# U.S. Preventive Services Task Force
## Literature Surveillance Report

**Title:** Screening for Adolescent Idiopathic Scoliosis
**Literature surveillance date:** January 2025

**Recommendation Summary:** In 2018, the Task Force concluded that the evidence is insufficient to assess the balance of benefits and harms of screening for adolescent idiopathic scoliosis (AIS) in children and adolescents aged 10 to 18 years (**Grade: I statement**). This recommendation does not apply to children and adolescents presenting for evaluation of back pain, breathing difficulties, abnormal radiography findings, or obvious deformation in spinal curvature.

**Research Gaps from Previous Task Force Review:** The 2018 recommendation statement was based on an evidence review with a search through October 2016. The Task Force identified important gaps related to comparison of screened and non-screened populations and different screening settings, personnel, and procedures and recommends research on the following:

- The effect of screening on health outcomes;
- The association between reduction in spinal curvature in adolescence and long-term health outcomes in adulthood;
- The effects of treatment with exercise or surgery;
- The association between severity of curvature at skeletal maturity and adult health outcomes; and
- The harms of screening and treatment.

**Summary of New Evidence:** Literature scans in the MEDLINE and Embase databases and the Cochrane Library were limited to English language, core clinical and specialty journals, 2016 to present.

Primary studies

One new study from Italy reports on an annual school screening program evaluating 8,995 children aged 9 – 14 years.[1] A three-step screening method was employed, including 1) clinical examination by the school physician and two specialists; 2) evaluation of cases with a hump >5mm by an orthopedic specialist and followed every six months either clinically or by radiographic examination; and 3) classification of the scoliosis and treatment. Patients were followed for three years. Reported outcomes include sensitivity and specificity and diagnosis of scoliosis and disease severity in the years following the screening program. No new studies address harms associated with screening for AIS.

Eleven new publications evaluate the effectiveness or harms of treatment**.** Eight of these evaluate physiotherapy interventions.[2-9] Five of these are randomized controlled trials (RCTs),[3-6, 8] one is a nonrandomized controlled trial,[2] and two are cohort studies with control groups.[7, 9] Study locations include the US,[2] Canada,[3] Sweden,[6] Italy,[7] South Korea,[9] and Turkey.[4, 5, 8] Sample sizes range from 20 to 293, and followup ranges from eight weeks to two years. Specific exercises include Schroth or other scoliosis-specific exercises,[3, 6-8] core stabilization exercises,[4, 9] isometric yoga-like exercises,[2] and basic body awareness therapy.[5] Reported outcomes include severity of spinal curvature,[2, 3, 5-9] quality of life,[5] musculoskeletal stability,[2] and other health outcomes, such as pulmonary function, respiratory muscle strength, peripheral muscle strength, functional capacity, and perceived appearance.[4] Two of these studies also report harms of physiotherapy (e.g., pain, emotional problems, and difficulty sleeping).[4, 6]

Three new publications evaluate bracing interventions, including one of the RCTs that also evaluates physiotherapy[6] and two cohort studies with control groups.[10, 11] Study locations include the US,[11] Sweden,[6] and Singapore,[10] and sample sizes range from 46 to 730. The Swedish RCT specified that

treatment involved nighttime wearing of a Boston brace,[6] while the two cohort studies did not provide details on their bracing protocol.[10, 11] Reported outcomes at two-year followup[6, 11] or an unspecified interval[10] include severity of spinal curvature,[6] quality of life,[10] and harms of bracing (e.g., trunk pressure, skin problems, back pain, anxiety, depression, and self-esteem).[6, 11]

One new publication evaluates surgical interventions.[12] This cohort study, which takes place at multiple institutions in the US and Canada, compares outcomes among 123 AIS patients with an average Cobb angle of 45 degrees who were treated with surgery or observation. At two-year followup, the study reports quality of life and harms of surgery, including surgical complications and neurological issues.

No new studies evaluate the association between the severity of spinal curvature in adolescence and adult health outcomes.

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