Screening for Idiopathic Scoliosis in Adolescents

Recommendation Statement

U.S. Preventive Services Task Force

This statement summarizes the U.S. Preventive Services Task Force (USPSTF) recommendations on screening for idiopathic scoliosis in adolescents and the supporting scientific evidence, and updates the 1996 recommendations contained in the *Guide to Clinical Preventive Services,* second edition.[1] In 1996, the USPSTF found insufficient evidence to recommend for or against routine screening of asymptomatic adolescents for idiopathic scoliosis (I recommendation).[1] Since then, the USPSTF criteria to rate the strength of the evidence have changed.[2] Therefore, this recommendation statement has been updated and revised based on the current USPSTF methodology and rating of the strength of the evidence. Explanations of the current Task Force ratings and of the strength of overall evidence are given in Appendix A and Appendix B, respectively.

The complete information on which this statement is based, including evidence tables and references, is available in the brief update[3] on this topic on the USPSTF Web site (www.preventiveservices.ahrq.gov). The recommendation statement and brief update are also available in print from the Agency for Healthcare Research and Quality Publications Clearinghouse (call 1-800-358-9295 or e-mail ahrqpubs@ahrq.gov). The recommendation is also posted on the Web site of the National Guideline Clearinghouse™ (http://www.guideline.gov).

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Summary of Recommendation

The U.S. Preventive Services Task Force (USPSTF) recommends against the routine screening of asymptomatic adolescents for idiopathic scoliosis. **D recommendation.**

The USPSTF did not find good evidence that screening asymptomatic adolescents detects idiopathic scoliosis at an earlier stage than detection without screening. The accuracy of the most common screening test—the forward bending test with or without a scoliometer—in identifying adolescents with idiopathic scoliosis is variable, and there is evidence of poor follow-up of adolescents with idiopathic scoliosis who are identified in community screening programs.

The USPSTF found fair evidence that treatment of idiopathic scoliosis during adolescence leads to health benefits (decreased pain and disability) in only a small proportion of people. Most cases detected through screening will not progress to a clinically significant form of scoliosis. Scoliosis needing aggressive treatment, such as surgery, is likely to be detected without screening.

The USPSTF found fair evidence that treatment of adolescents with idiopathic scoliosis detected through screening leads to moderate harms, including unnecessary brace wear and unnecessary referral for specialty care. As a result, the USPSTF concluded that the harms of screening adolescents for idiopathic scoliosis exceed the potential benefits.

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Clinical Considerations

- Screening adolescents for idiopathic scoliosis is usually done by visual inspection of the spine to look for asymmetry of the shoulders, scapulae, and hips. A scoliometer can be used to measure the curve. If idiopathic scoliosis is suspected, radiography can be used to confirm the diagnosis and to quantify the degree of curvature.
- The health outcomes of adolescents with idiopathic scoliosis differ from those of adolescents with secondary scoliosis (ie, congenital, neuromuscular, or early onset idiopathic scoliosis). Idiopathic scoliosis with onset in adolescence may have a milder clinical course.[4]
- Conservative interventions to treat curves detected through screening include spinal orthoses (braces) and exercise therapy, but they may not significantly improve back pain or the quality of life for adolescents diagnosed with idiopathic scoliosis.
- The potential harms of screening and treating adolescents for idiopathic scoliosis include unnecessary follow-up visits and evaluations due to false positive test results and psychological adverse effects, especially related to brace wear. Although routine screening of adolescents for idiopathic scoliosis is not recommended, clinicians should be prepared to evaluate idiopathic scoliosis when it is discovered incidentally or when the adolescent or parent expresses concern about scoliosis.

Cost and Research Considerations

- Although the USPSTF did not consider costs in making its recommendation and did not find high-quality studies of the cost-effectiveness of screening, the USPSTF concludes that the costs of a screening program would include the time of primary care clinicians, specialty evaluation, treatment with braces, and follow-up costs.
- Careful surveillance should accompany screening program activities to evaluate the long-term benefits and harms of treating adolescents for idiopathic scoliosis.

References

1. U.S. Preventive Services Task Force. *Guide to Clinical Preventive Services,* 2nd ed. Washington, DC: Office of Disease Prevention and Health Promotion; 1996.
2. Harris RP, Helfand M, Woolf SH, Lohr KN, Mulrow CD, Teutsch SM, Atkins D. Methods Work Group; Third U.S. Preventive Services Task Force. Current methods of the U.S. Preventive Services Task Force: a review of the process. *Am J Prev Med.* 2001;20(3S):21–35.
3. Screening for idiopathic scoliosis in adolescents: update of the evidence for the U.S. Preventive Services Task Force. Agency for Healthcare Research and Quality. 2004. Available at http://www.preventiveservices.ahrq.gov.
4. Weinstein SL, Dolan LA, Spratt KF, Peterson KK, Spoonamore MJ, Ponseti IV. Health and function of patients with untreated idiopathic scoliosis: a 50-year natural history study. *JAMA.* 2003;289(5):559–567.

Appendix A
U.S. Preventive Services Task Force—Recommendations and Ratings

The Task Force grades its recommendations according to one of 5 classifications (A, B, C, D, I) reflecting the strength of evidence and magnitude of net benefit (benefits minus harms):

A. The USPSTF strongly recommends that clinicians provide [the service] to eligible patients. *The USPSTF found good evidence that [the service] improves important health outcomes and concludes that benefits substantially outweigh harms.*

B. The USPSTF recommends that clinicians provide [the service] to eligible patients. *The USPSTF found at least fair evidence that [the service] improves important health outcomes and concludes that benefits outweigh harms.*

C. The USPSTF makes no recommendation for or against routine provision of [the service]. *The USPSTF found at least fair evidence that [the service] can improve health outcomes but concludes that the balance of benefits and harms is too close to justify a general recommendation.*

D. The USPSTF recommends against routinely providing [the service] to asymptomatic patients. *The USPSTF found at least fair evidence that [the service] is ineffective or that harms outweigh benefits.*

I. The USPSTF concludes that the evidence is insufficient to recommend for or against routinely providing [the service]. *Evidence that [the service] is effective is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.*

Appendix B
U.S. Preventive Services Task Force—Strength of Overall Evidence

The USPSTF grades the quality of the overall evidence for a service on a 3-point scale (good, fair, poor):

Good: Evidence includes consistent results from well-designed, well-conducted studies in representative populations that directly assess effects on health outcomes.

Fair: Evidence is sufficient to determine effects on health outcomes, but the strength of the evidence is limited by the number, quality, or consistency of the individual studies, generalizability to routine practice, or indirect nature of the evidence on health outcomes.

Poor: Evidence is insufficient to assess the effects on health outcomes because of limited number or power of studies, important flaws in their design or conduct, gaps in the chain of evidence, or lack of information on important health outcomes.

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