Guidelines at-a-Glance

A resource by the American Academy of Sleep Medicine

AASM
American Academy of SLEEP MEDICINE™

Guidelines at-a-Glance

Table of Contents

Introduction

Welcome to the American Academy of Sleep Medicine (AASM) Guidelines at-a-Glance e-book.

This e-book is designed to give readers quick access to the current clinical practice recommendations published by the AASM. Each Guideline at-a-Glance includes the complete list of recommendation found in the current AASM Practice Parameter or Clinical Practice Guideline. To access the full text of the guideline, simply follow the link in the references, found in the left-hand margin of each at-a-Glance document.

Several groups will find this guide of interest, including the following:

1. Sleep clinicians, in a variety of settings including solo/small practices, larger multispecialty groups, integrated health care systems, and other arrangements;
2. Practice managers, support personnel, and administrative personnel affiliated with the clinicians;
3. Accredited sleep facilities and sleep-related treating entities (e.g., durable medical equipment (DME) companies); and
4. Health care-related associations, organizations, payers, and regulatory agencies affiliated with the provision of sleep medicine services.

Publication Date: 01/2018. Please refer to https://aasm.org/clinical-resources/practice-standards/practice-guidelines/ for updates. Other publications such as position statements and consensus statements are not included in this compilation.

For more information, please contact us at research@aasm.org.

Guidelines at-a-Glance

ADAPTED FROM

Auger RR, Burgess HJ, Emens JS, Deriy LV, Thomas SM, Sharkey KM. Clinical practice guideline for the treatment of intrinsic circadian rhythm sleep-wake disorders: advanced sleep-wake phase disorder (ASWPD), delayed sleep-wake phase disorder (DSWPD), non-24-hour sleepwake rhythm disorder (N24SWD), and irregular sleep-wake rhythm disorder (ISWRD). An update for 2015. J Clin Sleep Med 2015;11(10):1199 –1236

IMPLICATIONS OF STRONG AND WEAK RECOMMENDATIONS FOR CLINICIAN USERS

Strong Recommendation ***(The Task Force (TF) recommend...)***
Almost all patients should receive the recommended course of action. Adherence to this recommendation could be used as a quality criterion or performance indicator.

Weak Recommendation ***(The Task Force (TF) suggest...)***
Different choices will be appropriate for different patients, and the clinician must help each patient arrive at a management decision consistent with her or his values and preferences.

The ultimate judgment regarding the suitability of any specific recommendation must be made by the clinician.

Clinical Practice Guideline for the Treatment of Intrinsic Circadian Rhythm Sleep-Wake Disorders: Advanced Sleep Wake Phase Disorder (ASWPD), Delayed Sleep-Wake Phase Disorder (DSWPD), Non-24-Hour Sleep-Wake Rhythm Disorder (N24SWD), and Irregular Sleep-Wake Rhythm Disorder (ISWRD). An Update for 2015

RECOMMENDATIONS FOR TREATMENT OF ASWPD

5.1.4a	The TF suggests that clinicians treat adult ASWPD patients with evening light therapy (versus no treatment). [WEAK FOR]	⊕⊖⊖⊖ **B=H**

RECOMMENDATIONS FOR TREATMENT OF DSWPD

5.2.6.1a	The TF suggests that clinicians treat DSWPD in adults with and without depression with strategically timed melatonin (versus no treatment). [WEAK FOR]	⊕⊕⊖⊖ **B?H**
5.2.6.2.1a	The TF suggests that clinicians treat children and adolescents with DSWPD (and no comorbidities) with strategically timed melatonin (versus no treatment). [WEAK FOR]	⊕⊕⊕⊖ **B>H**
5.2.6.2.2a	The TF suggests that clinicians treat children and adolescents with DSWPD comorbid with psychiatric conditions with strategically timed melatonin (versus no treatment). [WEAK FOR]	⊕⊕⊖⊖ **B?H**
5.2.9.2a	The TF suggests that clinicians treat children/adolescents with DSWPD with post awakening light therapy in conjunction with behavioral treatments (versus no treatment). [WEAK FOR]	⊕⊕⊖⊖ **B>H**

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>H Benefits outweigh harms
B=H Benefits approximately equal harms
B?H Uncertainty in the estimates of benefit/harm/burden
H>b Harms outweigh benefits

PATIENT VALUES AND PREFERENCES


Vast majority of patients would use

Majority of patients would use

Majority of patients would not use

Vast majority of patients would not use

RECOMMENDATIONS FOR TREATMENT OF N24SWD

5.3.6.1a	The TF suggests that clinicians use strategically timed melatonin for the treatment of N24SWD in blind adults (versus no treatment). [WEAK FOR]	⊕⊕⊖⊖ **B>H** 

RECOMMENDATIONS FOR TREATMENT OF ISWRD

5.4.4a	The TF suggests that clinicians treat ISWRD in elderly patients with dementia with light therapy (versus no treatment). [WEAK FOR]	⊕⊖⊖⊖ **B=H** 
5.4.5a	The TF recommends that clinicians avoid the use of sleep-promoting medications to treat demented elderly patients with ISWRD (versus no treatment). [STRONG AGAINST]	N/A* **H>b**
5.4.6.1a	The TF suggests that clinicians avoid the use of melatonin as a treatment for ISWRD in older people with dementia (versus no treatment). [WEAK AGAINST]	⊕⊕⊖⊖ **H>b** 
5.4.6.2a	The TF suggests that clinicians use strategically timed melatonin as a treatment for ISWRD in children/adolescents with neurologic disorders (versus no treatment). [WEAK FOR]	⊕⊕⊕⊖ **B>H** 
5.4.9.1a	The TF suggests that clinicians avoid the use of light therapy combined with melatonin in demented, elderly patients with ISWRD (versus no treatment). [WEAK AGAINST]	⊕⊕⊖⊖ **H>b** 

**Although no randomized controlled trials have examined sleep-promoting medications for the treatment of ISWRD, other extant literature indicates that administration of hypnotics to demented elderly patients increases risks of falls and other untoward outcomes.*

ADAPTED FROM

Morgenthaler TI; Lee-Chiong T; Alessi C; Friedman L; Aurora N; Boehlecke B; Brown T; Chesson AL; Kapur V; Maganti R; Owens J; Pancer J; Swick TJ; Zak R; Standards of Practice Committee of the AASM. Practice Parameters for the Clinical Evaluation and Treatment of Circadian Rhythm Sleep Disorders. *SLEEP* 2007;30(11):1445-1459.

Practice Parameters for the Treatment of Exogenous Circadian Rhythm Sleep Disorders

For information on the treatment of intrinsic circadian rhythm sleep-wake disorders (CRSWDs), please refer to the document- *Clinical Practice Guideline for the Treatment of Intrinsic Circadian Rhythm Sleep-Wake Disorders: Advanced Sleep-Wake Phase Disorder (ASWPD), Delayed Sleep-Wake Phase Disorder (DSWPD), Non-24-Hour Sleep-Wake Rhythm Disorder (N24SWD), and Irregular Sleep-Wake Rhythm Disorder (ISWRD). An Update for 2015*

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS FOR TREATING SHIFT WORK DISORDER

3.2.1.1	Both the Morningness-Eveningness Questionnaire (MEQ) and measurement of circadian phase markers (e.g., core body temperature nadir or timing of melatonin secretion) are at present of unproved usefulness in evaluation of patients with suspected SWD.	OPTION
3.2.1.2	Planned napping before or during the night shift is indicated to improve alertness and performance among night shift workers.	STANDARD
3.2.1.3	Timed light exposure in the work environment and light restriction in the morning, when feasible, is indicated to decrease sleepiness and improve alertness during night shift work.	GUIDELINE
3.2.1.4	Administration of melatonin prior to daytime sleep is indicated to promote daytime sleep among night shift workers.	GUIDELINE
3.2.1.5	Hypnotic medications may be used to promote daytime sleep among night shift workers. Carryover of sedation to the nighttime shift with potential adverse consequences for nighttime performance and safety must be considered.	GUIDELINE
3.2.1.6	Modafinil is indicated to enhance alertness during the night shift for SWD.	GUIDELINE
	Caffeine is indicated to enhance alertness during the night shift for SWD	OPTION

RECOMMENDATIONS FOR TREATING JET LAG DISORDER

3.2.2.1	There is insufficient evidence to recommend the routine use of actigraphy, polysomnography, or measurement of circadian phase markers in the evaluation of jet lag disorder.	OPTION
3.2.2.2	When time at destination is expected to be brief (i.e., two days or less), keeping home-based sleep hours, rather than adopting destination sleep hours, may reduce sleepiness and jet lag symptoms.	OPTION
3.2.2.3	The combination of morning exposure to bright light and shifting the sleep schedule one hour earlier each day for three days prior to eastward travel may lessen symptoms of jet lag.	OPTION
3.2.2.4	Melatonin administered at the appropriate time is indicated to reduce symptoms of jet lag and improve sleep following travel across multiple time zones.	STANDARD
3.2.2.5	Short-term use of a benzodiazepine receptor agonist hypnotic is indicated for the treatment of jet lag-induced insomnia, but potential adverse effects must be considered, and effects on daytime symptoms of jet lag disorder have not been adequately addressed.	OPTION
3.2.2.6	Caffeine is indicated as a way to counteract jet lag-induced sleepiness, but may also disrupt nighttime sleep	OPTION

Clinical Practice Guideline for Diagnostic Testing for Adult Obstructive Sleep Apnea: An American Academy of Sleep Medicine Clinical Practice Guideline

ADAPTED FROM

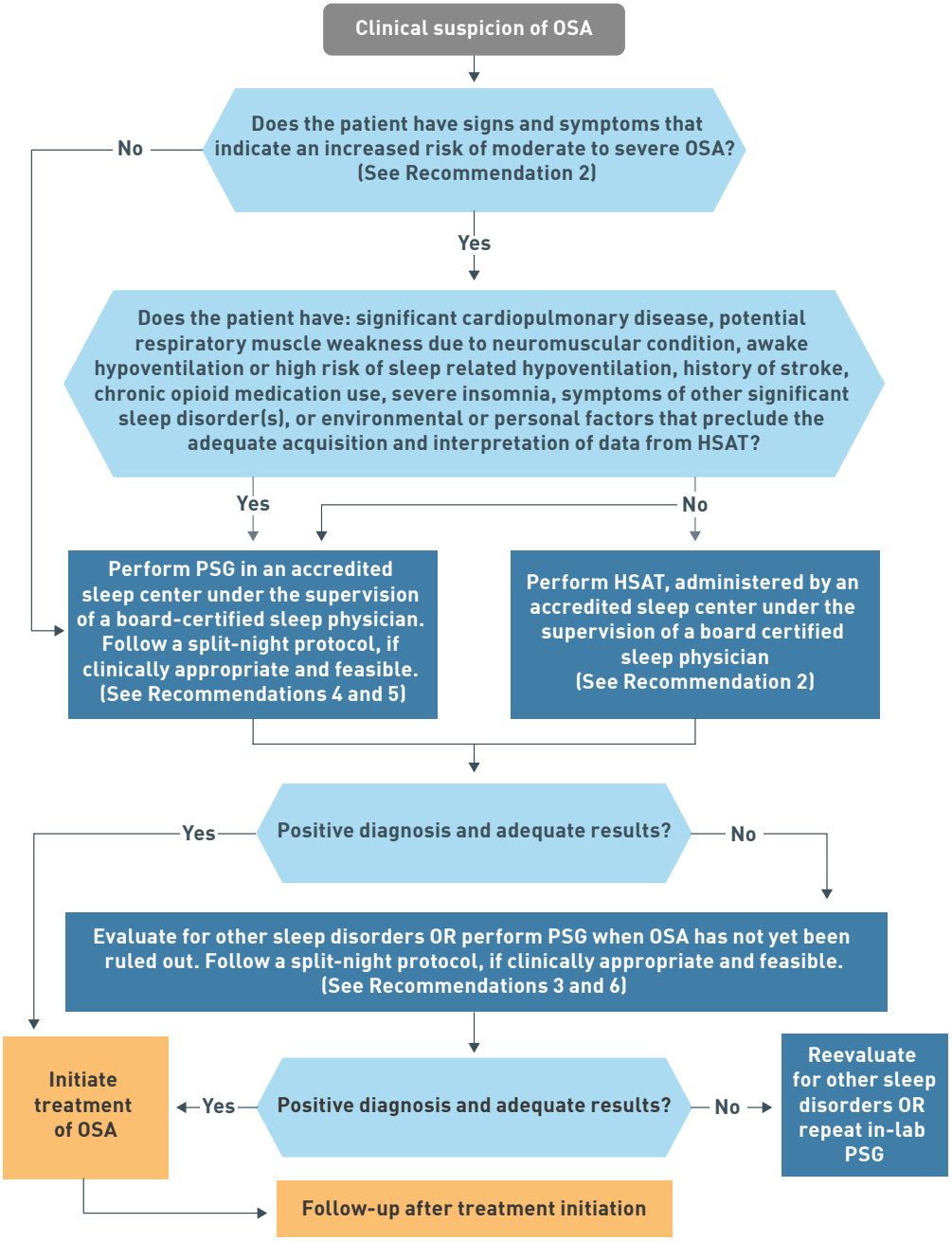
Kapur VK, Auckley DH, Chowdhuri S, Kuhlmann DC, Mehra R, Ramar K, Harrod CG. Clinical practice guideline for diagnostic testing for adult obstructive sleep apnea: an American Academy of Sleep Medicine clinical practice guideline. J Clin Sleep Med. 2017;13(3):479–504.

IMPLICATIONS OF STRONG AND WEAK RECOMMENDATIONS FOR CLINICIAN USERS OF AASM CLINICAL PRACTICE GUIDELINES

Strong Recommendation (We recommend...)
Almost all patients should receive the recommended course of action. Adherence to this recommendation could be used as a quality criterion or performance indicator.

Weak Recommendation (We suggest...)
Different choices will be appropriate for different patients, and the clinician must help each patient arrive at a management decision consistent with her or his values and preferences.

The ultimate judgment regarding the suitability of any specific recommendation must be made by the clinician.



QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
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⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms

B=H Benefits approximately equal harms

H>b Harms outweigh benefits

PATIENT VALUES AND PREFERENCES

 Vast majority of patients would use

 Majority of patients would use

 Majority of patients would not use

 Vast majority of patients would not use

RECOMMENDATIONS FOR THE DIAGNOSIS OF OSA IN ADULTS

1. We recommend that clinical tools, questionnaires or prediction algorithms not be used to diagnose OSA in adults, in the absence of PSG or HSAT. [STRONG]

⊕⊕⊕⊖ **H>b**

2. We recommend that PSG, or HSAT with a technically adequate device, be used for the diagnosis of OSA in uncomplicated adult patients presenting with signs and symptoms that indicate an increased risk of moderate to severe OSA. [STRONG]

⊕⊕⊕⊖ **B>H** 

3. We recommend that if a single HSAT is negative, inconclusive or technically inadequate, PSG be performed for the diagnosis of OSA. [STRONG]

⊕⊕⊖⊖ **B>H** 

4. We recommend that PSG, rather than HSAT, be used for the diagnosis of OSA in patients with significant cardiorespiratory disease, potential respiratory muscle weakness due to neuromuscular condition, awake hypoventilation or suspicion of sleep related hypoventilation, chronic opioid medication use, history of stroke or severe insomnia. [STRONG]

⊕⊖⊖⊖ **B>H** 

5. We suggest that, if clinically appropriate, a split-night diagnostic protocol, rather than a full-night diagnostic protocol for PSG be used for the diagnosis of OSA. [WEAK]

⊕⊕⊖⊖ **B>H** 

6. We suggest that when the initial PSG is negative, and there is still clinical suspicion for OSA, a second PSG be considered for the diagnosis of OSA. [WEAK]

⊕⊖⊖⊖ **B>H** 

ADAPTED FROM

Smith MT, McCrae CS, Cheung J, Martin JL, Harrod CG, Heald JL, Carden KA. Use of actigraphy for the evaluation of sleep disorders and circadian rhythm sleep-wake disorders: an American Academy of Sleep Medicine clinical practice guideline. J Clin Sleep Med. 2018;14(7): 1231-1237.

Use of Actigraphy for the Evaluation of Sleep Disorders and Circadian Rhythm Sleep-Wake Disorders: An American Academy of Sleep Medicine Clinical Practice Guideline

IMPLICATIONS OF STRONG AND CONDITIONAL RECOMMENDATIONS FOR USERS OF AASM CLINICAL PRACTICE GUIDELINES

USER	STRONG RECOMMENDATION	CONDITIONAL RECOMMENDATION
CLINICIANS	Almost all patients should receive the recommended course of action. Adherence to this recommendation could be used as a quality criterion or performance indicator.	Most patients should receive the suggested course of action, however, different choices may be appropriate for different patients. The clinician must help each patient determine if the suggested course of action is clinically appropriate and consistent with his or her values and preferences.
PATIENTS	Almost all patients should receive the recommended course of action, although a small proportion of patients would not.	Most patients should receive the suggested course of action, though some would not. Different choices may be appropriate for different patients. The patient should work with their clinician to determine if the suggested course of action is clinically appropriate and consistent with his or her values and preferences.
INSURANCE PROVIDER	The recommended course of action can be adapted as policy for most situations. Adherence to the recommended course of action could be used as a quality criterion or performance indicator.	The ultimate judgment regarding the suitability of the suggested course of action must be made by the clinician and patient together, based on what is best for the patient. This decision-making flexibility should be accounted for when establishing policies.

RECOMMENDATIONS FOR THE USE OF ACTIGRAPHY

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms
B=H Benefits approximately equal harms
H>b Harms outweigh benefits

PATIENT VALUES AND PREFERENCES


Vast majority of patients would use

Majority of patients would use

Majority of patients would not use

Vast majority of patients would not use

1.	We suggest that clinicians use actigraphy to estimate sleep parameters in adult patients with insomnia disorder. (Conditional)	⊕⊕⊕⊖ **B>h** 
2.	We suggest that clinicians use actigraphy in the assessment of pediatric patients with insomnia disorder. (Conditional)	⊕⊕⊕⊖ **B>h** 
3.	We suggest that clinicians use actigraphy in the assessment of adult patients with circadian-rhythm sleep-wake disorder. (Conditional)	⊕⊖⊖⊖ **B>h** 
4.	We suggest that clinicians use actigraphy in the assessment of pediatric patients with circadian-rhythm sleep-wake disorder. (Conditional)	⊕⊕⊖⊖ **B>h** 
5.	We suggest that clinicians use aactigraphy integrated with home sleep apnea test devices to estimate total sleep time during recording (in the absence of alternative objective measurements of total sleep time) in adult patients suspected of sleep-disordered breathing. (Conditional)	⊕⊕⊖⊖ **B>h** 
6.	We suggest that clinicians use actigraphy to monitor total sleep time prior to testing with the Multiple Sleep Latency Test in adult and pediatric patients with suspected central disorders of hypersomnolence. (Conditional)	⊕⊕⊕⊖ **B>h** 
7.	We suggest that clinicians use actigraphy to estimate total sleep time in adult patients with suspected insufficient sleep syndrome. (Conditional)	⊕⊕⊕⊖ **B>h** 
8.	We recommend that clinicians ***not*** use actigraphy in place of electromyography for the diagnosis of periodic limb movement disorder in adult and pediatric patients. (Strong)	⊕⊕⊕⊖ **H>b**

ADAPTED FROM

Standards of Practice Committee of the American Academy of Sleep Medicine. Practice parameters for clinical use of the multiple sleep latency test and the maintenance of wakefulness test. *SLEEP* 2005;28(1):113-121.

Practice Parameters for the Clinical Use of the Multiple Sleep Latency Test and the Maintenance of Wakefulness Test

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

GENERAL RECOMMENDATIONS

1	The MSLT is a validated objective measure of the ability or tendency to fall asleep.	STANDARD
2	The MWT is a validated objective measure of the ability to stay awake for a defined time.	STANDARD
3	The MWT is used in association with the clinical history to assess the ability to maintain wakefulness.	STANDARD
4	The MWT 40-minute protocol is recommended when the sleep clinician requires objective data to assess an individual's ability to remain awake.	OPTION
5	To provide a valid assessment of sleepiness or wakefulness the MSLT and MWT must be performed under appropriate conditions using proper recording techniques and accepted protocols, with interpretation by a qualified and experienced clinician.	STANDARD

SPECIFIC INDICATIONS FOR THE USE OF MULTIPLE SLEEP LATENCY TEST(MSLT)

1	The MSLT is indicated as part of the evaluation of patients with suspected narcolepsy to confirm the diagnosis.	STANDARD
2	The MSLT may be indicated as part of the evaluation of patients with suspected idiopathic hypersomnia to help differentiate idiopathic hypersomnia from narcolepsy.	OPTION
3	The MSLT is not routinely indicated in the initial evaluation and diagnosis of obstructive sleep apnea syndrome or in assessment of change following treatment with nasal CPAP.	
4	The MSLT is not routinely indicated for evaluation of sleepiness in medical and neurological disorders (other than narcolepsy), insomnia, or circadian rhythm disorders.	OPTION
5	Repeat MSLT testing may be indicated in the following situations: (a) when the initial test is affected by extraneous circumstances or when appropriate study conditions were not present during initial testing, (b) when ambiguous or uninterpretable findings are present, (c) when the patient is suspected to have narcolepsy but earlier MSLT evaluation(s) did not provide polygraphic confirmation.	STANDARD

SPECIFIC INDICATIONS FOR THE USE OF MAINTENANCE OF WAKEFULNESS TEST (MWT)

1	The MWT 40-minute protocol may be used to assess an individual's ability to remain awake when his or her inability to remain awake constitutes a public or personal safety issue.	OPTION
2	The MWT may be indicated in patients with excessive sleepiness to assess response to treatment.	GUIDELINE

RECOMMENDATIONS FOR THE MSLT PROTOCOL

1. The MSLT consists of five nap opportunities performed at two hour intervals. The initial nap opportunity begins 1.5 to 3 hours after termination of the nocturnal recording. A shorter four-nap test may be performed but this test is not reliable for the diagnosis of narcolepsy unless at least two sleep onset REM periods have occurred.
2. The MSLT must be performed immediately following polysomnography recorded during the individual's major sleep period. The use of MSLT to support a diagnosis of narcolepsy is suspect if TST on the prior night sleep is less than 6 hours. The test should not be performed after a split night sleep study (combination of diagnostic and therapeutic studies in a single night).
3. Sleep logs may be obtained for 1 week prior to the MSLT to assess sleep-wake schedules.
4. Standardization of test conditions is critical for obtaining valid results. Sleep rooms should be dark and quiet during testing. Room temperature should be set based on the patient's comfort level.
5. Stimulants, stimulant-like medications, and REM suppressing medications should ideally be stopped 2 weeks before MSLT. Use of the patient's other usual medications (e.g., antihypertensives, insulin, etc.) should be thoughtfully planned by the sleep clinician before MSLT testing so that undesired influences by the stimulating or sedating properties of the medications are minimized. Drug screening may be indicated to ensure that sleepiness on the MSLT is not pharmacologically induced. Drug screening is usually performed on the morning of the MSLT, but its timing and the circumstances of the testing may be modified by the clinician. Smoking should be stopped at least 30 minutes prior to each nap opportunity. Vigorous physical activity should be avoided during the day and any stimulating activities by the patient should end at least 15 minutes prior to each nap opportunity. The patient must abstain from any caffeinated beverages and avoid unusual exposures to bright sunlight. A light breakfast is recommended at least 1 hour prior to the first trial, and a light lunch is recommended immediately after the termination of the second noon trial.
6. Sleep technologists who perform MSLTs should be experienced in conducting the test.
7. The conventional recording montage for the MSLT includes central EEG (C3-A2, C4-A1) and occipital (O1-A2, O2-A1) derivations, left and right eye electrooculograms (EOGs), mental/submental electromyogram (EMG), and electrocardiogram (EKG).
8. Prior to each nap opportunity, the patient should be asked if they need to go to the bathroom or need other adjustments for comfort. Standard instructions for bio-calibrations (i.e., patient calibrations) prior to each nap include: (1) lie quietly with your eyes open for 30 seconds, (2) close both eyes for 30 seconds, (3) without moving your head, look to the right, then left, then right, then left, right and then left, (4) blink eyes slowly for 5 times, and (5) clench or grit your teeth tightly together.
9. With each nap opportunity the subject should be instructed as follows: "Please lie quietly, assume a comfortable position, keep your eyes closed and try to fall asleep." The same instructions should be given prior to every test. Immediately after these instructions are given, bedroom lights are turned off, signaling the start of the test. Between naps, the patient should be out of bed and prevented from sleeping. This generally requires continuous observation by a laboratory staff member.
10. Sleep onset for the clinical MSLT is determined by the time from lights out to the first epoch of any stage of sleep, including stage 1 sleep. Sleep onset is defined as the first epoch of greater than 15 sec of cumulative sleep in a 30-sec epoch. The absence of sleep on a nap opportunity is recorded as a sleep latency of 20 minutes. This latency is included in the calculation of mean sleep latency (MSL). In order to assess for the occurrence of REM sleep, in the clinical MSLT the test continues for 15 minutes from after the first epoch of sleep. The duration of 15 minutes is determined by "clock time", and is not determined by a sleep time of 15 minutes. REM latency is taken as the time of the first epoch of sleep to the beginning of the first epoch of REM sleep regardless of the intervening stages of sleep or wakefulness.
11. A nap session is terminated after 20 minutes if sleep does not occur. 12. The MSLT report should include the start and end times of each nap or nap opportunity, latency from lights out to the first epoch of sleep, mean sleep latency (arithmetic mean of all naps or nap opportunities), and number of sleep-onset REM periods (defined as greater than 15 sec of REM sleep in a 30-sec epoch). 13. Events that represent deviation from standard protocol or conditions should be documented by the sleep technologist for review by the interpreting sleep clinician.
12. The MSLT report should include the start and end times of each nap or nap opportunity, latency from lights out to the first epoch of sleep, mean sleep latency (arithmetic mean of all naps or nap opportunities), and number of sleep-onset REM periods (defined as greater than 15 sec of REM sleep in a 30-sec epoch).
13. Events that represent deviation from standard protocol or conditions should be documented by the sleep technologist for review by the interpreting sleep clinician.

ADAPTED FROM:

Association of Professional Sleep Societies, APSS Guidelines Committee: Carskadon MA, Dement WC, Mitler MM, Roth T, Westbrook PR, Keenan S. Guidelines for the Multiple Sleep Latency Test (MSLT): a standard measure of sleepiness. *SLEEP* 1986; 9:519-524

Modified by collective expert opinion using Rand/UCLA Appropriateness Method

RECOMMENDATIONS FOR THE MWT PROTOCOL

1. The 4-trial MWT 40-minute protocol is recommended. The MWT consists of four trials performed at two hour intervals, with the first trial beginning about 1.5 to 3 hours after the patient's usual wake-up time. This usually equates to a first trial starting at 0900 or 1000 hours.
2. Performance of a PSG prior to MWT should be decided by the clinician based on clinical circumstances.
3. Based on the Rand/UCLA Appropriateness Method, no consensus was reached regarding the use of sleep logs prior to the MWT; there are instances, based on clinical judgment, when they may be indicated.
4. The room should be maximally insulated from external light. The light source should be positioned slightly behind the subject's head such that it is just out of his/her field of vision, and should deliver an illuminance of 0.10-0.13 lux at the corneal level (a 7.5 W night light can be used, placed 1 foot off the floor and 3 feet laterally removed from the subject's head). Room temperature should be set based on the patient's comfort level. The subject should be seated in bed, with the back and head supported by a bedrest (bolster pillow) such that the neck is not uncomfortably flexed or extended.
5. The use of tobacco, caffeine and other medications by the patient before and during MWT should be addressed and decided upon by the sleep clinician before MWT. Drug screening may be indicated to ensure that sleepiness/wakefulness on the MWT is not influenced by substances other than medically prescribed drugs. Drug screening is usually performed on the morning of the MWT but its timing and the circumstances of the testing may be modified by the clinician. A light breakfast is recommended at least 1 hour prior to the first trial, and a light lunch is recommended immediately after the termination of the secondnoon trial.
6. Sleep technologists who perform the MWT should be experienced in conducting the test.
7. The conventional recording montage for the MWT includes central EEG (C3-A2, C4-A1) and occipital (O1-A2, O2-A1) derivations, left and right eye electrooculograms (EOGs), mental/submental electromyogram (EMG), and electrocardiogram (EKG).
8. Prior to each trial, the patient should be asked if they need to go to the bathroom or need other adjustments for comfort. Standard instructions for bio-calibrations (i.e., patient calibrations) prior to each trial include: (1) sitlie quietly with your eyes open for 30 seconds, (2) close both eyes for 30 seconds, (3) without moving your head, look to the right, then left, then right, then left, right and then left, (4) blink eyes slowly for 5 times, and (5) clench or grit your teeth tightly together.
9. Instructions to the patient consist of the following: "Please sit still and remain awake for as long as possible. Look directly ahead of you, and do not look directly at the light." Patients are not allowed to use extraordinary measures to stay awake such as slapping the face or singing.
10. Sleep onset is defined as the first epoch of greater than 15 sec of cumulative sleep in a 30-sec epoch.
11. Trials are ended after 40 minutes if no sleep occurs, or after unequivocal sleep, defined as three consecutive epochs of stage 1 sleep, or one epoch of any other stage of sleep.
12. The following data should be recorded: start and stop times for each trial, sleep latency, total sleep time, stages of sleep achieved for each trial, and the mean sleep latency (the arithmetic mean of the four trials). 13. Events that represent deviation from standard protocol or conditions should be documented by the sleep technologist for review by the sleep specialist.

ADAPTED FROM:

Doghramji K, Mitler M, Sangal RB, Shapiro C, Taylor S, Walsleben J, Belisle C, Erman MK, Hayduk R, Hosn R, O'Malley EB, Sangal JM, Schutte SL, Youakim JM. A normative study of the maintenance of wakefulness test (MWT). Electroencephal Clin Neurophysiol 1997;103:554-562.

Modified by collective expert opinion using Rand/UCLA Appropriateness Method

ADAPTED FROM

Morgenthaler TI; Kapur VK; Brown TM; Swick TJ; Alessi C; Aurora RN; Boehlecke B; Chesson AL; Friedman L; Maganti R; Owens J; Pancer J; Zak R; Standards of Practice Committee of the AASM. Practice parameters for the treatment of narcolepsy and other hypersomnias of central origin. *SLEEP* 2007;30(12):1705-1711

Practice Parameters for the Treatment of Narcolepsy and other Hypersomnias of Central Origin

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
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OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

GENERAL RECOMMENDATIONS

1	An accurate diagnosis of a specific hypersomnia disorder of central origin should be established. The evaluation should include a thorough evaluation of other possible contributing causes of excessive daytime sleepiness.	STANDARD
2	Treatment objectives should include control of sleepiness and other sleep related symptoms when present.	STANDARD

RECOMMENDATIONS FOR TREATING NARCOLEPSY

3a	Modafinil is effective for treatment of daytime sleepiness due to narcolepsy	STANDARD
3b	Sodium oxybate is effective for treatment of cataplexy, daytime sleepiness, and disrupted sleep due to narcolepsy	STANDARD
	Sodium oxybate may be effective for treatment of hypnagogic hallucinations and sleep paralysis	OPTION
3c	Amphetamine, methamphetamine, dextroamphetamine, and methylphenidate are effective for treatment of daytime sleepiness due to narcolepsy	GUIDELINE
3d	Selegiline may be an effective treatment for cataplexy and daytime sleepiness.	OPTION
3e	Ritanserin may be effective treatment of daytime sleepiness due to narcolepsy	OPTION

RECOMMENDATIONS FOR TREATING NARCOLEPSY (CONTINUED)

3g	Pemoline has rare but potentially lethal liver toxicity, is no longer available in the United States, and is no longer recommended for treatment of narcolepsy	OPTION
3h	Tricyclic antidepressants, selective serotonin reuptake inhibitors (SSRIs), venlafaxine, and reboxetine may be effective treatment for cataplexy	GUIDELINE
3i	Tricyclic antidepressants, selective serotonin reuptake inhibitors (SSRIs), and venlafaxine may be effective treatment for treatment of sleep paralysis and hypnagogic hallucinations.	OPTION

RECOMMENDATIONS FOR TREATING IDIOPATHIC HYPERSOMNIA

4	Modafinil may be effective for treatment of daytime sleepiness due to idiopathic hypersomnia.	OPTION
7	The following medications may be effective for treatment of daytime sleepiness in idiopathic hypersomnia (with and without long sleep time), recurrent hypersomnia, and hypersomnia due to a medical condition: amphetamine, methamphetamine, dextroamphetamine, methylphenidate, and modafinil.	OPTION

RECOMMENDATIONS FOR TREATING SPECIFIC TYPES OF HYPERSOMNIAS DUE TO A MEDICAL CONDITION

5a	Modafinil may be effective for treatment of daytime sleepiness due to Parkinson's disease.	OPTION
5b	Modafinil may be effective for treatment of daytime sleepiness due to myotonic dystrophy.	OPTION
5c	Methylphenidate may be effective for treatment of daytime sleepiness due to myotonic dystrophy.	OPTION
5d	Modafinil may be effective for treatment of daytime sleepiness due to multiple sclerosis	GUIDELINE
7	The following medications may be effective for treatment of daytime sleepiness in idiopathic hypersomnia (with and without long sleep time), recurrent hypersomnia, and hypersomnia due to a medical condition: amphetamine, methamphetamine, dextroamphetamine, methylphenidate, and modafinil.	OPTION

RECOMMENDATIONS FOR TREATING RECURRENT HYPERSOMNIA AND BEHAVIORAL SYMPTOMS DUE TO KLEINE-LEVIN SYNDROME

6	Lithium carbonate may be effective for treatment of recurrent hypersomnia and behavioral symptoms due to Kleine-Levin syndrome.	OPTION

RECOMMENDATIONS FOR TREATING HYPERSOMNIAS OF CENTRAL ORIGIN

8a	Combinations of long- and short-acting forms of stimulants may be indicated and effective for some patients.	OPTION
8b	Treatment of hypersomnias of central origin with methylphenidate or modafinil in children between the ages of 6 and 15 appears to be relatively safe.	OPTION
8c	Regular follow-up of patients with hypersomnia of central origin is necessary to monitor response to treatment, to respond to potential side effects of medications, and to enhance the patient's adaptation to the disorder	STANDARD

RECOMMENDATIONS FOR RECURRING HYPERSOMNIA

7	The following medications may be effective for treatment of daytime sleepiness in idiopathic hypersomnia (with and without long sleep time), recurrent hypersomnia, and hypersomnia due to a medical condition: amphetamine, methamphetamine, dextroamphetamine, methylphenidate, and modafinil.	OPTION

American Academy of SLEEP MEDICINE™

ADAPTED FROM

Sateia MJ, Buysse DJ, Krystal AD, Neubauer DN, Heald JL. Clinical practice guideline for the pharmacologic treatment of chronic insomnia in adults: an American Academy of Sleep Medicine clinical practice guideline. J Clin Sleep Med. 2017;13(2):307–349.

IMPLICATIONS OF STRONG AND WEAK RECOMMENDATIONS FOR CLINICIAN USERS OF AASM CLINICAL PRACTICE GUIDELINES

Strong Recommendation (We recommend...)
Almost all patients should receive the recommended course of action. Adherence to this recommendation could be used as a quality criterion or performance indicator.

Weak Recommendation (We suggest...)
Different choices will be appropriate for different patients, and the clinician must help each patient arrive at a management decision consistent with her or his values and preferences.

The ultimate judgment regarding the suitability of any specific recommendation must be made by the clinician.

Clinical Practice Guideline for the Pharmacologic Treatment of Chronic Insomnia in Adults: An American Academy of Sleep Medicine Clinical Practice Guideline

RECOMMENDED FOR TREATING SLEEP ONSET INSOMNIA

ESZOPICLONE

We suggest that clinicians use eszopiclone as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

- **Sleep Latency:** Mean reduction was 14 minutes greater, compared to placebo (95% CI: 3 to 24 minute reduction)
- **Quality of Sleep:** Moderate-to-Large[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 2 mg and 3 mg doses of eszopiclone.

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B>H

RAMELTEON

We suggest that clinicians use ramelteon as a treatment for sleep onset insomnia (versus no treatment) in adults. (Weak)

- **Sleep Latency**: Mean reduction was 9 minutes greater, compared to placebo (95% CI: 6 to 12 minute reduction)
- **Quality of Sleep:** No improvement[2] in quality of sleep, compared to placebo*

This recommendation is based on trials of 8 mg doses of ramelteon.

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TEMAZEPAM

We suggest that clinicians use temazepam as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

- **Sleep Latency:** Mean reduction was 37 minutes greater, compared to placebo (95% CI: 21 to 53 minute reduction)
- **Quality of Sleep:** Small[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 15 mg doses of temazepam.

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TRIAZOLAM

We suggest that clinicians use triazolam as a treatment for sleep onset insomnia (versus no treatment) in adults. (Weak)

- **Sleep Latency**: Mean reduction was 9 minutes greater, compared to placebo (95% CI: 4 to 22 minute reduction)*
- **Quality of Sleep:** Moderate[3] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 0.25 mg doses of triazolam

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QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms

B=H Benefits approximately equal harms

H>b Harms outweigh benefits

PATIENT VALUES AND PREFERENCES

 Vast majority of patients would use

 Majority of patients would use

 Majority of patients would not use

 Vast majority of patients would not use

*Based on subjective reporting

[1] Based on Cohen d: 0.2 = small effect, 0.5 = moderate effect, 0.8 = large effect

[2] Based on a 7-point Likert scale (1 = excellent, 7 = very poor)

[3] Based on a 4-point scale (1 = good, 4 = poor)

RECOMMENDED FOR TREATING SLEEP ONSET INSOMNIA (CONTINUED)

ZALEPLON

We suggest that clinicians use zaleplon as a treatment for sleep onset insomnia (versus no treatment) in adults. (Weak)

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- **Sleep Latency:** Mean reduction was 10 minutes greater, compared to placebo (95% CI: 0 to 19 minute reduction)
- **Quality of Sleep:** No improvement[2] in quality of sleep, compared to placebo*

This recommendation is based on trials of 5 mg and 10 mg doses of zaleplon.

ZOLPIDEM

We suggest that clinicians use zolpidem as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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- **Sleep Latency**: Mean reduction was 5–12 minutes greater, compared to placebo (95% CI: 0 to 19 minute reduction)
- **Quality of Sleep**: Moderate[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 10 mg doses of zolpidem.

RECOMMENDED FOR TREATING SLEEP MAINTENANCE INSOMNIA

DOXEPIN

We suggest that clinicians use doxepin as a treatment for sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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- **Total Sleep Time:** Mean improvement was 26–32 minutes longer, compared to placebo (95% CI: 18 to 40 minute improvement)
- **Wake After Sleep Onset:** Mean reduction was 22–23 minutes greater, compared to placebo (95% CI: 14 to 30 minute reduction)
- **Quality of Sleep:** Small-to-Moderate[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 3 mg and 6 mg doses of doxepin.

ESZOPICLONE

We suggest that clinicians use eszopiclone as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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- **Total Sleep Time:** Mean improvement was 28–57 minutes longer, compared to placebo (95% CI: 18 to 76 minute improvement)
- **Wake After Sleep Onset:** Mean reduction was 10–14 minutes greater, compared to placebo (95% CI: 2 to 18 minute reduction)
- **Quality of Sleep:** Moderate-to-Large[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 2 mg and 3 mg doses of eszopiclone.

RECOMMENDED FOR TREATING SLEEP MAINTENANCE INSOMNIA (CONTINUED)

TEMAZEPAM

We suggest that clinicians use temazepam as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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- **Total Sleep Time:** Mean improvement was 99 minutes longer, compared to placebo (95% CI: 63 to 135 minute improvement)
- **Wake After Sleep Onset:** Not reported
- **Quality of Sleep:** Small[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 15 mg doses of temazepam.

SUVOREXANT

We suggest that clinicians use suvorexant as a treatment for sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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- **Total Sleep Time:** Mean improvement was 10 minutes longer, compared to placebo (95% CI: 2 to 19 minute improvement)
- **Wake After Sleep Onset:** Mean reduction was 16–28 minutes greater, compared to placebo (95% CI: 7 to 43 minute reduction)
- **Quality of Sleep:** Not reported*

This recommendation is based on trials of 10, 15/20, and 20 mg doses of suvorexant.

ZOLPIDEM

We suggest that clinicians use zolpidem as a treatment for sleep onset and sleep maintenance insomnia (versus no treatment) in adults. (Weak)

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B>H

- **Total Sleep Time:** Mean improvement was 29 minutes longer, compared to placebo (95% CI: 11 to 47 minute improvement)
- **Wake After Sleep Onset:** Mean reduction was 25 minutes greater, compared to placebo (95% CI: 18 to 33 minute reduction)
- **Quality of Sleep:** Moderate[1] improvement in quality of sleep, compared to placebo*

This recommendation is based on trials of 10 mg doses of zolpidem.

NOT RECOMMENDED FOR TREATING INSOMNIA

We suggest that clinicians not use the following drugs for the treatment of sleep onset or sleep maintenance insomnia (versus no treatment) in adults: Diphenhydramine, Melatonin, Tiagabine, Trazodone, L-tryptophan, Valerian. (Weak)

ADAPTED FROM

Morgenthaler T; Kramer M; Alessi C et al. Practice parameters for the psychological and behavioral treatment of insomnia: an update. An American Academy of Sleep Medicine report. *SLEEP* 2006;29(11): 1415-1419.

Practice Parameters for the Psychological and Behavioral Treatment of Insomnia

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS ACCORDING TO TYPE OF INSOMNIA

3.1	Psychological and behavioral interventions are effective and recommended in the treatment of chronic primary insomnia.	STANDARD
3.2	Psychological and behavioral interventions are effective and recommended in the treatment of secondary insomnia.	STANDARD

RECOMMENDATIONS FOR SPECIFIC THERAPIES

3.3	Stimulus control therapy is effective and recommended therapy in the treatment of chronic insomnia	STANDARD
3.4	Relaxation training is effective and recommended therapy in the treatment of chronic insomnia.	STANDARD
3.5	Sleep restriction is effective and recommended therapy in the treatment of chronic insomnia.	GUIDELINE
3.6	Cognitive behavior therapy, with or without relaxation therapy, is effective and recommended therapy in the treatment of chronic insomnia.	STANDARD
3.7	Multicomponent therapy (without cognitive therapy) is effective and recommended therapy in the treatment of chronic insomnia.	GUIDELINE
3.8	Paradoxical intention is effective and recommended therapy in the treatment of chronic insomnia	GUIDELINE
3.9	Biofeedback is effective and recommended therapy in the treatment of chronic insomnia.	GUIDELINE

RECOMMENDATIONS FOR SPECIFIC THERAPIES (CONTINUED)

3.10	Insufficient evidence was available for sleep hygiene education to be an option as a single therapy. Whether this therapy is effective when added to other specific approaches could not be determined from the available data.	No recommendation level
3.11	Insufficient evidence was available for imagery training to be an option as a single therapy. Whether this therapy is effective when added to other specific approaches could not be determined from the available data	No recommendation level
3.12	Insufficient evidence was available for cognitive therapy to be recommended as a single therapy.	No recommendation level
3.13	Insufficient evidence was available to recommend one single therapy over another, or to recommend single therapy versus a combination of psychological and behavioral interventions.	No recommendation level

RECOMMENDATIONS RELEVANT TO SPECIFIC PATIENT GROUPS

3.14	Psychological and behavioral interventions are effective and recommended in the treatment of insomnia in older adults.	STANDARD
3.15	Psychological and behavioral interventions are effective and recommended in the treatment of insomnia among chronic hypnotic users.	STANDARD

ADAPTED FROM

Aurora RN; Zak RS; Karippot A; Lamm CI; Morgenthaler TI; Auerbach SH; Bista SR; Casey KR; Chowdhuri S; Kristo DA; Ramar K. Practice parameters for the respiratory indications for polysomnography in children. *SLEEP* 2011;34(3):379-388.

Practice Parameters for the Respiratory Indications for Polysomnography in Children

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS FOR METHODOLOGY

3.1.1	Polysomnography in children should be performed and interpreted in accordance with the recommendations of the AASM Manual for the Scoring of Sleep and Associated Events.	STANDARD

RECOMMENDATIONS FOR DIAGNOSTIC INDICATIONS FOR POLYSOMNOGRAPHY IN SLEEP RELATED BREATHING

3.2.1	Polysomnography is indicated when the clinical assessment suggests the diagnosis of obstructive sleep apnea syndrome in children.	STANDARD
3.2.2	Polysomnography is indicated when the clinical assessment suggests the diagnosis of congenital central alveolar hypoventilation syndrome or sleep related hypoventilation due to neuromuscular disorders or chest wall deformities. It is indicated in selected cases of primary sleep apnea of infancy.	GUIDELINE
3.2.3	Nap (abbreviated) polysomnography is not recommended for the evaluation of obstructive sleep apnea syndrome in children.	GUIDELINE
3.2.4	Polysomnography is indicated when there is clinical evidence of a sleep related breathing disorder in infants who have experienced an apparent life-threatening event (ALTE).	GUIDELINE

RECOMMENDATIONS FOR INDICATIONS FOR PREOPERATIVE POLYSOMNOGRAPHY

3.3.1	Polysomnography is indicated in children being considered for adenotonsillectomy to treat obstructive sleep apnea syndrome.	GUIDELINE

RECOMMENDATIONS FOR INDICATIONS FOR POLYSOMNOGRAPHY TO ASSESS REPONSE TO TREATMENT

3.4.1	Children with mild obstructive sleep apnea syndrome preoperatively should have clinical evaluation following adenotonsillectomy to assess for residual symptoms. If there are residual symptoms of obstructive sleep apnea syndrome, polysomnography should be performed.	STANDARD
3.4.2	Polysomnography is indicated following adenotonsillectomy to assess for residual sleep related breathing disorder in children with preoperative evidence for moderate to severe OSAS, obesity, craniofacial anomalies that obstruct the upper airway, and neurologic disorders (e.g., Down syndrome, Prader-Willi syndrome, and myelomeningocele).	STANDARD
3.4.3	Polysomnography is indicated after treatment of children for obstructive sleep apnea syndrome with rapid maxillary expansion to assess for the level of residual disease and to determine whether additional treatment is necessary.	OPTION
3.4.4	Children with OSAS treated with an oral appliance should have clinical follow-up and polysomnography to assess response to treatment.	OPTION
3.4.5	Polysomnography is indicated for positive airway pressure (PAP) titration in children with obstructive sleep apnea syndrome	STANDARD
3.4.6	Polysomnography is indicated for noninvasive positive pressure ventilation (NIPPV) titration in children with other sleep related breathing disorders.	OPTION
3.4.7	Follow-up PSG in children on chronic PAP support is indicated to determine whether pressure requirements have changed as a result of the child's growth and development, if symptoms recur while on PAP, or if additional or alternate treatment is instituted.	GUIDELINE
3.4.8	Children treated with mechanical ventilation may benefit from periodic evaluation with polysomnography to adjust ventilator settings.	OPTION
3.4.9	Children considered for treatment with supplemental oxygen do not routinely require polysomnography for management of oxygen therapy.	OPTION
3.4.10	Children treated with tracheostomy for sleep related breathing disorders benefit from polysomnography as part of the evaluation prior to decannulation. These children should be followed clinically after decannulation to assess for recurrence of symptoms of sleep related breathing disorders.	OPTION

RECOMMENDATIONS FOR METHODOLOGY

3.5.1	Polysomnography is indicated in the following respiratory disorders only if there is a clinical suspicion for an accompanying sleep related breathing disorder: chronic asthma, cystic fibrosis, pulmonary hypertension, bronchopulmonary dysplasia, or chest wall abnormality such as kyphoscoliosis	OPTION

ADAPTED FROM

Aurora RN; Lamm CI; Zak RS; Kristo DA; Bista SR; Rowley JA; Casey KR. Practice parameters for the non-respiratory indications for polysomnography and multiple sleep latency testing for children. *SLEEP* 2012;35(11):1467-1473.

Practice Parameters for the Non-Respiratory Indications for Polysomnography and Multiple Sleep Latency Testing for Children

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

HYPERSOMNIA

3.1.1	The MSLT, preceded by nocturnal PSG, is indicated in children as part of the evaluation for suspected narcolepsy.	STANDARD
3.1.2	The MSLT, preceded by nocturnal PSG, is indicated in children suspected of having hypersomnia from causes other than narcolepsy to assess excessive sleepiness and to aid in differentiation from narcolepsy	OPTION

PARASOMNIA

3.2.1	The polysomnogram using an expanded EEG montage is indicated in children to confirm the diagnosis of an atypical or potentially injurious parasomnia or differentiate a parasomnia from sleep-related epilepsy when the initial clinical evaluation and standard EEG are inconclusive.	OPTION
3.2.2	Children with frequent NREM parasomnias, epilepsy, or nocturnal enuresis should be clinically screened for the presence of comorbid sleep disorders, and polysomnography should be performed if there is a suspicion for sleep-disordered breathing or periodic limb movement disorder.	GUIDELINE

SLEEP RELATED MOVEMENT DISORDERS

3.3.1	Polysomnography is indicated in children suspected of having RLS who require supportive data for diagnosing RLS.	OPTION
3.3.2	PSG is indicated for children suspected of having PLMD for diagnosing PLMD.	STANDARD
3.3.3	Polysomnography is not routinely indicated for evaluation of children with sleep-related bruxism.	STANDARD

ADAPTED FROM

Morgenthaler TI, Owens J, Alessi C et al. Practice parameters for behavioral treatment of bedtime problems and night wakings in infants and young children. *SLEEP* 2006;29(10):1277-1281.

Practice Parameters for Behavioral Treatment of Bedtime Problems and Night Wakings in Infants and Young Children

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

TREATMENT TERMINOLOGY

TERM	DEFINITION
Unmodified extinction	Involves parents putting the child to bed at a designated bedtime and then ignoring the child until morning, although parents continue to monitor for issues such as safety and illness. The objective is to reduce undesired behaviors (e.g., crying, screaming) by eliminating parental attention as a reinforcer.
Graduated extinction	Involves parents ignoring bedtime crying and tantrums for pre-determined periods before briefly checking on the child. A progressive (graduated) checking schedule (e.g., 5 min., then 10 min.) or fixed checking schedule (e.g., every 5 minutes) may be used. Like Unmodified extinction, the goal is to enable a child to develop "self-soothing" skills and be able to fall asleep independently without undesirable sleep associations.
Positive routines/ faded bedtime with response cost	Positive routines involve parents developing a set bedtime routine characterized by enjoyable and quiet faded activities to establish a behavioral chain leading up to sleep onset. Faded bedtime involves temporarily delaying the bedtime to more closely coincide with the child's natural sleep onset time, then fading it earlier as the child gains success falling asleep quickly. Response cost involves taking the child out of bed for prescribed brief periods if the child does not fall asleep. These strategies rely on stimulus control as the primary agent of behavior change and target reduced affective and physiological arousal at bedtime.
Scheduled awakenings	Involves parents preemptively awakening their child prior to a typical spontaneous awakening, and providing the "usual" responses (e.g., feeding, rocking, soothing) as if child had awakened spontaneously.
Parent education/ prevention	Involves parent education to prevent the occurrence of the development of sleep problems. Behavioral interventions are incorporated into these parent education programs

GENERAL RECOMENDATION

3.1	Behavioral interventions are effective and recommended in the treatment of bedtime problems and night wakings in young children.	STANDARD

RECOMMENDATIONS FOR SPECIFIC THERAPIES

3.2	Unmodified extinction and extinction of undesired behavior with parental presence are effective and recommended therapies in the treatment of bedtime problems and night wakings.	STANDARD
3.3	Parent education/prevention is an effective and recommended therapy in the treatment of bedtime problems and night wakings.	STANDARD
3.4	Graduated extinction of undesired behavior is an effective and recommended therapy in the treatment of bedtime problems and night wakings.	GUIDELINE
3.5	Delayed bedtime with removal from bed/positive bedtime routines is an effective and recommended therapy in the treatment of bedtime problems and night wakings.	GUIDELINE
3.6	The use of scheduled awakenings is an effective and recommended therapy in the treatment of bedtime problems and night wakings.	GUIDELINE
3.7	Insufficient evidence was available to recommend any single therapy over another for the treatment of bedtime problems and night wakings. Insufficient evidence was also available to recommend combination, or multi-faceted, interventions for bedtime problems and night wakings over single therapies	OPTION

RECOMMENDATIONS FOR SECONDARY OUTCOMES

3.8	Behavioral interventions are recommended and effective in improving secondary outcomes (child's daytime functioning, parental well-being) in children with bedtime problems and night wakings.	GUIDELINE

ADAPTED FROM

Kushida CA; Littner MR; Hirshkowitz M et al. Practice parameters for the use of continuous and bilevel positive airway pressure devices to treat adult patients with sleep-related breathing disorders. *SLEEP* 2006;29(3):375-380.

Practice Parameters for the Use of Continuous and Bilevel Positive Airway Pressure Devices to Treat Adult Patients With Sleep-Related Breathing Disorders

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS

4.1.1	Treatment with CPAP must be based on a prior diagnosis of OSA established using an acceptable method.	STANDARD
4.1.2	CPAP is indicated for the treatment of moderate to severe OSA.	STANDARD
4.1.3	CPAP is recommended for the treatment of mild OSA.	OPTION
4.1.4	CPAP is indicated for improving self-reported sleepiness in patients with OSA	STANDARD
4.1.5	CPAP is recommended for improving quality of life in patients with OSA.	OPTION
4.1.6	CPAP is recommended as an adjunctive therapy to lower blood pressure in hypertensive patients with OSA.	OPTION
4.2.1	Full-night, attended polysomnography performed in the laboratory is the preferred approach for titration to determine optimal positive airway pressure; however, split-night, diagnostic-titration studies are usually adequate.	GUIDELINE
4.3.1	CPAP Usage should be objectively monitored to help assure utilization.	STANDARD
4.3.2	Close follow-up for PAP usage and problems in patients with OSA by appropriately trained health care providers is indicated to establish effective utilization patterns and remediate problems, if needed. This is especially important during the first few weeks of PAP use	STANDARD
4.3.3	The addition of heated humidification is indicated to improve CPAP utilization	STANDARD

RECOMMENDATIONS (CONTINUED)

4.3.4	The addition of a systematic educational program is indicated to improve PAP utilization.	STANDARD
4.4.1	After initial CPAP setup, long-term follow-up for CPAP-treated patients with OSA by appropriately trained health care providers is indicated yearly and as needed to troubleshoot PAP mask, machine, or usage problems.	OPTION
4.4.2	CPAP and BPAP therapy are safe; side effects and adverse events are mainly minor and reversible.	STANDARD
4.5.1	While the literature mainly supports CPAP therapy, BPAP is an optional therapy in some cases where high pressure is needed and the patient experiences difficulty exhaling against a fixed pressure or coexisting central hypoventilation is present.	GUIDELINE
4.5.2	BPAP may be useful in treating some forms of restrictive lung disease or hypoventilation syndromes associated with daytime hypercapnia.	OPTION

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ADAPTED FROM

Morgenthaler TI; Aurora RN; Brown T; Zak R; Alessi C; Boehlecke B; Chesson AL; Friedman L; Kapur V; Maganti R; Owens J; Pancer J; Swick TJ; Standards of Practice Committee of the AASM. Practice parameters for the use of autotitrating continuous positive airway pressure devices for titrating pressures and treating adult patients with obstructive sleep apnea syndrome: An update for 2007. *SLEEP* 2008;31(1):141-147.

Practice Parameters for the Use of Autotitrating Continuous Positive Airway Pressure Devices for Titrating Pressures and Treating Adult Patients with Obstructive Sleep Apnea Syndrome: An Update for 2007

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS

3.1	APAP is not recommended to diagnose OSA.	STANDARD
3.2	Patients with congestive heart failure, significant lung disease such as chronic obstructive pulmonary disease, patients expected to have nocturnal arterial oxyhemoglobin desaturation due to conditions other than OSA (e.g., obesity hypoventilation syndrome), patients who do not snore (either naturally or as a result of palate surgery), and patients who have central sleep apnea syndromes are not currently candidates for APAP titration or treatment.	STANDARD
3.3	APAP devices are not currently recommended for split-night titration.	STANDARD
3.4	Certain APAP devices may be used during attended titration with polysomnography to identify a single pressure for use with standard CPAP for treatment of moderate to severe OSA.	GUIDELINE
3.5	Certain APAP devices may be initiated and used in the self-adjusting mode for unattended treatment of patients with moderate to severe OSA without significant comorbidities (CHF, COPD, central sleep apnea syndromes, or hypoventilation syndromes).	OPTION
3.6	Certain APAP devices may be used in an unattended way to determine a fixed CPAP treatment pressure for patients with moderate to severe OSA without significant comorbidities (CHF, COPD, central sleep apnea syndromes, or hypoventilation syndromes).	OPTION

RECOMMENDATIONS

3.7	Patients being treated with fixed CPAP on the basis of APAP titration or being treated with APAP must have close clinical follow up to determine treatment effectiveness and safety. This is especially important during the first few weeks of PAP use.	STANDARD
3.8	A reevaluation and, if necessary, a standard attended CPAP titration should be performed if symptoms do not resolve or if the APAP treatment otherwise appears to lack efficacy.	STANDARD

Guidelines at-a-Glance

ADAPTED FROM

Ramar K, Dort LC, Katz SG, Lettieri CJ, Harrod CG, Thomas SM, Chervin RD. Clinical practice guideline for the treatment of obstructive sleep apnea and snoring with oral appliance therapy: an update for 2015. J Clin Sleep Med 2015;11(7):773–827.

Clinical Practice Guideline for the Treatment of Obstructive Sleep Apnea and Snoring with Oral Appliance Therapy: An Update for 2015

AASM LEVELS OF RECOMMENDATIONS

ASSESSMENT OF BENEFIT/ HARM/ BURDEN	OVERALL QUALITY OF EVIDENCE: HIGH	MODERATE	LOW	VERY LOW
Benefits clearly outweigh harm/burden	Standard	Standard	Guideline	Option
Benefits closely balanced with harm/burden OR Uncertainty in the estimates of benefit/harm/burden	Guideline	Guideline	Option	Option
Harm/burden clearly outweighs benefits	Standard	Standard	Standard	Standard

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms
B=H Benefits approximately equal harms
H>b Harms outweigh benefits

RECOMMENDATIONS FOR TREATMENT OF PRIMARY SNORING

4.1	We recommend that sleep physicians prescribe oral appliances, rather than no therapy, for adult patients who request treatment of primary snoring (without obstructive sleep apnea).	STANDARD ⊕⊕⊕⊕ **B>H**

RECOMMENDATIONS FOR TREATMENT OF OSA

4.2a	When oral appliance therapy is prescribed by a sleep physician for an adult patient with obstructive sleep apnea, we suggest that a qualified dentist use a custom, titratable appliance over non-custom oral devices.	GUIDELINE ⊕⊕⊖⊖ **B>H**
4.2b	We recommend that sleep physicians consider prescription of oral appliances, rather than no treatment, for adult patients with obstructive sleep apnea who are intolerant of CPAP therapy or prefer alternate therapy.	STANDARD ⊕⊕⊕⊖ **B>H**
4.2c	We suggest that qualified dentists provide oversight—rather than no follow up—of oral appliance therapy in adult patients with obstructive sleep apnea, to survey for dental-related side effects or occlusal changes and reduce their incidence.	GUIDELINE ⊕⊕⊖⊖ **B>H**
4.2d	We suggest that sleep physicians conduct follow-up sleep testing to improve or confirm treatment efficacy, rather than conduct follow-up without sleep testing, for patients fitted with oral appliances.	GUIDELINE ⊕⊕⊖⊖ **B>H**
4.2e	We suggest that sleep physicians and qualified dentists instruct adult patients treated with oral appliances for obstructive sleep apnea to return for periodic office visits—as opposed to no follow-up—with a qualified dentist and a sleep physician.	GUIDELINE ⊕⊖⊖⊖ **B>H**

ADAPTED FROM

Aurora RN; Casey KR; Kristo D; Auerbach S; Bista SR; Chowdhuri S; Karippot A; Lamm C; Ramar K; Zak R; Morgenthaler TI. Practice parameters for the surgical modifications of the upper airway for obstructive sleep apnea in adults. SLEEP 2010;33(10):1408-1413.

Practice Parameters for the Surgical Modifications of the Upper Airway for Obstructive Sleep Apnea in Adults

AASM LEVELS OF RECOMMENDATIONS

ASSESSMENT OF BENEFIT/ HARM/ BURDEN	OVERALL QUALITY OF EVIDENCE			
	HIGH	MODERATE	LOW	VERY LOW
Benefits clearly outweigh harm/burden	Standard	Standard	Guideline	Option
Benefits closely balanced with harm/burden OR Uncertainty in the estimates of benefit/harm/burden	Guideline	Guideline	Option	Option
Harm/burden clearly outweighs benefits	Standard	Standard	Standard	Standard

RECOMMENDATIONS FOR DIAGNOSIS

4.1.1	The presence and severity of obstructive sleep apnea must be determined before initiating surgical therapy.	STANDARD
4.1.2	The patient should be advised about potential surgical success rates and complications, the availability of alternative treatment options such as nasal positive airway pressure and oral appliances, and the levels of effectiveness and success rates of these alternative treatments.	STANDARD

RECOMMENDATIONS FOR TREATMENT OBJECTIVE

4.2	The desired outcomes of treatment include resolution of the clinical signs and symptoms of obstructive sleep apnea and the normalization of sleep quality, the apnea-hypopnea index, and oxyhemoglobin saturation levels	STANDARD

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High/Level 4
⊕⊕⊕⊖ Moderate/Level 3
⊕⊕⊖⊖ Low/Level 2
⊕⊖⊖⊖ Very Low/Level 1

RECOMMENDATIONS FOR SURGICAL PROCEDURES

4.3.1	**Tracheostomy:** Tracheostomy has been shown to be an effective single intervention to treat obstructive sleep apnea. This operation should be considered only when other options do not exist, have failed, are refused, or when this operation is deemed necessary by clinical urgency.	OPTION
4.3.2	**Maxillo-Mandibular Advancement (MMA):** MMA is indicated for surgical treatment of severe OSA in patients who cannot tolerate or who are unwilling to adhere to positive airway pressure therapy, or in whom oral appliances, which are more often appropriate in mild and moderate OSA patients, have been considered and found ineffective or undesirable.	OPTION ⊕⊖⊖⊖
4.3.3	**Uvulopalatopharyngoplasty (UPPP)** as a single surgical procedure: UPPP as a sole procedure, with or without tonsillectomy, does not reliably normalize the AHI when treating moderate to severe obstructive sleep apnea syndrome. Therefore, patients with severe OSA should initially be offered positive airway pressure therapy, while those with moderate OSA should initially be offered either PAP therapy or oral appliances.	OPTION ⊕⊖⊖⊖
4.3.4	**Multi-Level or Stepwise Surgery (MLS):** Use of MLS, as a combined procedure or as stepwise multiple operations, is acceptable in patients with narrowing of multiple sites in the upper airway, particularly if they have failed UPPP as a sole treatment.	OPTION ⊕⊖⊖⊖
4.3.5	**Laser Assisted Uvulopalatoplasty (LAUP):** LAUP is not routinely recommended as a treatment for obstructive sleep apnea syndrome.	STANDARD ⊕⊕⊖⊖
4.3.6	**Radiofrequency ablation (RFA):** RFA can be considered as a treatment in patients with mild to moderate obstructive sleep apnea who cannot tolerate or who are unwilling to adhere to positive airway pressure therapy, or in whom oral appliances have been considered and found ineffective or undesirable.	OPTION ⊕⊖⊖⊖
4.3.7	**Palatal Implants:** Palatal implants may be effective in some patients with mild obstructive sleep apnea who cannot tolerate or who are unwilling to adhere to positive airway pressure therapy, or in whom oral appliances have been considered and found ineffective or undesirable.	OPTION ⊕⊖⊖⊖

RECOMMENDATIONS FOR FOLLOW UP

5.0	Postoperatively, after an appropriate period of healing, patients should undergo follow-up evaluation including an objective measure of the presence and severity of sleep-disordered breathing and oxygen saturation, as well as clinical assessment for residual symptoms. Additionally, patients should be followed over time to detect the recurrence of disease.	STANDARD

ADAPTED FROM

Morgenthaler TI; Kapen S; Lee-Chiong T et al. Practice parameters for the medical therapy of obstructive sleep apnea. *SLEEP* 2006;29(8):1031-1035

Practice Parameters for the Medical Therapy of Obstructive Sleep Apnea

AASM LEVELS OF RECOMMENDATIONS

TERM	DEFINITION
STANDARD	This is a generally accepted patient-care strategy, which reflects a high degree of clinical certainty. The term standard generally implies the use of Level I Evidence, which directly addresses the clinical issue, or overwhelming Level II Evidence.
GUIDELINE	This is a patient-care strategy, which reflects a moderate degree of clinical certainty. The term guideline implies the use of Level II Evidence or a consensus of Level III Evidence.
OPTION	This is a patient-care strategy, which reflects uncertain clinical use. The term option implies either inconclusive or conflicting evidence or conflicting expert opinion.

RECOMMENDATIONS FOR WEIGHT REDUCTION

3.1.1	Behavioral interventions are effective and recommended in the treatment of bedtime problems and night wakings in young children.	GUIDELINE
3.1.2	Dietary weight loss should be combined with a primary treatment for OSA.	OPTION
3.1.3	Bariatric surgery may be adjunctive in the treatment of OSA in obese patients.	OPTION

RECOMMENDATIONS FOR PHARMACOLOGIC AGENTS

3.2.1	Selective serotonergic uptake inhibitors (SSRIs) are not recommended for treatment of OSA.	STANDARD
3.2.2	Protriptyline is not recommended as a primary treatment for OSA.	GUIDELINE
3.2.3	Methylxanthine derivatives (aminophylline and theophylline) are not recommended for treatment of OSA.	STANDARD
3.2.4	Estrogen therapy (estrogen preparations with or without progesterone) is not indicated for the treatment of OSA.	STANDARD
3.2.5	Modafinil is recommended for the treatment of residual excessive daytime sleepiness in OSA patients who have sleepiness despite effective PAP treatment and who are lacking any other identifiable cause for their sleepiness.	STANDARD

RECOMMENDATIONS FOR SUPPLEMENTAL OXYGEN

3.3.1	Oxygen supplementation is not recommended as a primary treatment for OSA.	OPTION

RECOMMENDATIONS FOR MEDICAL THERAPIES INTENDED TO IMPROVE NASAL PATENCY

3.4.1	Short-acting nasal decongestants are not recommended for treatment of OSA.	OPTION
3.4.2	Topical nasal corticosteroids may improve the AHI in patients with OSA and concurrent rhinitis, and thus may be a useful adjunct to primary therapies for OSA.	GUIDELINE

RECOMMENDATIONS FOR POSITONAL THERAPIES

3.5.1	Positional therapy, consisting of a method that keeps the patient in a non-supine position, is an effective secondary therapy or can be a supplement to primary therapies for OSA in patients who have a low AHI in the non-supine versus that in the supine position.	GUIDELINE

ADAPTED FROM

Aurora RN; Chowdhuri S; Ramar K; Bista SR; Casey KR; Lamm CI; Kristo DA; Mallea JM; Rowley JA; Zak RS; Tracy SL. The treatment of central sleep apnea syndromes in adults: practice parameters with an evidence-based literature review and meta-analyses. SLEEP 2012;35(1):17-40

AND

*Aurora RN, Bista SR, Casey KR, Chowdhuri S, Kristo DA, Mallea JM, Ramar K, Rowley JA, Zak RS, Heald JL. Updated adaptive servo-ventilation recommendations for the 2012 AASM guideline: "The Treatment of Central Sleep Apnea Syndromes in Adults: Practice Parameters with an Evidence-Based Literature Review and Meta-Analyses". J Clin Sleep Med 2016;12(5):757-761.

The Treatment of Central Sleep Apnea Syndromes in Adults: Practice Parameters with an Evidence-Based Literature Review and Meta-Analyses

AASM LEVELS OF RECOMMENDATIONS

ASSESSMENT OF BENEFIT/HARM/BURDEN	OVERALL QUALITY OF EVIDENCE: HIGH	MODERATE	LOW	VERY LOW
Benefits clearly outweigh harm/burden	Standard	Standard	Guideline	Option
Benefits closely balanced with harm/burden OR Uncertainty in the estimates of benefit/harm/burden	Guideline	Guideline	Option	Option
Harm/burden clearly outweighs benefits	Standard	Standard	Standard	Standard

RECOMMENDATIONS FOR THERAPIES FOR PRIMARY CSAS

4.1.a	Positive airway pressure therapy may be considered for the treatment of primary CSAS.	OPTION ⊕⊖⊖⊖
4.1.b	Acetazolamide has limited supporting evidence but may be considered for the treatment of primary CSAS.	OPTION ⊕⊕⊖⊖
4.1.c	The use of zolpidem and triazolam may be considered for the treatment of primary CSAS only if the patient does not have underlying risk factors for respiratory depression.	OPTION

QUALITY OF EVIDENCE*

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms

B=H Benefits approximately equal harms

H>b Harms outweigh benefits

**Summary of Quality of Evidence and Benefits versus Harms are provided based on availability in the guideline*

RECOMMENDATIONS FOR THERAPIES FOR CSAS DUE TO CONGESTIVE HEART FAILURE (CHF) INCLUDING CHEYNE STOKES BREATHING PATTERN (CSBP) AND NOT CHEYNE STOKES BREATHING

4.2.1.a	CPAP therapy targeted to normalize the apnea hypopnea index (AHI) is indicated for the initial treatment of CSAS related to CHF.	STANDARD ⊕⊕⊕⊖
4.2.2.a	BPAP therapy in a *spontaneous timed* (ST) mode targeted to normalize the apnea hypopnea index (AHI) may be considered for the treatment of CSAS related to CHF only if there is no response to adequate trials of CPAP, ASV, and oxygen therapies.	OPTION ⊕⊕⊖⊖
4.2.4	Nocturnal oxygen therapy is indicated for the treatment of CSAS related to CHF.	STANDARD ⊕⊕⊕⊖ **B>H**
4.2.6.a	The following therapies have limited supporting evidence but may be considered for the treatment of CSAS related to CHF, after optimization of standard medical therapy, if PAP therapy is not tolerated, and if accompanied by close clinical follow-up: acetazolamide and theophylline.	OPTION ⊕⊖⊖⊖ **B?H**
1**	Adaptive servo-ventilation (ASV) targeted to normalize the apnea-hypopnea index (AHI) should not be used for the treatment of CSAS related to CHF in adults with an ejection fraction ⩽ 45% and moderate or severe CSA predominant, sleep-disordered breathing.	STANDARD (AGAINST) ⊕⊕⊖⊖ **H>b**
2**	Adaptive servo-ventilation (ASV) targeted to normalize the apnea-hypopnea index (AHI) can be used for the treatment of CSAS related to CHF in adults with an ejection fraction > 45% or mild CHF related CSAS.	OPTION ⊕⊕⊖⊖ **B>H**

*** Refer to Update to the AASM Clinical Practice Guideline: Updated adaptive servo-ventilation recommendations for the 2012 AASM guideline: "The Treatment of Central Sleep Apnea Syndromes in Adults: Practice Parameters with an Evidence-Based Literature Review and Meta-Analyses".*

RECOMMENDATIONS FOR THERAPIES FOR CSAS RELATED TO END STAGE RENAL DISEASE

4.3	The following possible treatment options for CSAS related to end stage renal disease may be considered: CPAP, supplemental oxygen, bicarbonate buffer use during dialysis, and nocturnal dialysis.	OPTION ⊕⊖⊖⊖ **B?H**

American Academy of SLEEP MEDICINE™

ADAPTED FROM

Aurora RN; Kristo DA; Bista SR; Rowley JA; Zak RS; Casey KR; Lamm CI; Tracy SL; Rosenberg RS. The treatment of restless legs syndrome and periodic limb movement disorder in adults—an update for 2012: practice parameters with an evidence-based systematic review and meta-analyses. SLEEP 2012;35(8):1039-1062

AND

* Update to the AASM Clinical Practice Guideline: "The Treatment of Restless Legs Syndrome and Periodic Limb Movement Disorder in Adults—An Update for 2012: Practice Parameters with an Evidence-Based Systematic Review and Meta-Analyses" *SLEEP* 2012;35(8):1037

The Treatment of Restless Legs Syndrome and Periodic Limb Movement Disorder in Adults—An Update for 2012: Practice Parameters with an Evidence Based Systematic Review and Meta-Analyses

AASM LEVELS OF RECOMMENDATIONS

ASSESSMENT OF BENEFIT/HARM/BURDEN	OVERALL QUALITY OF EVIDENCE: HIGH	MODERATE	LOW	VERY LOW
Benefits clearly outweigh harm/burden	Standard	Standard	Guideline	Option
Benefits closely balanced with harm/burden OR Uncertainty in the estimates of benefit/harm/burden	Guideline	Guideline	Option	Option
Harm/burden clearly outweighs benefits	Standard	Standard	Standard	Standard

RECOMMENDATIONS FOR THERAPIES FOR RLS

4.2.1.1a	Clinicians should treat patients with RLS with pramipexole.	STANDARD ⊕⊕⊕⊕ **B>H**
4.2.1.2a	Clinicians should treat patients with RLS with ropinirole.	STANDARD ⊕⊕⊕⊕ **B>H**
4.2.1.3a	Clinicians can treat RLS patients with levodopa with dopa decarboxylase inhibitor.	GUIDELINE ⊕⊕⊕⊕ **B=H**
4.2.1.4a	Clinicians should not treat RLS patients with pergolide because of the risks of heart valve damage.	STANDARD ⊕⊕⊕⊕ **H>b**
4.2.1.4b	Given the potential of side effects, including heart valve damage, clinicians can treat RLS patients with cabergoline only if other recommended agents have been tried first and failed, and close clinical follow-up is provided.	GUIDELINE ⊕⊕⊕⊕ **B=H**
4.2.2a	Clinicians can treat RLS patients with opioids.	GUIDELINE ⊕⊕⊖⊖ **B>H**

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>H Benefits outweigh harms

B=H Benefits approximately equal harms

B?H Uncertainty in the estimates of benefit/ harm/burden

H>b Harms outweigh benefits

RECOMMENDATIONS FOR THERAPIES FOR RLS (CONTINUED)

4.2.3.1a	Clinicians can treat patients with RLS with gabapentin enacarbil.	GUIDELINE ⊕⊕⊕⊕ **B?H**
4.2.3.2a	Clinicians may treat RLS patients with gabapentin.	OPTION ⊕⊕⊖⊖ **B?H**
4.2.3.3a	Clinicians may treat patients with RLS with pregabalin.	OPTION ⊕⊕⊖⊖
4.2.3.4a	Clinicians may treat RLS patients with carbamazepine.	OPTION ⊕⊕⊖⊖ **B=H**
4.2.4a	Clinicians may treat patients with RLS with clonidine.	OPTION ⊕⊕⊖⊖ **B?H**
4.2.5a	Clinicians may use supplemental iron to treat RLS patients with low ferritin levels.	OPTION ⊕⊖⊖⊖ **B?H**
4.3.1*	Clinicians may treat moderate-to-severe primary RLS.	GUIDELINE ⊕⊕⊕⊕ **B?H**

** Refer to the Update to the AASM Clinical Practice Guideline: "The Treatment of Restless Legs Syndrome and Periodic Limb Movement Disorder in Adults—An Update for 2012: Practice Parameters with an Evidence-Based Systematic Review and Meta-Analyses"*

RECOMMENDATIONS FOR THERAPIES FOR PLMD

5.0a	There is insufficient evidence at present to comment on the use of pharmacological therapy in patients diagnosed with PLMD alone.	NO RECOMMENDATION (INSUFFICIENT EVIDENCE)

ADAPTED FROM

Smith MT, McCrae CS, Cheung J, Martin JL, Harrod CG, Heald JL, Carden KA. Use of actigraphy for the evaluation of sleep disorders and circadian rhythm sleep-wake disorders: an American Academy of Sleep Medicine clinical practice guideline. J Clin Sleep Med. 2018;14(7): 1231-1237.

Use of Actigraphy for the Evaluation of Sleep Disorders and Circadian Rhythm Sleep-Wake Disorders: An American Academy of Sleep Medicine Clinical Practice Guideline

IMPLICATIONS OF STRONG AND CONDITIONAL RECOMMENDATIONS FOR USERS OF AASM CLINICAL PRACTICE GUIDELINES

USER	STRONG RECOMMENDATION	CONDITIONAL RECOMMENDATION
CLINICIANS	Almost all patients should receive the recommended course of action. Adherence to this recommendation could be used as a quality criterion or performance indicator.	Most patients should receive the suggested course of action, however, different choices may be appropriate for different patients. The clinician must help each patient determine if the suggested course of action is clinically appropriate and consistent with his or her values and preferences.
PATIENTS	Almost all patients should receive the recommended course of action, although a small proportion of patients would not.	Most patients should receive the suggested course of action, though some would not. Different choices may be appropriate for different patients. The patient should work with their clinician to determine if the suggested course of action is clinically appropriate and consistent with his or her values and preferences.
INSURANCE PROVIDER	The recommended course of action can be adapted as policy for most situations. Adherence to the recommended course of action could be used as a quality criterion or performance indicator.	The ultimate judgment regarding the suitability of the suggested course of action must be made by the clinician and patient together, based on what is best for the patient. This decision-making flexibility should be accounted for when establishing policies.

RECOMMENDATIONS FOR THE USE OF ACTIGRAPHY

QUALITY OF EVIDENCE

⊕⊕⊕⊕ High
⊕⊕⊕⊖ Moderate
⊕⊕⊖⊖ Low
⊕⊖⊖⊖ Very Low

BENEFITS VERSUS HARMS

B>h Benefits outweigh harms
B=H Benefits approximately equal harms
H>b Harms outweigh benefits

PATIENT VALUES AND PREFERENCES


Vast majority of patients would use

Majority of patients would use

Majority of patients would not use

Vast majority of patients would not use

1.	We suggest that clinicians use actigraphy to estimate sleep parameters in adult patients with insomnia disorder. (Conditional)	⊕⊕⊕⊖ **B>h** 
2.	We suggest that clinicians use actigraphy in the assessment of pediatric patients with insomnia disorder. (Conditional)	⊕⊕⊕⊖ **B>h** 
3.	We suggest that clinicians use actigraphy in the assessment of adult patients with circadian-rhythm sleep-wake disorder. (Conditional)	⊕⊖⊖⊖ **B>h** 
4.	We suggest that clinicians use actigraphy in the assessment of pediatric patients with circadian-rhythm sleep-wake disorder. (Conditional)	⊕⊕⊖⊖ **B>h** 
5.	We suggest that clinicians use aactigraphy integrated with home sleep apnea test devices to estimate total sleep time during recording (in the absence of alternative objective measurements of total sleep time) in adult patients suspected of sleep-disordered breathing. (Conditional)	⊕⊕⊖⊖ **B>h** 
6.	We suggest that clinicians use actigraphy to monitor total sleep time prior to testing with the Multiple Sleep Latency Test in adult and pediatric patients with suspected central disorders of hypersomnolence. (Conditional)	⊕⊕⊕⊖ **B>h** 
7.	We suggest that clinicians use actigraphy to estimate total sleep time in adult patients with suspected insufficient sleep syndrome. (Conditional)	⊕⊕⊕⊖ **B>h** 
8.	We recommend that clinicians ***not*** use actigraphy in place of electromyography for the diagnosis of periodic limb movement disorder in adult and pediatric patients. (Strong)	⊕⊕⊕⊖ **H>b**

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