in adolescent idiopathic scoliosis: Prevalence and associations with physical function and well-being**

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**Objective:** Pain, not a primary determinant of treatment for individuals with Adolescent Idiopathic Scoliosis (AIS), can potentially have negative consequences on one's quality of life. PROMIS® Pain measures (PROMIS Pain-Intensity and Interference), are increasingly used in care of patients with AIS, yet conflicting evidence and understanding of pain in this population limits clinical utility of these scores. This study examined four pain PROs, pain prevalence and relationships between pain, physical function, and psychosocial well-being in patients with AIS.

**Methods:** A convenience cohort of 95 patients (age $14.1\pm 1.7$  years; primary curve of  $33\pm 13^\circ$ ) with AIS completed patient reported outcomes (PROs) that included four pain-domains, physical function and psychosocial domains (SRS-22r, PODCI, PROMIS). Pain prevalence was defined as percentage of participants exceeding one and two SD of normative values. Correlations assessed associations between pain-PRO and other PRO domain scores. Differences in PRO scores between High Pain (HP) and Remaining Cohort (RC) groups, established using interquartile thresholds, were assessed via ANOVA and Cohen's d.

**Results:** Descriptive data for pain-PROs: PROMIS Pain Intensity (Entire cohort (EC) $2.7\pm 2.4$ , HP  $4.6\pm 2.1$ ; RC  $1.0\pm 0.9$ ; Q4 > 4.0); Interference (EC:  $45.0\pm 8.4$ ; HP:  $50.4\pm 8.3$ , RC:  $40.4\pm 5.1$ ; Q4 > 50.5); SRS-22r Pain (EC:  $4.1\pm 0.7$ ; HP:  $3.6\pm 0.6$ ; RC:  $4.6\pm 0.3$ ; Q1 < 3.8); PODCI Comfort/Pain (EC:  $76.0\pm 21.9$ ; HP:  $63.3\pm 21.4$ ; RC:  $88.8\pm 11.7$ ; Q1 < 62.8). Pain prevalence ranged from 1% to 37% depending on pain-related PRO. PROMIS pain measures moderately correlated with physical function and mental health scores, with PROMIS Interference demonstrating stronger correlations. Despite strong correlations among 4-pain PROs, up to 48% of HP patients can be missed if only one measure is used. For example, 63% of patients in Pain-Intensity HP were also in Interference HP, while 52% of HP Pain-Interference patients were also in HP-Intensity. HP groups scored worse on physical function and psychosocial PROs than RC.

**Conclusions:** Most patients did not report pain, yet a subset of patients reported experiencing pain that is problematic. Large variation in pain prevalence rates depended on the selected pain-PRO and threshold, highlighting the importance of clearly reporting the criteria used to define pain in prevalence assessments. HP threshold values can be used to identify patients with HP so that interventions to reduce pain can be incorporated into their treatment plan.