

# Screening for Obstructive Sleep Apnea in Adults

## US Preventive Services Task Force Recommendation Statement

US Preventive Services Task Force

**IMPORTANCE** Current prevalence of obstructive sleep apnea (OSA) in the US is not well established; however, based on cohort and survey data, in 2007-2010 the estimated prevalence of at least mild OSA (defined as an apnea-hypoxia index [AHI]  $\geq 5$ ) plus symptoms of daytime sleepiness among adults aged 30 to 70 years was 14% for men and 5% for women, and the estimated prevalence of moderate to severe OSA (defined as AHI  $\geq 15$ ) was 13% for men and 6% for women. Severe OSA is associated with increased all-cause mortality. Other adverse health outcomes associated with untreated OSA include cardiovascular disease and cerebrovascular events, type 2 diabetes, cognitive impairment, decreased quality of life, and motor vehicle crashes.

**OBJECTIVE** To update its 2017 recommendation, the US Preventive Services Task Force (USPSTF) commissioned a systematic review to evaluate the benefits and harms of screening for OSA in adults.

**POPULATION** Asymptomatic adults (18 years or older) and adults with unrecognized symptoms of OSA.

**EVIDENCE ASSESSMENT** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for OSA in the general adult population.

**RECOMMENDATION** The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for OSA in the general adult population. (I statement)

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**Group Information:** A complete list of the members of the US Preventive Services Task Force appears at the end of this article.

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### Summary of Recommendation

Population	Recommendation	Grade
General adult population	The USPSTF concludes that the current evidence is insufficient to assess the balance of benefits and harms of screening for obstructive sleep apnea in the general adult population.	I

See the Practice Considerations section for additional information regarding the I statement. USPSTF indicates US Preventive Services Task Force.

See the Summary of Recommendation figure.

### Importance

The current prevalence of obstructive sleep apnea (OSA) in the US is not well established. Based on cohort and survey data from 2007-2010, the estimated prevalence of at least mild OSA (defined as an apnea-hypoxia index [AHI]  $\geq 5$ ) plus symptoms of daytime sleepiness among adults aged 30 to 70 years was 14% for men and 5% for women, and the estimated prevalence of moderate to severe OSA (defined as AHI  $\geq 15$ ) was 13% for men and 6% for women.<sup>1</sup> Severe OSA is associated with increased all-cause mortality.<sup>2,3</sup> Other adverse health outcomes associated with

untreated OSA include cardiovascular disease and cerebrovascular events, type 2 diabetes, cognitive impairment, decreased quality of life, and motor vehicle crashes.<sup>2,3</sup>

### USPSTF Assessment of Magnitude of Net Benefit

The US Preventive Services Task Force (USPSTF) concludes that the current **evidence is insufficient** to assess the balance of benefits and harms of screening for OSA in the general adult population.

See the **Table** for more information on the USPSTF recommendation rationale and assessment and the eFigure in the Supplement

**Table. Summary of USPSTF Rationale**

Rationale	Assessment
Detection	There is inadequate evidence on the accuracy of screening questionnaires and multistep screening approaches to identify adults in the general population at increased risk for OSA. Few studies were available on any individual screening questionnaire or screening approach, and most were conducted in selected populations with a high prevalence of OSA.
Benefits of early detection and intervention and treatment	<ul style="list-style-type: none"> <li>• There is inadequate evidence on the benefits of screening for OSA in the general adult population. No trials were identified that directly compared benefits in screened vs unscreened populations.</li> <li>• Although there is some evidence that treatment of OSA with positive airway pressure may affect intermediate outcomes (ie, apnea-hypopnea index and blood pressure) and health outcomes (ie, quality of life) in patients referred for OSA treatment, evidence of effects in screen-detected populations is lacking, and therefore inadequate.</li> <li>• There is inadequate evidence on the effect of treatment of OSA on other health outcomes such as mortality or cardiovascular events because of few studies with few events and inadequate follow-up.</li> </ul>
Harms of early detection and intervention and treatment	<ul style="list-style-type: none"> <li>• There is inadequate evidence on the harms of screening for OSA in the general adult population. No trials were identified that directly compared harms in screened vs unscreened populations.</li> <li>• There is inadequate evidence on the harms of treatment of OSA in screen-detected populations. Limited evidence is available on harms in patients referred for OSA treatment, while evidence in screen-detected populations is lacking.</li> </ul>
USPSTF assessment	<ul style="list-style-type: none"> <li>• There is insufficient evidence available to assess the balance of benefits and harms of screening for OSA in the general adult population.</li> <li>• Evidence on screening tools to accurately detect persons in the general adult population at increased risk of OSA who should receive further testing and treatment is lacking.</li> </ul>

Abbreviations: OSA, obstructive sleep apnea; USPSTF, US Preventive Services Task Force.

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.<sup>4</sup>

## Practice Considerations

### Patient Population Under Consideration

This recommendation applies to asymptomatic adults (18 years or older). It also applies to adults with unrecognized symptoms of OSA (eg, snoring, witnessed apnea, excessive daytime sleepiness, impaired cognition, mood changes, or gasping or choking while asleep). This includes persons who are not aware of their symptoms or do not report symptoms as being a concern to their clinician.

This recommendation does not apply to persons presenting with symptoms or concerns about OSA, persons who have been referred for evaluation or treatment of suspected OSA, or persons who have acute conditions that could trigger the onset of OSA (eg, stroke). Care of these persons should be managed as clinically appropriate. This recommendation also does not apply to children, adolescents, or pregnant persons.

### Definitions

Obstructive sleep apnea is a sleep disorder characterized by episodes of narrowing and obstruction of the pharyngeal airway during sleep, resulting in reductions or cessations in airflow despite ventilatory effort.<sup>5</sup> Total airway obstruction for more than 10 seconds is defined as apnea, whereas hypopnea is a partial airway obstruction with at least a 3% reduction in blood oxygen saturation or sleep arousals.<sup>6</sup> Obstructive sleep apnea is defined as more than 5 apneic, hypoxic, or sleep arousal events per hour despite efforts to breathe. The AHI is used to define the severity of OSA. In general, mild OSA is defined as 5 to 15 events per hour, moderate OSA as 16 to 30 events per hour, and severe OSA as more than 30 events per hour.<sup>6</sup> Common clinical signs and symptoms of OSA include excessive daytime sleepiness, unrefreshing sleep despite length of sleep, loud or irregular snoring, and choking or gasping while asleep.<sup>7</sup>

### Risk Factors

Risk factors associated with OSA include male sex, older age (40-70 years), postmenopausal status, higher body mass index (BMI), and craniofacial and upper airway abnormalities (eg, enlarged tonsils or long upper airway). Black, Hispanic/Latino, and Native American/Alaska Native persons have a higher prevalence of OSA compared with White persons; some evidence suggests that these differences are partially explained by higher rates of obesity, asthma, and tobacco use among these groups.<sup>8</sup>

### Screening Tests

There are several screening questionnaires and clinical prediction tools that attempt to identify persons at higher risk of OSA. Many combine questions about clinical findings (eg, BMI and neck circumference) with questions about symptoms associated with OSA. Potential screening questionnaires and clinical prediction tools include the Epworth Sleepiness Scale (ESS),<sup>9</sup> STOP questionnaire (snoring, tiredness, observed apnea, high blood pressure),<sup>10</sup> STOP-BANG questionnaire (STOP questionnaire plus BMI, age, neck circumference, and gender),<sup>11</sup> Berlin Questionnaire,<sup>12</sup> Wisconsin Sleep Questionnaire,<sup>13</sup> and the Multivariable Apnea Prediction tool.<sup>14</sup> However, none of these instruments have been adequately validated in general populations enrolled from primary care settings.<sup>15,16</sup>

Persons with suspected OSA are usually diagnosed using polysomnography, which combines several measurements, including an electroencephalogram, electro-oculogram, chin electromyogram, airflow monitor, oxygen saturation, respiratory effort, and electrocardiogram or heart rate.<sup>15,16</sup> Additional recommended measurements include body position and leg movements.<sup>17</sup> The resultant AHI measured during polysomnography is representative of the frequency of events and used to describe the severity of disease or condition.

### Treatment

A positive airway pressure device, which uses compressed air to maintain the airway, is the primary treatment for OSA.<sup>15,16</sup> For patients with overweight and obesity, weight loss is also recommended.<sup>4</sup> Mandibular advancement devices (MADs) are an alternative therapy to positive airway pressure for patients with OSA who prefer them

Figure. Clinician Summary: Screening for Obstructive Sleep Apnea in Adults

What does the USPSTF recommend?	For adults 18 years or older who do not have signs or symptoms of obstructive sleep apnea (OSA): The USPSTF found that the current evidence is insufficient to assess the balance of benefits and harms of screening for OSA. <b>Grade: I statement</b>
To whom does this recommendation apply?	<ul style="list-style-type: none"> <li>This recommendation applies to adults 18 years or older without signs or symptoms of OSA.</li> <li>It also applies to adults with unrecognized symptoms of OSA. <ul style="list-style-type: none"> <li>Signs and symptoms of sleep apnea include snoring, witnessed apnea, excessive daytime sleepiness, impaired cognition, mood changes, or gasping or choking while asleep.</li> </ul> </li> <li>This recommendation includes persons who are not aware of their symptoms or do not report symptoms as being a concern to their clinician.</li> <li>This recommendation does not apply to children, adolescents, or pregnant women. It also does not apply to persons being evaluated in occupational settings (eg, during a workplace fitness-for-duty evaluation) or persons who have acute conditions that could trigger the onset of OSA (eg, stroke).</li> </ul>
What's new?	<ul style="list-style-type: none"> <li>This updated recommendation is consistent with the 2017 USPSTF recommendation on screening for OSA.</li> </ul>
How to implement this recommendation?	<ul style="list-style-type: none"> <li>There is insufficient evidence to recommend for or against screening for OSA in the general adult population. The USPSTF is calling for more research on the benefits and harms of screening for OSA, as well as screening tools that can accurately detect persons in the general adult population at increased risk of OSA.</li> <li>Clinicians should use their clinical judgment regarding whether to screen and how to screen for OSA.</li> </ul>
What additional information should clinicians know about this recommendation?	<ul style="list-style-type: none"> <li>Individuals at increased risk for sleep apnea include men, postmenopausal persons, older adults (aged 40 to 70 years), persons with a higher body mass index, and persons with a physical irregularity that could affect their upper airway and breathing.</li> <li>In addition, Black, Hispanic/Latino, and Native American/Alaska Native persons have higher rates of sleep apnea compared with White persons.</li> <li>The USPSTF found inadequate evidence on the accuracy of screening questionnaires and multistep screening approaches to identify adults at increased risk for OSA.</li> <li>Treatment with continuous positive airway pressure or mandibular advancement devices can improve intermediate outcomes (ie, apnea-hypopnea index, Epworth Sleepiness Scale score, and blood pressure) in populations referred for treatment. However, the applicability of this evidence to screen-detected populations is limited.</li> </ul>
Why is this recommendation and topic important?	Adverse health outcomes associated with untreated OSA include cardiovascular disease and cerebrovascular events, type 2 diabetes, cognitive impairment, decreased quality of life, and motor vehicle crashes. Severe OSA is associated with increased all-cause mortality.
Where to read the full recommendation statement?	Visit the USPSTF website ( <a href="https://www.uspreventiveservicestaskforce.org/uspstf/">https://www.uspreventiveservicestaskforce.org/uspstf/</a> ) or the JAMA website ( <a href="https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force">https://jamanetwork.com/collections/44068/united-states-preventive-services-task-force</a> ) 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.

USPSTF indicates US Preventive Services Task Force.

or for those with adverse effects associated with positive airway pressure.<sup>15,16</sup> Surgical interventions for OSA are available, but they generally are not considered first-line treatments.<sup>15,16</sup>

### Suggestions for Practice Regarding the I Statement

#### Potential Preventable Burden

The exact prevalence of OSA is unknown; however, the estimated prevalence of OSA in the US population has increased in the past few decades. For example, the diagnosis of OSA in the National Ambulatory Medical Care Survey rose by 442% between 1999 and 2010.<sup>18</sup> This is primarily attributed to the increase in prevalence of obesity.<sup>1,2</sup> Obstructive sleep apnea is associated with multiple adverse health outcomes such as cognitive impairment, motor vehicle crashes, lost work days, work disability, impaired work performance, and decreased quality of life.<sup>15,16</sup> Obstructive sleep apnea has also been associated with cardiovascular disease (eg, coronary heart disease, stroke, or hypertension), type 2 diabetes, and metabolic syndrome.<sup>15,16</sup> While OSA is associated with increased all-cause mortality, its role independent of other risk factors (older age, higher BMI,

and other cardiovascular risk factors), as well as the role of progression rates of OSA from mild to severe disease, is less clear.<sup>15,16</sup>

#### Potential Harms

Commonly reported harms of treatment with positive airway pressure include oral or nasal dryness, eye or skin irritation, rash, and pain. Reported harms of treatment with MADs include oral mucosal, dental, or jaw symptoms, such as mucosal or dental pain, discomfort or tenderness, mucosal erosions, and jaw or temporomandibular joint pain or discomfort.<sup>15,16</sup> In general, the adverse events related to positive airway pressure and MAD therapy resolve with discontinuation of treatment.

#### Current Practice

Most primary care clinicians do not routinely screen for OSA, and most patients do not discuss sleep-related symptoms with their primary care clinicians. One study found that only 20% of patients with sleep-related symptoms spontaneously reported them to their primary care clinicians.<sup>15,16,19</sup> For persons with suspected OSA,

current practice is usually referral to a specialist for appropriate diagnostic testing and treatment.<sup>20</sup>

## Update of Previous USPSTF Recommendation

This recommendation replaces the 2017 USPSTF recommendation on screening for OSA. In 2017, the USPSTF found insufficient evidence to assess the balance of benefits and harms of screening for OSA in asymptomatic adults (I statement). This recommendation statement is consistent with the I statement from 2017.<sup>21</sup>

## Supporting Evidence

### Scope of Review

The USPSTF commissioned a systematic review to evaluate the benefits and harms of screening for OSA in adults.<sup>15,16</sup> The systematic review also evaluated the evidence on the benefits and harms of treatment of OSA on intermediate outcomes (eg, change in AHI and blood pressure) and health outcomes (eg, mortality, quality of life, cardiovascular and cerebrovascular events, and cognitive impairment).

### Accuracy of Screening Tests and Risk Assessment

Seven studies assessed 1 or more clinical prediction tools or screening questionnaires compared with facility-based polysomnography: 2 studies assessed the Berlin Questionnaire, 4 studies the STOP-BANG questionnaire, and 2 studies the Multivariable Apnea Prediction tool. Study sizes ranged from 43 to 1033 participants, and studies were generally conducted in participants with underlying conditions such as hypertension, type 2 diabetes, or Alzheimer disease or in persons with symptoms.<sup>15,16</sup> The Berlin Questionnaire had sensitivity ranging from 37% to 80% and specificity ranging from 0% to 84% for detecting mild OSA. In the 2 studies evaluating the original STOP-BANG questionnaire, both found good sensitivity (87% to 94%) but low specificity (0% to 38%) for detecting OSA at different AHI cut points.<sup>15,16</sup> Two studies assessed a modified version of the STOP-BANG questionnaire (different scoring criteria) in different populations; sensitivity ranged from 61% to 100% and specificity ranged from 21% to 76% for detecting OSA at different AHI cut points.<sup>15,16</sup>

In the 2 studies that assessed the Multivariable Apnea Prediction tool alone and when followed by an unattended home sleep test, sensitivity ranged between 88% and 92% and specificity ranged between 44% and 76% to predict severe OSA syndrome (defined in the study as AHI  $\geq$ 30 and ESS score  $>$ 10).<sup>15,16</sup> However, these studies were conducted in populations that had a high prevalence of OSA (and thus more likely to be symptomatic) and a high risk of spectrum bias (ie, the study population did not represent the general primary care population).

### Benefits of Early Detection and Treatment

The USPSTF found no studies that directly evaluated the effect of screening for OSA on health outcomes. The USPSTF did identify and review studies on the effect of treatment on intermediate outcomes and health outcomes.

### Intermediate Outcomes

The USPSTF reviewed evidence from 4 systematic reviews of good-quality treatment trials evaluating the effect of positive air-

way pressure or MADs on intermediate outcomes, including AHI and blood pressure.<sup>15,16</sup>

Three systematic reviews focused on the benefit of positive airway pressure for reducing blood pressure outcomes. One review limited to minimally symptomatic, asymptomatic, or nonsleepy populations pooled data comparing positive airway pressure with controls and demonstrated an association with a small reduction in daytime diastolic blood pressure ( $-0.92$  mm Hg [95% CI,  $-1.39$  to  $-0.46$  mm Hg]; 5 trials; 1541 participants;  $I^2 = 0$ ) and no significant difference between groups in daytime systolic blood pressure ( $-0.51$  mm Hg [95% CI,  $-3.39$  to  $2.38$  mm Hg];  $I^2 = 84\%$ ). A second review of positive airway pressure that included trials of any OSA severity and symptoms pooled analyses and showed that positive airway pressure was associated with a reduction in mean 24-hour blood pressure of  $-2.63$  mm Hg (95% CI,  $-3.86$  to  $-1.39$  mm Hg; 8 trials; 994 participants;  $I^2 = 0\%$ ).<sup>8</sup> The third review of positive airway pressure was limited to populations with resistant hypertension (23 trials; 4905 participants); pooled analysis showed a reduction in mean 24-hour systolic blood pressure ( $-5.06$  mm Hg [95% CI,  $-7.98$  to  $2.13$  mm Hg];  $I^2 = 84\%$ ) and mean 24-hour diastolic blood pressure ( $-4.21$  mm Hg [95% CI,  $-6.50$  to  $-1.93$  mm Hg];  $I^2 = 81\%$ ). One review found benefits associated with MADs compared with inactive control for improving blood pressure; however, differences between groups were imprecise and not statistically significant.<sup>15,16</sup>

Two reviews reported on the difference between groups in change from baseline AHI with positive airway pressure. The pooled estimates in AHI reduction favoring positive airway pressure were generally consistent. The review that limited inclusion to studies of asymptomatic adults with OSA or those of minimally symptomatic, nonsleepy adults found a pooled mean difference of  $-15.57$  events per hour (95% CI,  $-29.32$  to  $-1.82$  events per hour; 3 trials; 1541 participants).<sup>15,16</sup>

### Health Outcomes: Positive Airway Pressure Devices

Sixty-three randomized clinical trials (RCTs) comparing positive airway pressure with sham treatment or another inactive control reported on at least 1 health outcome. Most trials enrolled participants from sleep clinics, and no trial enrolled screen-detected populations from a primary care setting.<sup>15,16</sup>

Thirty-one RCTs reported on mortality; however, 28 of these trials reported mortality rates at 12 weeks or less, and 25 of these trials reported no deaths in any study group. Three RCTs assessed mortality over a longer duration, and none found a statistically significant difference between groups. Similarly, the short duration of most trials and the small number of total events makes it difficult to assess the effect of positive airway pressure on cardiovascular and cerebrovascular events.<sup>15,16</sup>

Forty-eight trials reported on changes in excessive daytime sleepiness using the ESS. The meta-analysis found that positive airway pressure was associated with reduced mean ESS scores more than controls (pooled mean difference,  $-2.30$  [95% CI,  $-2.72$  to  $-1.88$ ]; 48 trials; 7099 participants). This pooled mean difference is within the range some consider as minimally clinically important for the ESS ( $-2$  to  $-3$ ).<sup>15,16</sup>

Twenty-eight RCTs reported measures of general health-related quality of life and 17 RCTs reported measures of sleep-related quality of life (using a variety of questionnaires). Overall, positive airway pressure was associated with small improvements

in both general health-related and sleep-related quality of life. However, these improvements are not considered clinically meaningful (ie, less than a minimal clinically important difference).<sup>15,16</sup>

#### Health Outcomes: MADs

Twelve trials assessed the effect of MADs on health outcomes. All studies recruited participants with known or suspected OSA from specialty clinics. Treatment duration ranged from 4 to 12 weeks in most trials.<sup>15,16</sup>

Ten trials were included in a meta-analysis reporting on change in ESS score among groups randomized to MADs or an inactive control. It found that MADs were associated with improved ESS scores more than controls (pooled mean difference, -1.67 [95% CI, -2.09 to -1.25]; 10 trials; 1540 participants;  $I^2 = 36%$ ); however, this change falls below the range considered a minimal clinically important difference for the ESS.<sup>15,16</sup> Several studies reported on various quality-of-life metrics. Overall, the findings were inconsistent or imprecise, making it difficult to draw conclusions on the quality-of-life benefits related to MADs. Four trials reported on mortality; however, the duration of reporting was short (1 to 12 weeks) and only 1 death was reported in the intervention group.<sup>15,16</sup>

#### Harms of Screening and Treatment

The USPSTF found no studies that directly evaluated harms associated with screening for OSA. Nineteen trials reported on harms associated with treatment of OSA using positive airway pressure or MADs. In general, reporting on harms related to treatment was sparse, and no trial included screen-detected persons identified from a primary care setting.<sup>15,16</sup>

Ten studies (n = 2064) reported on harms of treatment with positive airway pressure. Follow-up in these studies was generally from 8 to 12 weeks. Overall, 1% to 47% of trial participants reported any harms from treatment with positive airway pressure, including oral or nasal dryness, eye or skin irritation, rash, epistaxis, and pain. In general, harms related to positive airway pressure treatment were short-lived and could be alleviated by discontinuing treatment or by supplementing positive airway pressure with additional interventions.<sup>15,16</sup>

Ten trials (n = 684) reported on harms of treatment with MADs. Follow-up in these trials was generally from 4 to 8 weeks. In general, findings were imprecise. In 7 trials, 17% to 74% of participants reported oral mucosal, dental, or jaw symptoms, compared with 0% to 17% of participants in comparator groups (sham treatment, no treatment, or conservative management). In 4 trials, 5% to 33% of participants reported oral dryness, compared with 0% to 3% in control groups, and in 3 trials, 23% to 68% of participants reported excessive salivation, compared with 0% to 3% in comparator groups.<sup>15,16</sup>

#### Response to Public Comment

A draft version of this recommendation statement was posted for public comment on the USPSTF website from March 29, 2022, to April 25, 2022. Some comments expressed concern that the recommendation statement does not adequately differentiate persons who are asymptomatic from those with unrecognized symptoms. In response, the USPSTF added clarifying language to describe common symptoms of OSA and defined what is meant by persons with unrecognized symptoms. Comments also proposed that the USPSTF call for screening in patients considered at higher risk.

The USPSTF recognizes that certain groups are at increased risk of OSA but did not find any studies that directly evaluated the effect of screening for OSA on health outcomes. The USPSTF wishes to clarify that its I statement 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. Comments asked why the recommendation statement focused only on positive airway pressure and MADs and excluded surgical interventions. The focus of this recommendation is first-line therapies for OSA. Surgical therapies are typically reserved for patients who do not respond to first-line therapies or have more severe symptoms (and thus are less likely to be asymptomatic or referred from primary care).

Several respondents asked the USPSTF to specify the types of studies it needs to fill evidence gaps and to consider study types other than RCTs. The USPSTF wishes to clarify that there are no generic criteria (ie, only considering RCTs) for the types of evidence it would consider for review. The criteria for consideration depend on the type and quality of evidence the USPSTF needs to make an accurate determination of benefits and harms of delivering a preventive health service.

#### Research Needs and Gaps

More studies are needed that address the following areas.

- Well-designed studies of OSA screening in asymptomatic populations representative of the US primary care population that evaluate the benefits and harms of screening on health outcomes (eg, mortality, cardiovascular disease events, motor vehicle crashes, and quality of life) in screened vs unscreened persons.
- Accuracy studies of screening tools in a general US adult primary care population, especially in persons with unrecognized or mild symptoms.
- Development of accurate risk assessment tools that can identify populations most likely to benefit from OSA screening.
- More data on the natural history of OSA; in particular, the rates of progression from mild to severe OSA, the length of duration before progression, and the magnitude of benefit if OSA is identified and treated earlier.

#### Recommendations of Others

Most groups do not recommend routine screening in primary care settings among populations without signs or symptoms of OSA. US Department of Veterans Affairs guidelines suggest using the STOP questionnaire to stratify the risk of OSA among patients who report sleep issues (weak recommendation) and also suggest assessing for sleep-disordered breathing in patients with a history of cardiovascular or cerebrovascular events, congestive heart failure, and chronic opioid use (weak recommendation).<sup>22</sup> The American Academy of Sleep Medicine has a health advisory recommending annual OSA screening for adult patients who belong to certain high-risk groups.<sup>23</sup> In 2014, the American College of Physicians recommended conducting a sleep study for patients with unexplained daytime sleepiness (weak recommendation, low-quality evidence).<sup>24</sup>



## ARTICLE INFORMATION

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**Author Contributions:** Dr Mangione had full access to all of the data in the study and takes responsibility for the integrity of the data and the accuracy of the data analysis. The USPSTF members contributed equally to the recommendation statement.

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**Disclaimer:** Recommendations made by the USPSTF are independent of the US government. They should not be construed as an official position of AHRQ or the US Department of Health and Human Services.

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of the manuscript, and Lisa Nicolella, MA (AHRQ), who assisted with coordination and editing.

**Additional Information:** 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. 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. Published by JAMA®—Journal of the American Medical Association under arrangement with the Agency for Healthcare Research and Quality (AHRQ). ©2022 AMA and United States Government, as represented by the Secretary of the Department of Health and Human Services (HHS), by assignment from the members of the United States Preventive Services Task Force (USPSTF). All rights reserved.

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