

How to have success in the lab

Tools

Preparation

Rubrics

Documentation

Feedback

Make sure your techs have the **TOOLS** to succeed!

- Belts
 - Reusable, Disposable, Options
- Pulse Ox – Hot hands / Blanket Warmer
- Paper Speed
 - 30 seconds, 90 seconds, 120 seconds, 300 seconds
 - More than 5 CSA, review at 600 seconds
- Masks
 - Full Face / Nasal option
 - Facial Scanning
- Adjustable beds – Everyone has one...
 - Wedge



Pre Game Checklist

- **Game Plan**
 - What does the order say?
 - What are you expecting to see?
 - What did the previous studies tell you?
 - What don't you know?
- **Review Order and H/P**
- All patients with heart concerns **check** for EF
- Review **ALL** previous studies
- **Review** compliance data
 - CSA on compliance – not present on any study and no clinical history?
- **INTERVIEW**
 - Listen = Trust
 - Trust = Patient Confidence
- **Mask Fit** before SET UP on every study
 - Patients can't differentiate paste, tape, wires, headgear, mask – SENSORY OVERLOAD



Build a Foundation

- Impedance
- Bundle
- Preceptor
 - Titrations
- No Preceptor
 - PSG / Split Only

• Rubrics



Summary of AASM Clinical Guidelines for the Manual Titration of Positive Airway Pressure in Patients with Obstructive Sleep Apnea

Updated July 2021

Increase pressure by a minimum of 1 cm H₂O with an interval of no less than 5 minutes when any one of the following is observed:

≥ 12 years old	2 obstructive apneas	3 hypopneas	5 RERAs	3 minutes of loud or unambiguous snoring
< 12 years old	1 obstructive apnea	1 hypopnea	3 RERAs	1 minute of loud or unambiguous snoring

Increase both IPAP and EPAP pressures by a minimum of 1 cm H₂O with an interval of no less than 5 minutes when you see any of the following:

≥ 12 years old	2 obstructive apneas
< 12 years old	1 obstructive apnea

Increase IPAP pressure by a minimum of 1 cm H₂O with an interval of no less than 5 minutes when you see any of the following:

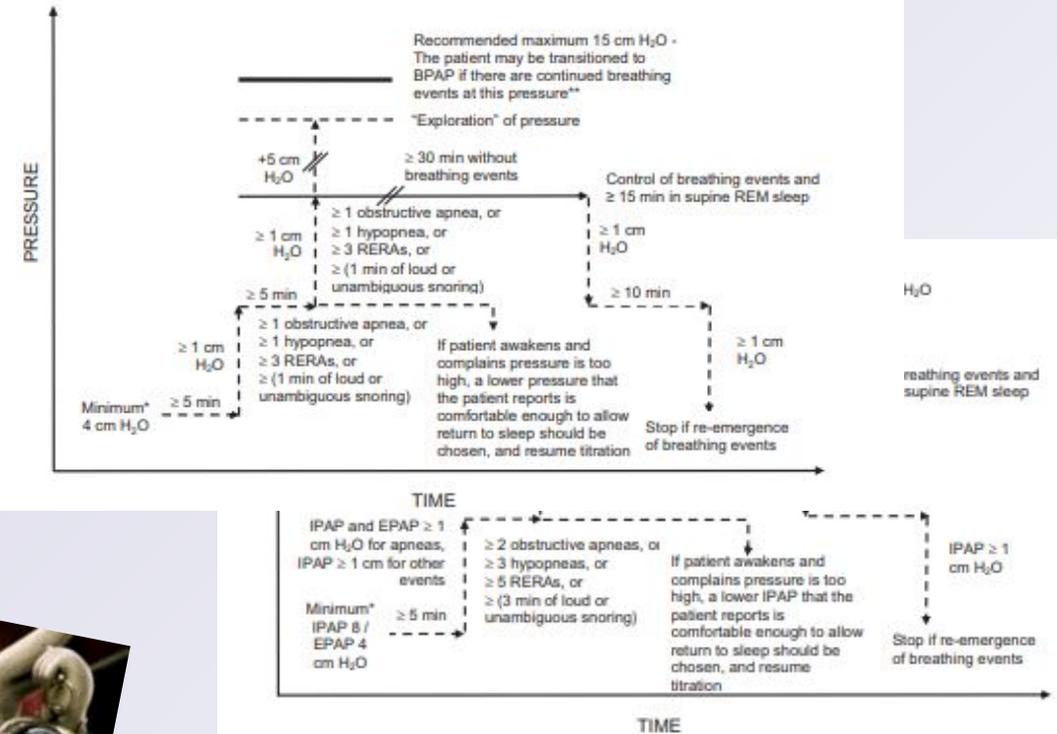
≥ 12 years old	3 hypopneas	5 RERAs	3 minutes of loud or unambiguous snoring
< 12 years old	1 hypopnea	3 RERAs	1 minute of loud or unambiguous snoring



ASV 40-45 minutes before changing pressure

Clinical Guidelines for the Manual Titration of Positive Airway Pressure in Patients with Obstructive Sleep Apnea

Positive Airway Pressure Titration Task Force of the American Academy of Sleep Medicine



Treatment of central sleep apnea in adults: an American Academy of Sleep Medicine systematic review, meta-analysis, and GRADE assessment

M. Safwan Badr, MD, MBA, Rami N. Khayat, MD, J. Shirine Allam, MD, Suzanne Hyer, PhD, RN, Reem A. Mustafa, MD, MPH, PhD, Matthew T. Naughton, MBBS, MD, FRACP, ATSF, FERS, ... [SEE ALL AUTHORS](#) ▾

Published Online: December 1, 2025 • <https://doi.org/10.5664/jcsm.11860> • Cited by: 3

Patients frequently present with mixed disorders, in which both obstructive and central events occur, and the choice of treatment should address both disorders, if present

- **GOAL #1** Eliminate APNEA

- Tools:

- CPAP

- BiPAP (no gap)

- ASV

- BiPAP ST

- Positional Sleep

- Oxygen

- Mask Change

- **Goal #2** Eliminate OSH / CSH

- **Goal #3** Improve Oxygenation

The pathogenesis of CSA can vary depending on the underlying clinical condition

And the tech!

- **TECSA**

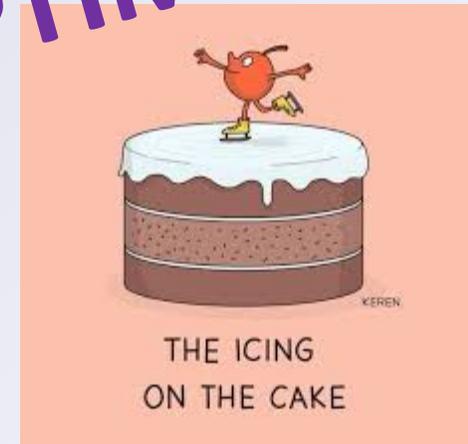
- Harder to identify
 - HST
 - Clinical condition changed since PSG study
- Go on and find out
 - Set a point to stop and go back
 - Titrate down
 - Choose a different modality



Realistic Goals

- Acclimation
 - Meet the patient where they are at
- Identify Modality
 - CPAP – BiPAP – BIPAP ST – ASV - Oxygen
- Control the Leak
 - Is it really optimal if the leak is not
- Make a case
 - **Documentation** and establish clear pathways
- Identify a **therapeutic** pressure

OPTIMAL



Rubrics

Explain the **WHY**

Follow the path to make your case so your patient doesn't get delayed

Proving CPAP failure gets a BiPAP without a letter of medical necessity

Studies are expensive – patients and doctors are not happy when a patient has to return to “try” BiPAP before they can have the ASV the lab already titrated them on



Feedback

Collective Independent 1:1

- Physician Case Review
 - Educational Power Points
 - **Review** the physicians final report
 - Inter Score Reliability
- Review study and tech notes
 - Tech review and present what they would have done different
 - Highlight GOOD titrations
 - If possible, allow tech to perform repeat study

Fear is not an effective long-term motivator

Physician Questions

Order Questions

Question	Answer
If denied by insurance, do you wish to proceed with home study?	No
Is this an Inspire candidate?	No
Is this for a Daytime study (Shift Worker)?	No
Is the patient on supplemental oxygen?	No
Do you want the study performed with oxygen?	No
Has the patient had any illness, injuries, or hospitalizations in the last 30 days?	No
Does the patient have a caregiver at home?	No
Does the patient need assistance in/out of bed or to/from the restroom?	No
Does the patient sleep in a	flat bed
Has the patient fallen in the last 6 months?	No
Are you willing to do a Peer-to-Peer for insurance authorization?	No
Interpreting Physician (if blank, study will be assigned in rotation)	SIDDIQUI
Patients BMI	37.4

Scheduler Questions

Does the patient or patient's bed partner have a pacemaker?

Yes No

Has the patient had a previous sleep study?

Yes No

Does the patient use a cane, walker or will need use of a wheelchair?

Cane Walker Wheelchair None

Does the patient use oxygen?

Greater than 3 Liters Less than 3 Liters None

Does the patient need assistance getting in and out of bed?

Yes No

Do you take a sleeping pill?

Yes No

Do you have

Certain styles of hairstyles cannot be done.

Braids Cornrows Extensions Toupee Wig Other None

Patients BMI

37.4

Patients BMI

Patients last documented BMI. Please verify accuracy. **If Blank, No BMI has been documented**

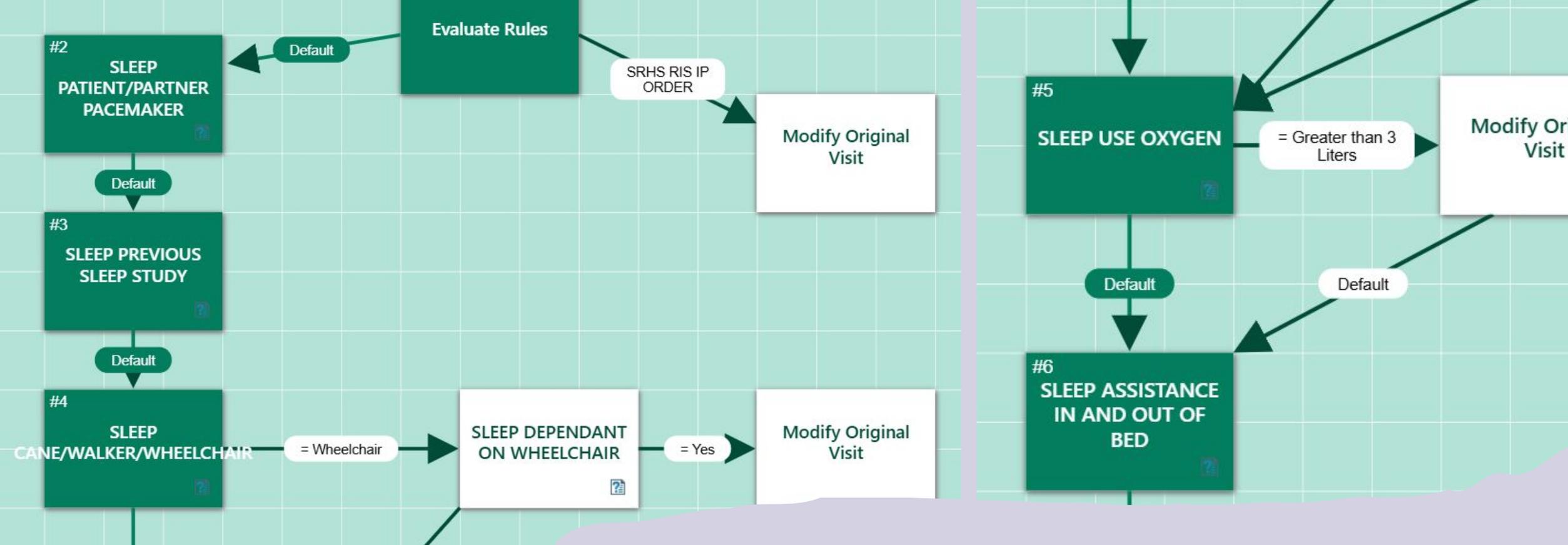
BMI 50 or Greater BMI 40 - 49 BMI 39 or Less

Do you drive at night?

Yes No

Results - Continue Scheduling

No results to apply.



Decision Tree for Schedulers

Despite the slow progress in CSA research, the period since the last AASM guidelines on CSA was notable for 2 important developments featured in these guidelines. The first is the development of the TPNS, a fully implantable neurostimulator that became approved by the Food and Drug Administration and commercially available (Remede, Zoll) in 2016. The second is the publication of a trial¹² addressing the safety and efficacy of a peak-flow-based ASV device in patients with HFrEF. These 2 developments underpin the major updates to the guidelines and are further discussed below.

- Inter Score Reliability
- Feedback

TREATMENT OF CENTRAL SLEEP APNEA IN ADULTS

CONDITIONAL RECOMMENDATIONS (FOR)

1. The AASM **suggests** using continuous positive airway pressure over no continuous positive airway pressure in adults with CSA.
2. The AASM **suggests** using bilevel positive airway pressure with a backup rate over no bilevel positive airway pressure with a backup rate in adults with CSA.
3. The AASM **suggests** using adaptive servo-ventilation over no adaptive servo-ventilation in adults with CSA [*see remark 1*].
4. The AASM **suggests** using low-flow oxygen over no low-flow oxygen in adults with CSA.
5. The AASM **suggests** using low-flow oxygen over no low-flow oxygen in adults with CSA [*see remark 2*].
6. The AASM **suggests** using oral acetazolamide over no acetazolamide in adults with CSA.
7. The AASM **suggests** using oral acetazolamide over no acetazolamide in adults with CSA.
8. The AASM **suggests** using transvenous phrenic nerve stimulation over no transvenous phrenic nerve stimulation in adults with CSA [*see remark 3*].

CONDITIONAL RECOMMENDATIONS (AGAINST)

9. The AASM **suggests against** the use of bilevel positive airway pressure without a backup rate in adults with CSA.

APPLICABLE POPULATIONS

Primary CSA, CSA due to heart failure, CSA due to medication or substance, treatment-emergent CSA, CSA due to medical condition/disorder

Primary CSA, CSA due to medication or substance, treatment-emergent CSA, CSA due to medical condition/disorder

Primary CSA, CSA due to heart failure, CSA due to medication or substance, treatment-emergent CSA, CSA due to medical condition/disorder

CSA due to heart failure

CSA due to high altitude

Primary CSA, CSA due to heart failure, CSA due to medication or substance, treatment-emergent CSA, CSA due to medical condition/disorder

CSA due to high altitude

Primary CSA, CSA due to heart failure

Primary CSA, CSA due to heart failure, CSA due to medication or substance, treatment-emergent CSA, CSA due to medical condition/disorder

CERTAINTY

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