JAMA | US Preventive Services Task Force | RECOMMENDATION STATEMENT

Screening for Speech and Language Delay and Disorders in Children
US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force

IMPORTANCE Speech and language delays and disorders can pose significant problems for children and their families. Evidence suggests that school-aged children with speech or language delays may be at increased risk of learning and literacy disabilities, including difficulties with reading and writing.

OBJECTIVE The US Preventive Services Task Force (USPSTF) commissioned a systematic review to evaluate benefits and harms of screening for speech and language delay and disorders in children 5 years or younger.

POPULATION Asymptomatic children 5 years or younger whose parents or clinicians do not have specific concerns about their speech, language, hearing, or development.

EVIDENCE ASSESSMENT The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children who do not present with signs or symptoms or parent/caregiver concerns.

RECOMMENDATION The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children 5 years or younger without signs or symptoms. (I statement)

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Summary of Recommendation

Population	Recommendation	Grade
Children 5 years or younger without signs or symptoms of speech and language delay and disorders	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children 5 years or younger.	I statement

USPSTF indicates US Preventive Services Task Force.

See the Summary of Recommendation figure.

Preamble

The US Preventive Services Task Force (USPSTF) makes recommendations about the effectiveness of specific preventive care services for patients without obvious related signs or symptoms to improve the health of people nationwide.

It bases its recommendations on the evidence of both the benefits and harms of the service and an assessment of the balance. The USPSTF does not consider the costs of providing a service in this assessment.

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation. Similarly, the USPSTF notes that policy and coverage decisions involve considerations in addition to the evidence of clinical benefits and harms.

The USPSTF is committed to mitigating the health inequities that prevent many people from fully benefiting from preventive services. Systemic or structural racism results in policies and practices, including health care delivery, that can lead to inequities in health. The USPSTF recognizes that race, ethnicity, and gender are all social rather than biological constructs. However, they are also often important predictors of health risk. The USPSTF is committed to helping reverse the negative impacts of systemic and structural racism, gender-based discrimination, bias, and other sources of health inequities, and their effects on health, throughout its work.

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Table 1. Summary of USPSTF Rationale

Rationale	Assessment
Detection	Adequate evidence on the accuracy of screening tools to detect speech and language delay and disorders in children 5 years or younger.
Benefits of early detection and intervention and treatment	Inadequate direct evidence that screening for speech and language delay and disorders in children 5 years or younger improves speech and language, school performance, function, or quality-of-life outcomes. • Inadequate evidence that interventions for speech and language delay and disorders in children 6 years or younger improve speech and language outcomes. Interventions varied across studies and results were inconsistent. • Inadequate evidence that interventions for speech and language delay and disorders in children 6 years or younger improve school performance, function, or quality-of-life outcomes. Interventions varied across studies and results were inconsistent.
Harms of early detection and intervention and treatment	Inadequate evidence on the harms of screening and interventions for speech and language delay and disorders in children 5 years or younger. No studies reported on the harms of screening or treatment.
USPSTF assessment	The USPSTF concludes that the evidence is insufficient and that the balance of benefits and harms of screening for speech and language delay and disorders in young children cannot be determined.

Abbreviation: USPSTF, US Preventive Services Task Force.

Importance

Speech and language delays and disorders can pose significant problems for children and their families. Evidence suggests that school-aged children with speech or language delays may be at increased risk of learning and literacy disabilities, including difficulties with reading and writing.[1-3] Observational cohort studies suggest that children with these conditions may also be at higher risk for social and behavioral problems in addition to learning problems, some of which may persist through adulthood.[4] Research is needed to determine whether identifying speech and language delays early (ie, in children 5 years or younger), and providing interventions helps prevent these issues before they interfere with school learning or psychosocial adjustment.

USPSTF Assessment of Magnitude of Net Benefit

The USPSTF concludes that the **evidence is insufficient** to assess the balance of benefits and harms of screening for speech and language delay and disorders in children who do not present with signs or symptoms or parent/caregiver concerns. This is not a recommendation for or against screening, and the USPSTF is calling for more research on the benefits and harms of screening.

See **Table 1** for more information on the USPSTF recommendation rationale and assessment and the eFigure in the Supplement for information on the recommendation grade. See the **Figure** for a summary of the recommendation for clinicians. For more details on the methods the USPSTF uses to determine the net benefit, see the USPSTF Procedure Manual.[5]

Practice Considerations

Patient Population Under Consideration

This statement applies only to asymptomatic children 5 years or younger whose parents or clinicians do not have specific concerns about their speech, language, hearing, or development.

The focus of this statement is identifying and treating "primary" speech and language delays and disorders (ie, in children who have not been previously identified with another condition that may cause speech or language impairment).

Definitions

Speech or language delay refers to development of speech and language in the correct sequence but at a slower rate than expected.[6] There is no universally accepted threshold for delay in speech or language development; however, performance on a standardized assessment that falls at least 1 standard deviation below the mean is often considered a delay.[6]

Speech or language disorders refer to speech or language ability that is qualitatively different from typical development. Speech disorders are defined by difficulty with forming specific sounds or words correctly (articulation) or making words or sentences flow smoothly (fluency). Language disorders are characterized by difficulty understanding (receptive language) or speaking (expressive language) relative to a child's peers.[6,7]

Screening Tests

Although the evidence is insufficient to recommend for or against screening, there are several screening tools used in primary care settings to detect speech and language delays and disorders. Some tools are part of a larger instrument designed to assess general development that includes multiple questions specific to speech and language (eg, Ages & Stages Questionnaires, Third Edition).[6] Other tools (eg, Language Development Survey and Early Language Scale) are designed to assess only speech and language development. Most screening instruments are unable to discern the difference between a child who has a delay (ie, a child with late-emerging language during the first 2 years of life) that subsequently resolves without treatment and one who will go on to display a speech and language disorder (ie, a child who will later receive a formal diagnosis of specific language impairment).[6]

Treatment or Interventions

Interventions for childhood speech and language delays and disorders vary widely and can include speech-language therapy sessions and assistive technology.[8] Interventions are commonly individualized to each child's specific pattern of symptoms, needs, interests, personality, and learning style.[6] Treatment plans also incorporate the priorities of the child, parents, teachers, or some combination thereof. Speech-language therapy may take place in various settings, such as speech and language specialty clinics, the school or classroom, the home, and via telehealth.[6,9] Therapy may be administered on an individual basis or in groups and may be child-centered or include peer and family components. Persons

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Figure. Clinician Summary: Screening for Speech and Language Delay and Disorders in Children

What does the USPSTF recommend?	**Children 5 years or younger without signs or symptoms of speech and language delay and disorders:** The USPSTF found that the current evidence is insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children. **Grade: I statement**
To whom does this recommendation apply?	• This recommendation applies to asymptomatic children 5 years or younger whose parents or clinicians do not have specific concerns about their speech, language, hearing, or development. • This recommendation does not apply to children with another condition that may cause speech or language impairment (eg, autism spectrum disorder).
What's new?	This updated recommendation is consistent with the 2015 USPSTF recommendation on screening for speech and language delay and disorders in children 5 years or younger.
How to implement this recommendation?	• There is insufficient evidence to recommend for or against screening for speech and language delay and disorders in younger children. The USPSTF is calling for more research on the benefits and harms of screening for speech and language delays and disorders, especially in populations known to have the highest burden (Black and Hispanic/Latino children and children from households with low incomes). • Clinicians should use their clinical judgment regarding whether and how to screen for speech and language delay and disorders. Clinicians should also be aware of signs and symptoms of speech and language delays and disorders and listen to any caregiver concerns.
What additional information should clinicians know about this recommendation?	• The estimated prevalence of speech and language disorders ranges between 3% and 16% of US children and adolescents aged 3 to 21 years. Boys are more than twice as likely to be affected than girls. • There are notable disparities in the prevalence of speech and language delays and disorders, with Black and Hispanic/Latino children and children from households with low incomes having higher rates of speech and language delays and disorders compared with White children. • The USPSTF found adequate evidence on the accuracy of screening tools to detect speech and language delay and disorders. However, there was limited and inconsistent evidence on the effectiveness of interventions on intermediate outcomes such as speech and language domains (eg, fluency, articulation, and expressive and receptive language) and health outcomes (eg, improved school performance, social/emotional function, or quality of life).
Why is this recommendation and topic important?	• Evidence suggests that many younger children identified as having speech and language delay go on to recover without intervention. • However, school-aged children with speech and language delays and disorders may be at increased risk of learning and literacy disabilities, including difficulties with reading and writing. Studies also suggest that children with these conditions may be at higher risk for social and behavioral problems in addition to learning problems, some of which may persist through adulthood.
Where to read the full recommendation statement?	Visit the USPSTF website (https://www.uspreventiveservicestaskforce.org/uspstf/) or the *JAMA* website (https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force) to read the full recommendation statement. This includes more details on the rationale of the recommendation, including benefits and harms; supporting evidence; and recommendations of others.

The USPSTF recognizes that clinical decisions involve more considerations than evidence alone. Clinicians should understand the evidence but individualize decision-making to the specific patient or situation.

administering therapy may be speech-language pathologists, educators, or parents. The duration and intensity of the intervention usually depend on the severity of the speech or language disorder and the child's progress in meeting therapy goals.[6]

Suggestions for Practice Regarding the I Statement

Potential Preventable Burden

Information about the prevalence of speech and language delays and disorders in young children in the US is limited, and prevalence varies by age and other factors. In a 2016 report, the National Academy of Sciences estimated that the prevalence of speech and language disorders ranges between 3% and 16% of US children and adolescents aged 3 to 21 years.[10]

Several risk factors have been reported to be associated with speech and language delay and disorders, including male sex, family history of speech and language impairment, low parental education level, and perinatal risk factors (eg, prematurity, low birth weight, and birth difficulties).[11]

Multiple studies have demonstrated a higher prevalence among boys than girls and among certain groups defined by race and ethnicity. A 2012 survey found that nearly 8% of children aged 3 to 17 years had a communication disorder (speech and language disorder), with boys almost twice as likely to be affected than girls. In the same study, approximately 10% of children identified as non-Hispanic Black were affected compared with 6.9% of children identified as Hispanic and 7.8% identified as White.[12] Disparities in the prevalence of speech and language delay and disorders have also been observed based on various measures of socioeconomic status, including type of insurance. For example, a nationally representative US cohort study found that by age 8 years, the prevalence of speech or language disorders was significantly higher among publicly insured children (8.4%) than privately insured children (4.5%).[13]

Many children identified as toddlers with speech and language delays go on to recover without intervention. One systematic review estimated that approximately 60% of children with expressive language delay and 25% with receptive and expressive delay

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recovered without intervention.[14] However, evidence also suggests that school-aged children with speech or language delays may be at increased risk of learning and literacy disabilities, including difficulties with reading and writing.[1-3] Observational cohort studies suggest that children with these conditions may also be at higher risk for social and behavioral problems in addition to learning problems, some of which may persist through adulthood.[4,15]

Potential Harms

The potential harms of screening and interventions for speech and language delays and disorders in young children in primary care include the time, effort, and anxiety associated with further testing after a positive screening result, as well as the potential harms associated with diagnostic labeling.[16] The USPSTF found no studies on these harms.[6]

Current Practice

Surveillance and screening for speech and language delay and disorders is commonly performed as part of routine developmental surveillance and screening in primary care settings (ie, during well-child visits).[17] An estimated 30% of US children aged 9 to 35 months received a parent-completed developmental screening in the past year, with significant variation across states (ranging from 17% in Mississippi to 59% in Oregon).[18] General screening instruments with speech and language components (eg, Ages & Stages Questionnaires) are the most-used tools.[19] It is unclear how many clinicians use tools specific to speech and language development.[6]

Implementation of screening and treatment protocols remain a challenge. Based on data from the 2012 National Health Interview Survey, approximately one-half of all children aged 3 to 17 years with a speech and language disorder received an intervention service in the previous 12 months.[12] Additionally, disparities exist in the rates of referral or services by race and ethnicity for children who are identified as having a potential speech or language problem. Children identified as Hispanic/Latino and Black are less likely to receive services compared with children identified as White.[12]

Other Related USPSTF Recommendations

The USPSTF has a separate recommendation statement on screening for autism spectrum disorder (I statement).[20]

Update of Previous USPSTF Recommendation

In 2015, the USPSTF concluded that the evidence was insufficient to assess the balance of benefits and harms of screening for speech and language delay and disorders in children 5 years or younger (I statement).[16] The current recommendation concurs with the previous I statement.

Supporting Evidence

Scope of Review

The USPSTF commissioned a systematic review to evaluate the benefits and harms of screening for speech and language delay and disorders in children 5 years or younger.[6,21] It also evaluated evidence on whether interventions for screen-detected speech and language delay and disorders lead to improved speech, language, or other outcomes, as well as the potential harms associated with screening and interventions. Treatment studies enrolling children up to age 6 years were eligible, given that children who would be screened at age 5 years and referred for treatment may not receive services immediately.[6,21]

The review was limited to studies in children who had not been previously identified with another disorder or disability that may cause speech or language impairment. The review excluded studies that focused on acquired, focal causes of speech and language delay.[6,21] Although abnormal speech and language development may be associated with autism spectrum disorder, this review did not evaluate screening for autism spectrum disorder. The USPSTF has a separate recommendation statement on screening for autism spectrum disorder.[20]

Accuracy of Screening Tests

The USPSTF identified 21 good- or fair-quality studies (n = 7489) that evaluated the accuracy of 23 screening tools for detecting speech and language delays and disorders in young children.[6,21] The age of study populations ranged from 12 to 70 months (approximately 5.80 years), with a mean age of 39 months. Recruitment techniques and venues included primary care practices, childcare centers/preschools/kindergartens, health/public health centers, advertisements, birth announcements, early childhood programs, and Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) offices. In the 16 studies that reported the sex of the participants, 47% were female.[6] Most studies did not report race and ethnicity. The median prevalence of speech and language disorders in the study populations was 16% (range, 4%-59%).[6]

Thirteen speech- and language-screening tools were designed to be administered by a trained examiner and 10 were parent reports of speech or language skills. Twelve instruments were designed to screen for global language delay and disorders, 9 were designed to screen for specific language problems such as expressive language skills or understanding of syntax, and 4 were used to screen for articulation problems.

Overall, the median sensitivity and specificity of instruments for detecting speech and language delay and disorders was 86% (range, 17%-100%) and 87% (range, 32%-98%), respectively.[6,21] Test accuracy varied in terms of whether the instruments were completed by parents vs trained examiners and whether the instruments focused on global language, specific language skills, or articulation. In general, screening tools designed for use by trained examiners were slightly more accurate than those designed for parent reports.[6,21] Few screening instruments were assessed by more than 1 study each, making it difficult to make conclusions about the accuracy of specific questionnaires.[6,21]

Benefits of Early Detection and Treatment

The USPSTF found no studies addressing the direct benefits of screening for speech and language delay and disorders on health outcomes such as school performance, function, or quality-of-life outcomes.[6,21]

The USPSTF identified 17 randomized clinical trials on the potential benefits of interventions for children diagnosed with speech and language delays and disorders.[6,21] Study participants were recruited from several different settings, including schools or early childhood education centers (4 studies), referrals to speech and

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Table 2. Research Needs and Gaps in Screening for Speech and Language Delay and Disorders in Children

To fulfill its mission to improve health by making evidence-based recommendations for preventive services, the USPSTF routinely highlights the most critical evidence gaps for making actionable preventive services recommendations. The USPSTF often needs additional evidence to create the strongest recommendations for everyone and especially for persons with the greatest burden of disease. This table summarizes the key bodies of evidence needed for the USPSTF to make a recommendation for screening for speech and language delay and disorders. **For each of the evidence gaps listed below, research must focus on screening and preventive interventions that can be performed in, or referred from, the primary care setting.** For additional information on research needed to address these evidence gaps, see the Research Gaps Taxonomy table on the USPSTF website (https://www.uspreventiveservicestaskforce.org/home/getfilebytoken/JSGBH9kosGA5GkwNDECYSp).
Screening for speech and language delay and disorders in children
Treatment studies are needed of screen-detected populations that follow children over short and longer (>1 y) durations to detect improvement in outcomes such as academic performance, social and emotional health, or child and family well-being. These studies should focus on enrolling children from groups with the greatest burden of speech and language delay and disorders (Black and Hispanic/Latino children and children from households with low incomes). These types of studies would help to understand if changes in speech and language outcomes translate into changes in the broader health and well-being of children and their families, including how children function in school and at home.
Standardization of outcome measurement across studies is needed. There was significant heterogeneity in reporting on speech and language outcomes in the treatment studies. Standardization would greatly strengthen the evidence base and improve the ability to pool data.
Studies are needed on the potential harms of screening and treatment such as labeling, stigma, parent anxiety, other psychosocial harms, and overdiagnosis.

language treatment centers (6 studies), via advertisements (4 studies), and a mix of advertisements and outreach to schools, clinical settings, or community-based programs. Few studies reported the race and ethnicity of the participants. The mean age of enrolled populations ranged from 18.1 to 67.8 months (5.6 years), with the majority of studies (10 studies) including a population with a mean age of 48.4 months or older.[6,21]

The included studies evaluated a diverse array of interventions that targeted different populations of children (eg, any delay or disorder or speech disorders only) and varied by setting, intensity/duration, and delivery personnel. Eight trials assessed interventions specific to children with language delay and without fluency or speech-sound impairment. Of these, 2 studies evaluating more intensive parent-delivered, group training interventions found benefits for expressive language outcome measures.[6,21] Other interventions for language delay varied by delivery setting, population, and other factors. In general, results were inconsistent, with some studies showing improvement in some measures of receptive or expressive language but others not. Two randomized clinical trials assessed treatment for young children with fluency disorder (stuttering) delivered by a speech-language pathologist. Both found benefit for reducing stuttering frequency at 9 months postintervention. It was unclear whether these children were identified by formal screening or through normal surveillance.[6,21]

Eight studies reported on outcomes related to school or academic performance, early literacy, functional communication, or quality of life.[6,21] No individual study was replicated by a study using the same intervention and reporting similar measures. Four studies reported measures of early literacy, with only 1 trial demonstrating statically significant benefit for improving letter knowledge. Two trials assessing different interventions for speech-sound disorders found no statistically significant difference between groups on measures of functional communication. No study reported benefit for improving function or quality of life among children.[6,21]

Harms of Screening and Treatment

The USPSTF identified no studies on the potential harms of screening or interventions for speech and language delay and disorders in children.[6,21]

Response to Public Comment

A draft version of this recommendation statement was posted for public comment on the USPSTF website from July 25, 2023, to August 21, 2023. Many comments expressed that readers might misinterpret the I statement as a recommendation against screening or that treatment of speech and language delay is ineffective. Given the disparities in access to care among marginalized groups, commenters felt an I statement could discourage clinicians from screening and further widen health disparities for these children. The USPSTF wishes to clarify that its I statement is a conclusion that the evidence is insufficient to assess the balance of benefits and harms of screening for speech delays and disorders and is neither a recommendation for nor against screening. Clinicians should continue to use their clinical judgment to determine if screening is appropriate for individual patients.

Several comments noted the higher prevalence of speech and language delay in Black and Hispanic/Latino children and questioned why the USPSTF did not recommend screening in these higher-risk groups. The USPSTF recognizes that speech and language delay is more prevalent among certain marginalized groups; however, it did not find evidence on screening in asymptomatic higher-risk groups. Additionally, few studies on treatment of screen-detected speech and language delay reported the race or ethnicity of their participants. The USPSTF is committed to addressing health disparities and is calling for more studies that focus on higher-risk populations.

Research Needs and Gaps

See **Table 2** for the research needs and gaps related to screening for speech and language delay and disorders in children.

Recommendations of Others

The American Academy of Pediatrics recommends routine developmental *surveillance* at all well-child visits. Additionally, it recommends developmental *screening* (which may include speech and language domains, but is not specific to speech and language delay and disorders) with validated tools at the 9-month, 18-month, and 30-month visits.[17,22,23] The Canadian Task Force on Preventive Health Care recommends against screening for developmental delay using standardized tools in children aged 1 to 4 years with no apparent signs of developmental delay and whose parents and clinicians have no concerns about development.[24]

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ARTICLE INFORMATION

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