

Screening for Autism Spectrum Disorder in Young Children: Recommendation Statement

As published by the U.S. Preventive Services Task Force.

This summary is one in a series excerpted from the Recommendation Statements released by the USPSTF. These statements address preventive health services for use in primary care clinical settings, including screening tests, counseling, and preventive medications.

The complete version of this statement, including supporting scientific evidence, evidence tables, grading system, members of the USPSTF at the time this recommendation was finalized, and references, is available on the USPSTF website at <http://www.uspreventiveservicestaskforce.org/>.

This series is coordinated by Sumi Sexton, MD, Associate Deputy Editor.

A collection of USPSTF recommendation statements published in *AFP* is available at <http://www.aafp.org/afp/uspstf>.

Summary of Recommendation and Evidence

The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for autism spectrum disorder (ASD) in young children for whom no concerns of ASD have been raised by their parents or a clinician (*Table 1*). **I statement.**

See the Clinical Considerations for suggestions for practice regarding the I statement.

Rationale

IMPORTANCE

ASD is a developmental disorder characterized by persistent and significant impairments in social interaction and communication and restrictive and repetitive behaviors and activities, when these symptoms cannot be accounted for by another condition. In 2010, the prevalence of ASD in the United States was estimated at 14.7 cases per 1,000 children, or 1 in 68 children, with substantial variability in estimates by region, sex, and race/ethnicity.¹

DETECTION

The USPSTF found adequate evidence that currently available screening tests can detect ASD among children aged 18 to 30 months.

BENEFITS OF EARLY DETECTION AND INTERVENTION OR TREATMENT

The USPSTF found inadequate direct evidence on the benefits of screening for ASD in toddlers and preschool-age children for whom no concerns of ASD have been raised by family members, other caregivers, or health care professionals. There are no studies that focus on the clinical outcomes of children identified with ASD through screening. Although there are studies suggesting treatment benefit in older children identified

through family, clinician, or teacher concerns, the USPSTF found inadequate evidence on the efficacy of treatment of cases of ASD detected through screening or among very young children. Treatment studies were generally very small, few were randomized trials, most included children who were older than would be identified through screening, and all were in clinically referred rather than screen-detected patients.

HARMS OF EARLY DETECTION AND INTERVENTION OR TREATMENT

The USPSTF found that the harms of screening for ASD and subsequent interventions are likely to be small based on evidence about the prevalence, accuracy of screening, and likelihood of minimal harms from behavioral interventions.

USPSTF ASSESSMENT

The USPSTF concludes that there is insufficient evidence to assess the balance of benefits and harms of screening for ASD in children aged 18 to 30 months for whom no concerns of ASD have been raised. Evidence is lacking, of poor quality, or conflicting, and the balance of benefits and harms cannot be determined.

Clinical Considerations

PATIENT POPULATION UNDER CONSIDERATION

This recommendation applies to children who have not been diagnosed with ASD or developmental delay and for whom no concerns of ASD have been raised by parents, other caregivers, or health care professionals.

SCREENING TESTS

A number of tests are available for screening for ASD in children younger than 30 months. The most commonly studied tool is the Modified Checklist for Autism in

Table 1. Screening for Autism Spectrum Disorder in Young Children: Clinical Summary of the USPSTF Recommendation

Population	Children aged 18 to 30 months for whom no concerns of ASD have been raised by their parents or a clinician
Recommendation	No recommendation. Grade: I (insufficient evidence)
Risk assessment	Although a number of potential risk factors for ASD have been identified, there is insufficient evidence to determine if certain risk factors modify the performance characteristics of ASD screening tests, such as the age at which screening is performed or other characteristics of the child or family.
Screening tests	The most commonly studied tool is the Modified Checklist for Autism in Toddlers (M-CHAT) and its subsequent revisions. A positive finding should lead to a follow-up interview, which, if positive, should lead to a full diagnostic workup for ASD.
Treatment and interventions	Treatments for ASD include behavioral, medical, educational, speech/language, and occupational therapy and complementary and alternative medicine approaches. Treatments for young children are primarily behavioral interventions, particularly early intensive behavioral and developmental interventions.
Balance of benefits and harms	The USPSTF concludes that there is insufficient evidence to assess the balance of benefits and harms of screening for ASD in young children for whom no concerns of ASD have been raised.
Other relevant USPSTF recommendations	The USPSTF has made a recommendation on screening for speech and language delays and disorders among children 5 years or younger. This recommendation is available on the USPSTF website (http://www.uspreventiveservicestaskforce.org).

NOTE: For a summary of the evidence systematically reviewed in making this recommendation, the full recommendation statement, and supporting documents, go to <http://www.uspreventiveservicestaskforce.org>.

ASD = autism spectrum disorder; USPSTF = U.S. Preventive Services Task Force.

Toddlers (M-CHAT) and its subsequent revisions (Modified Checklist for Autism in Toddlers With Follow-Up [M-CHAT-F] and Modified Checklist for Autism in Toddlers-Revised, With Follow-Up [M-CHAT-R/F]). The M-CHAT-R/F is a parent-rated scale, and a positive finding leads to a follow-up interview. If the follow-up interview is positive, a full diagnostic workup for ASD is indicated. The screening process assesses communication skills, joint attention, repetitive movement, and pretend play.

TREATMENTS AND INTERVENTIONS

Treatments for ASD include behavioral, medical, educational, speech/language, and occupational therapy and complementary and alternative medicine approaches. Treatments for young children in the target age group for routine screening for ASD are primarily behavioral interventions, particularly early intensive behavioral and developmental interventions, which may include approaches incorporating applied behavior analysis principles, parent training components, and play- or interaction-based interventions. Among the behavioral interventions, those

based on applied behavior analysis have the highest-quality data supporting their effects on cognitive and language outcomes. These interventions can be delivered in a home or school setting and are generally time-intensive, with some programs requiring up to 40 hours a week.²

SUGGESTIONS FOR PRACTICE REGARDING THE I STATEMENT

Potential Preventable Burden. Autism spectrum disorder can cause significant social, communication, and behavioral challenges for affected children and place substantial strain on family members and other caregivers. Treatment and maturation may reduce the effects of the core symptoms of ASD for some children, but others may experience long-term effects on education, employment, and ability to live independently.² It is important that clinicians listen carefully to parents when concerns are raised by the parents or during an examination and make prompt use of validated tools to assess the need for further diagnostic testing and services. Disparities have been observed in the frequency and age at which ASD is diagnosed among ►

children by race/ethnicity, socioeconomic status, and language of origin, creating concern that certain groups of children with ASD may be systematically underdiagnosed.³ It is important to note that an "I" statement is not a recommendation for or against screening. In the absence of evidence about the balance of benefits and harms, clinicians should use their clinical judgment to decide if screening in children without overt signs and symptoms is appropriate for the population in their care.

Potential Harms. Although there is limited evidence about the harms of screening for ASD in children, reported potential harms include misdiagnosis and the anxiety associated with further testing after a positive screening result, particularly if confirmatory testing is delayed because of resource limitations. Behavioral treatments are not generally thought to be associated with significant harms but can place a large time and financial burden on the family. Other treatments for ASD are less well studied and were not included in this review.

Current Practice. A 2004 survey of pediatricians in Maryland and Delaware found that 8% screened specifically for ASD. Few data are available regarding the current prevalence of screening for ASD by clinicians in the United States.⁴ More recent surveys have found higher rates, although they remain less than 60%.⁵⁻⁸

USEFUL RESOURCES

The Centers for Disease Control and Prevention provides web-based continuing education for clinicians called Autism Case Training (available at <http://www.cdc.gov/ncbddd/actearly/autism/case-modules/index.html>), as well as other information about ASD for families (available at <http://www.cdc.gov/ncbddd/autism/families.html>).

The Health Resources and Services Administration's website provides links to training resources for professionals (available at <http://mchb.hrsa.gov/programs/autism/trainingforprofessionals.html>).

The M-CHAT screening tool is available online for free at <https://m-chat.org/>. Other

professional and advocacy organizations have also developed toolkits and resources.

The USPSTF has made a recommendation on screening for speech and language delays and disorders among children 5 years or younger (available at <http://www.uspreventiveservicestaskforce.org>).

This recommendation statement was first published in *JAMA*. 2016;315(7):691-696.

The "Other Considerations," "Discussion," and "Recommendations of Others" sections of this recommendation statement are available at <http://www.uspreventiveservicestaskforce.org/Page/Document/UpdateSummaryFinal/autism-spectrum-disorder-in-young-children-screening>.

The USPSTF recommendations are independent of the U.S. government. They do not represent the views of the Agency for Healthcare Research and Quality, the U.S. Department of Health and Human Services, or the U.S. Public Health Service.

REFERENCES

1. Developmental Disabilities Monitoring Network Surveillance Year 2010 Principal Investigators; Centers for Disease Control and Prevention (CDC). Prevalence of autism spectrum disorder among children aged 8 years: autism and developmental disabilities monitoring network, 11 sites, United States, 2010. *MMWR Surveill Summ*. 2014;63(2):1-21.
2. McPheeers ML, Weitlauf A, Vehorn A, et al. Screening for autism spectrum disorder in young children: a systematic evidence review for the U.S. Preventive Services Task Force. Evidence synthesis no. 129. AHRQ publication no. 13-05185-EF-1. Rockville, Md.: Agency for Healthcare Research and Quality; 2016.
3. Mandell DS, Wiggins LD, Carpenter LA, et al. Racial/ethnic disparities in the identification of children with autism spectrum disorders. *Am J Public Health*. 2009;99(3):493-498.
4. Dosreis S, Weiner CL, Johnson L, Newschaffer CJ. Autism spectrum disorder screening and management practices among general pediatric providers. *J Dev Behav Pediatr*. 2006;27(suppl 2):S88-S94.
5. Gillis JM. Screening practices of family physicians and pediatricians in 2 southern states. *Infants Young Child*. 2009;22(4):321-331.
6. Radecki L, Sand-Loud N, O'Connor KG, Sharp S, Olson LM. Trends in the use of standardized tools for developmental screening in early childhood: 2002-2009. *Pediatrics*. 2011;128(1):14-19.
7. Arunyanart W, Fenick A, Ukritchon S, Imjaijitt W, Northrup V, Weitzman C. Developmental and autism screening: a survey across six states. *Infants Young Child*. 2012;25(3):175-187.
8. Zuckerman KE, Mattox K, Donelan K, Batbayar O, Baghaee A, Bethell C. Pediatrician identification of Latino children at risk for autism spectrum disorder. *Pediatrics*. 2013;132(3):445-453. ■