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RECOGNIZING AND MANAGING SLEEP APNEA: PATIENT PROFILES, ETIOLOGIES, AND TARGETED THERAPIES

AGENDA ITEMS

- Core Signs and Symptoms of Sleep Apnea
- Differences in Sleep Apnea Presentation Among Patient Profiles
- Understanding the Etiologies of Sleep Apnea
- Matching Etiology with the Appropriate Therapy
- BONUS!! **Evaluation and management of obstructive sleep apnea in adults hospitalized for medical care: an American Academy of Sleep Medicine clinical practice guideline**

THIS STILL IS ACCURATE AS OF TODAY!!

- **“Eighty to 90 percent of patients with OSA are undiagnosed, despite having clear signs and symptoms. When patients are finally diagnosed with OSA, they have had obvious symptoms of the disorder for an average of seven years, during which time they report having seen a family physician about 17 times and a subspecialist about nine times.**
- **The most likely reason for missed diagnosis is that physicians simply do not suspect sleep apnea.”**

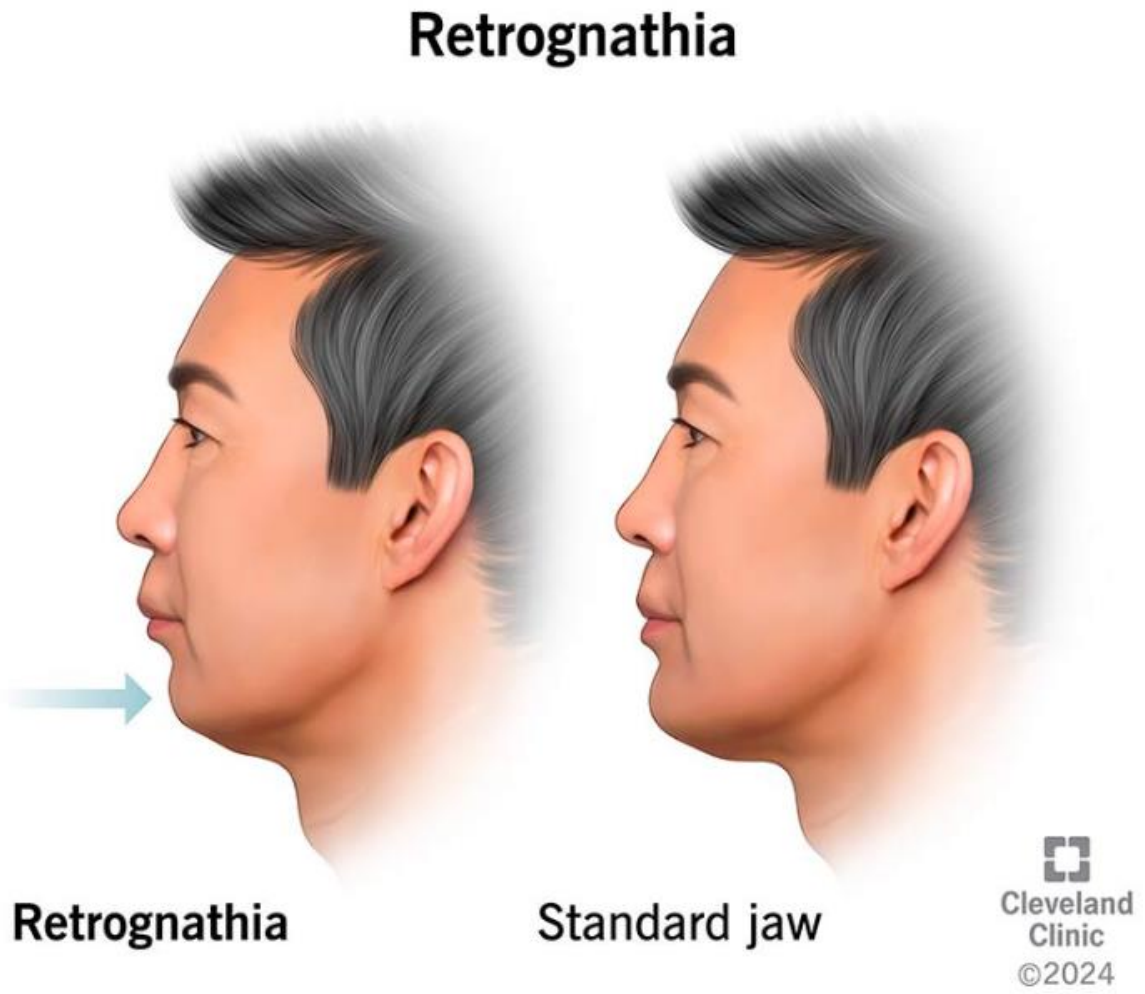
- **American Family Physician**
- **January 15, 2002/Volume 65, Number 2**

CORE SIGNS AND SYMPTOMS OF SLEEP APNEA BEYOND THE OVERWEIGHT ELDERLY MALE

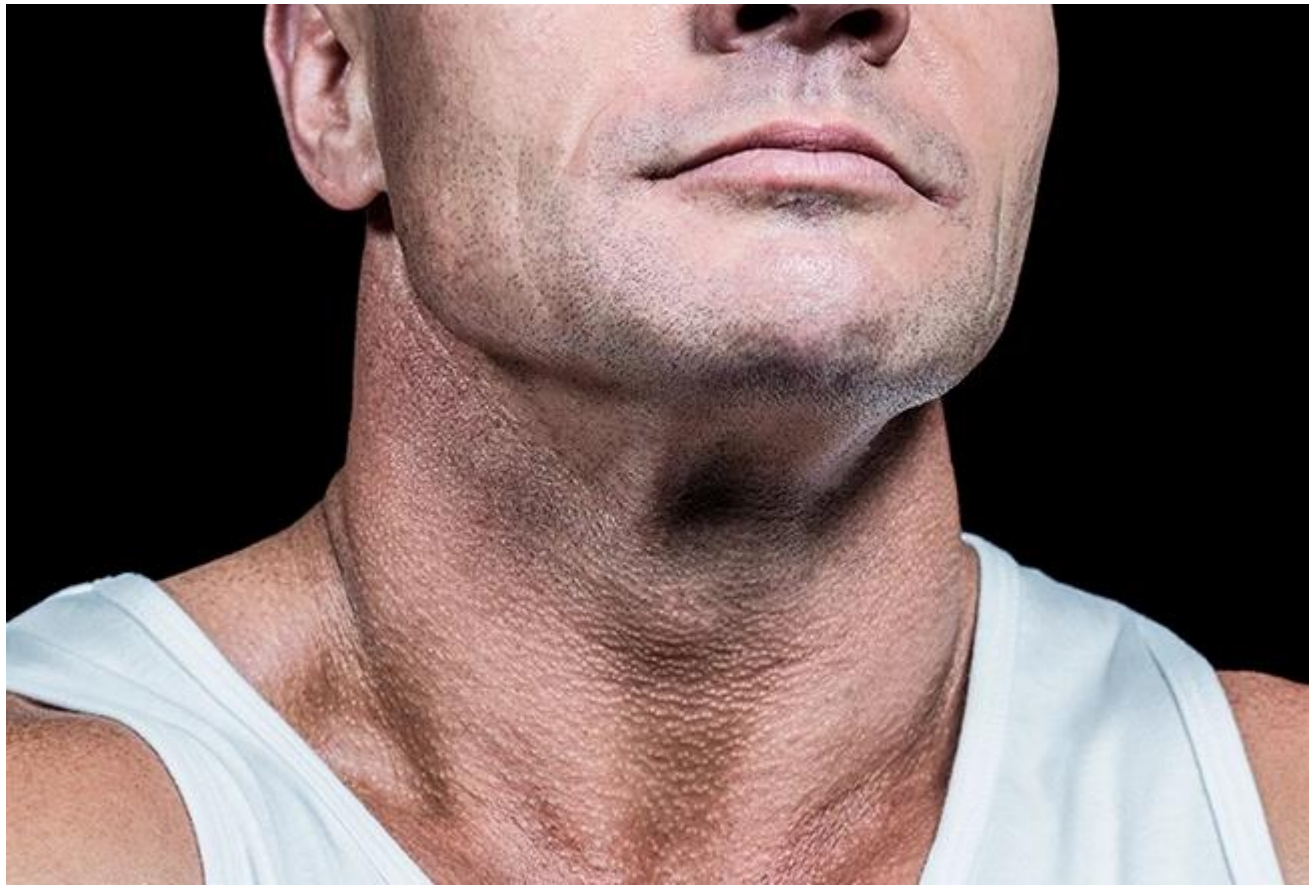
Retrognathia, Thick Neck, Wide tongue and/or Enlarged Uvula, Asymmetrical Nostrils

UNDERSTANDING THE ETIOLOGIES OF SLEEP APNEA

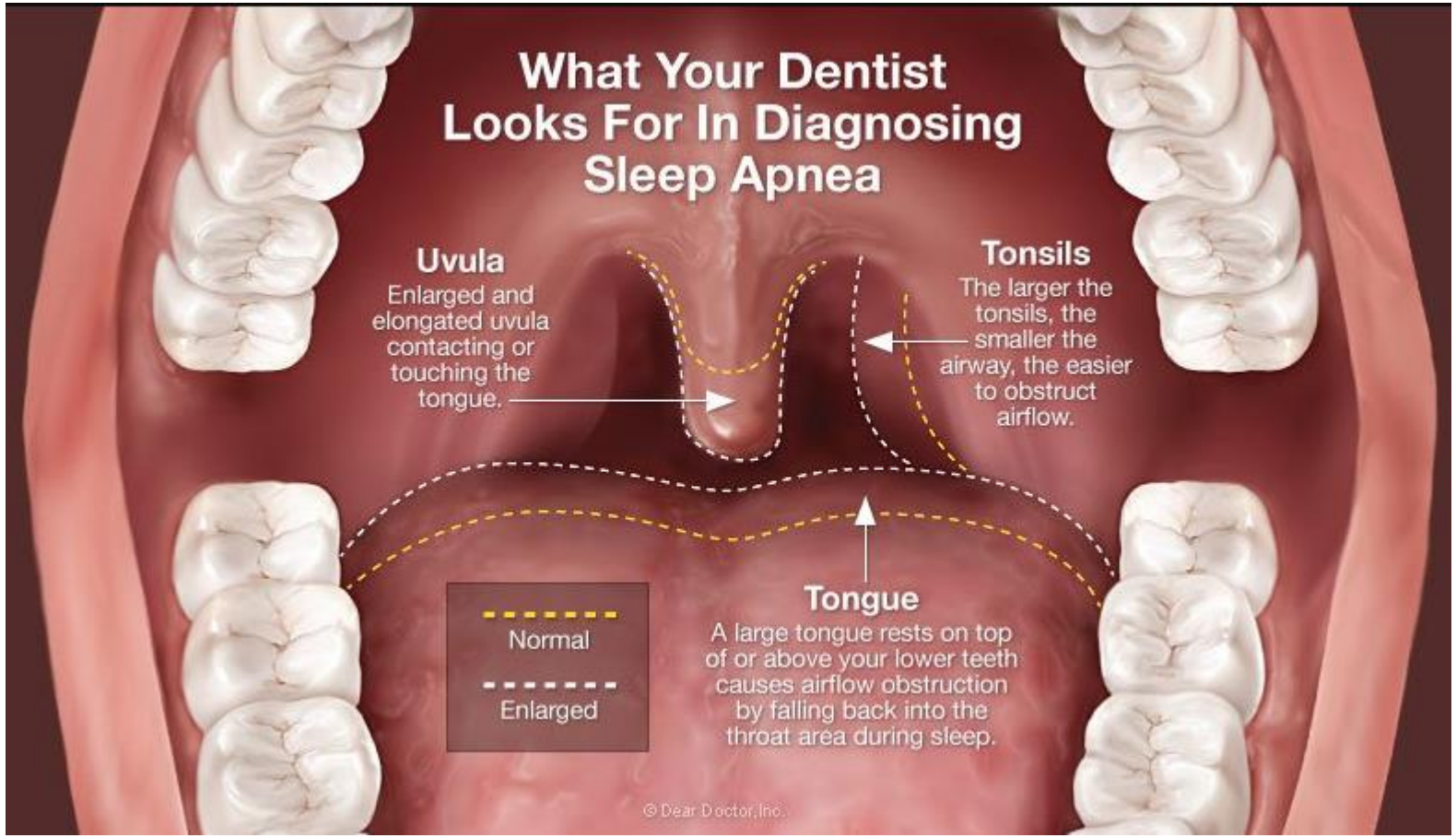
RETROGNATHIA (LOWER JAW SET BACK)



NECK SIZE GREATER THAN 17 INCHES (MALES) 16 INCHES (FEMALES)



WIDE TONGUE AND ENLARGED ELONGATED UVULA



LACK OF SYMMETRY IN NOSTRIL

WHAT NEEDS TO BE DOCUMENTED TO TEST AND TREAT?

a. Observed apneas during sleep; **OR**
b. A combination of **at least two (2)** of the following:
   - Excessive daytime sleepiness evidenced by an Epworth sleepiness >10, inappropriate daytime napping (e.g., during driving, conversation or eating), or sleepiness that interferes with daily activities and is not explained by other conditions;
   - Habitual snoring or gasping/choking episodes associated with awakenings;
   - Treatment-resistant hypertension (persistent hypertension in an individual taking three or more antihypertensive medications);
   - Obesity, defined as a body mass index (BMI) $\geq$ 30 kg/m^2 or neck circumference defined as >17 inches in men or >16 inches in women
   - Craniofacial or upper airway soft tissue abnormalities
   - Unexplained nocturia not attributable to any other causes or conditions

   OR
c. History of stroke (more than 30 days previously), transient ischemic attack, coronary artery disease, or sustained supraventricular tachycardic or bradycardic arrhythmias in patients who meet **ONE of 6 criteria listed under "b" above.**

HOW TO ASK THE 3 MOST IMPORTANT QUESTIONS IN A DIFFERENT WAY TO GET TO TRUTH

- **SNORE**- “Do you wake up with dry mouth? (Dry you like you ate a cat)
- **WITNESSED APNEA-** “Do you sleep on your back?” “Do you find it difficult to sleep on your back?” “Do you frequently wake up on your back?”
- **TIRED**- This can manifest as decreased cognitive function or recall. “Do you notice your short-term memory is off? (walk into a room and forgot what you were looking for, read something and unable to recall what you read, etc...) **ESS greater than 10 required**

STOP-BANG QUESTIONNAIRE

- **S** (snore) Have you been told that you snore? YES / NO
- **T** (tired) Are you often tired during the day? YES / NO
- **O** (obstruction) Do you know if you stop breathing or has anyone
- witnessed you stop breathing while you are asleep? YES / NO
- **P** (pressure) Do you have high blood pressure or on medication to
- control high blood pressure? YES / NO
- **B** (BMI) Is your body mass index greater than 28? YES / NO
- **A** (age) Are you 50 years old or older? YES / NO
- **N** (neck) Are you a male with a neck circumference greater than
- 17 inches, or a female with a neck circumference greater
- than 16 inches. YES / NO
- **G** (gender) Are you a male? YES / NO

EPWORTH SLEEPINESS SCALE

How likely are you to doze off or fall asleep in the following situations, in contrast to feeling just tired?

This refers to your usual way of life in recent times.

Even if you haven't done some of these things recently try to work out how they would have affected you.

Use the following scale to choose the **most appropriate number** for each situation:

0 = would **never** doze
1 = **slight chance** of dozing
2 = **moderate chance** of dozing
3 = **high chance** of dozing

It is important that you answer each question as best you can.

Situation	Chance of Dozing (0-3)
Sitting and reading	
Watching TV	
Sitting, inactive in a public place (e.g. a theatre or a meeting)	
As a passenger in a car for an hour without a break	
Lying down to rest in the afternoon when circumstances permit	
Sitting and talking to someone	
Sitting quietly after a lunch without alcohol	
In a car, while stopped for a few minutes in the traffic	

DISTINCT SYMPTOMS IN MALE VS FEMALE PATIENTS

Classic Male Symptoms

Men commonly show loud snoring and observed apneas, which are typical indicators of sleep disorders.

Subtle Female Symptoms

Women often have subtle symptoms like insomnia, depression, and fatigue, lower arousal threshold and snore can present as a “puff” or apnea only present during REM, causing underdiagnosis in females.

Under diagnosis of OSA in women

- Women present with different symptoms than what are considered the “typical” symptoms of OSA (Insomnia, fatigue, headaches and muscle pain)
- Women may have a higher threshold for sleepiness or simply be less inclined to complain.

Under diagnosis (cont.)

- Women may be reluctant to complain about “unladylike” snoring
- Men often attend clinical appointments with their partner, whereas women are more likely to attend on their own
- Even when women do report with classic symptoms of OSA (snoring, witnessed apneas, EDS) they were still less likely to be referred to sleep clinics than men.

Apnea/Hypopnea Index

- Total # Respiratory events/Total Sleep Time=AHI
- 5-15=Mild (**Stopping breathing every 4-12 minutes**)
- 15-30=Moderate (**Stopping breathing every 2-4 minutes**)
- > 30= Severe (**Stopping breathing every 2 minutes or more**)

PEDIATRIC SLEEP APNEA CHARACTERISTICS

Behavioral Manifestations

Sleep apnea in children commonly causes behavioral problems and hyperactivity instead of typical adult symptoms.

Growth and Development Impact

Growth delays are a key sign of pediatric sleep apnea, highlighting its wide-ranging effects on child health.

Screening Necessity

Tailored screening approaches are essential due to different symptoms compared to adults with sleep apnea. Pediatric patients have a lower arousal threshold.

MATCHING ETIOLOGY WITH THE APPROPRIATE THERAPY

THERAPIES FOR OBSTRUCTIVE SLEEP APNEA

Continuous Positive Airway Pressure-CPAP is a widely used therapy that maintains open airways by providing constant airflow during sleep.

Lifestyle Modifications-Lifestyle changes such as weight loss and exercise help reduce symptoms and improve overall health.. Positional training may be an option

Oral Appliances- Oral devices help reposition the jaw to keep the airway open during sleep.

Surgical Interventions-Surgery addresses structural issues to prevent airway collapse in severe cases. Mandibular advancement or Hypoglossal nerve Stimulation

Medications- GLP1 for weight loss, Apnimed (Oxybutynin & Atomoxetine, Not yet approved)

CONCLUSION

Recognizing Sleep Apnea Diversity

Understanding different causes and presentations of sleep apnea helps tailor effective treatments.

Targeted Therapies Importance

Implementing targeted therapies addresses specific patient needs leading to better health outcomes.

Personalized Treatment Benefits

Personalized approaches significantly improve patient quality of life and treatment effectiveness.

EVALUATION AND MANAGEMENT OF OBSTRUCTIVE SLEEP APNEA IN ADULTS HOSPITALIZED FOR MEDICAL CARE: AN AMERICAN ACADEMY OF SLEEP MEDICINE CLINICAL PRACTICE GUIDELINE

- https://jcsm.aasm.org/doi/pdf/10.5664/jcsm.11864

RECOMMENDATION 1: FOR MEDICALLY HOSPITALIZED ADULTS AT INCREASED RISK FOR OSA

- , **the AASM suggests in hospital screening for OSA as part of an evaluation and management pathway that incorporates diagnosis and treatment with positive airway pressure rather than no in-hospital screening**. (Conditional recommendation, low certainty of evidence) Remarks: Screening may include validated questionnaires and/or screening with overnight high-resolution pulse oximetry (HRPO). When considering in-hospital screening as part of a management pathway, 1) patients who place a lower value on the potential reduction of clinically meaningful outcomes (e.g., cardiovascular events) and place a higher value on the possible downsides associated with the use of PAP (e.g., sleep disruption, discomfort), or 2) clinicians who perceive that the diagnosis or management of OSA may interfere with medical care, would reasonably decline OSA screening or PAP during the hospitalization. High risk for OSA is defined by signs and symptoms that suggest moderate to severe OSA (e.g., excessive daytime somnolence + 2 of the following: diagnosed hypertension; habitual loud snoring; witnessed apnea, gasping, or choking and/or association of high-risk comorbidities as outlined in the Figure 1 caption). Accepted Paper Diagnostic testing for OSA should ideally be conducted after a patient has been medically stabilized during the hospital stay or post-discharge.

Recommendation 2: For medically hospitalized adults with an established diagnosis of moderate-to-severe OSA and not currently on treatment

- , **the AASM suggests the use of inpatient treatment with positive airway pressure rather than no positive airway pressure**. (Conditional recommendation, low certainty of evidence) Remarks: When considering in-hospital OSA treatment, 1) patients who place a lower value on the potential reduction of clinically meaningful outcomes (e.g., cardiovascular events) and place a higher value on the possible downsides associated with the use of PAP (e.g., sleep disruption, discomfort), or 2) clinicians who perceive that the diagnosis or management of OSA may interfere with medical care, would reasonably decline OSA screening or PAP during the hospitalization.

Recommendation 3: For medically hospitalized adults at increased risk for or with an established diagnosis of OSA

- , **the AASM suggests that sleep medicine consultation be available as part of an evaluation and management pathway, rather than no sleep medicine consultation**. (Conditional recommendation, very low certainty of evidence) Remarks: It is recognized that there will be variability of the availability of hospital-based expertise and resources specific to sleep medicine consultation; therefore, we provide specific guidance as follows. Oversight by a board-certified sleep medicine clinician and/or an AASM-accredited sleep center is preferable. However, elements of this consultation including education and follow-up plan can be provided by those with requisite expertise including advanced practitioners, nurses, sleep technologists, respiratory therapists, care coordinators, case managers, health educators, or other available resource personnel. Given the variability of expertise and resources available, creative consultation models of care such as teleconsult/telehealth, E consult and/or nursing or respiratory therapist care can be considered. Availability of inpatient diagnostics and treatment as part of the consultation should be taken into consideration in terms of feasibility of implementation of this recommendation.

Recommendation 4: For medically hospitalized adults at increased risk for or with an established diagnosis of OSA

- **the AASM suggests a discharge management plan to ensure timely diagnosis and effective management of OSA, rather than no plan.** (Conditional recommendation, very low certainty of evidence) Remarks: Timeliness: Consider an expedited evaluation and management plan to optimize post-discharge outcomes. Linkage to care: Consider ordering post-discharge testing or sleep medicine evaluation prior to discharge. Inpatient sleep testing prior to discharge and/or telehealth medicine may be an option to reduce barriers to care. Population management: Consider care coordination to ensure appropriate follow-up and post-discharge care.