

ASV: the big picture

Adaptive servo-ventilation (ASV)* delivers improved health outcomes for sleep apnoea patients

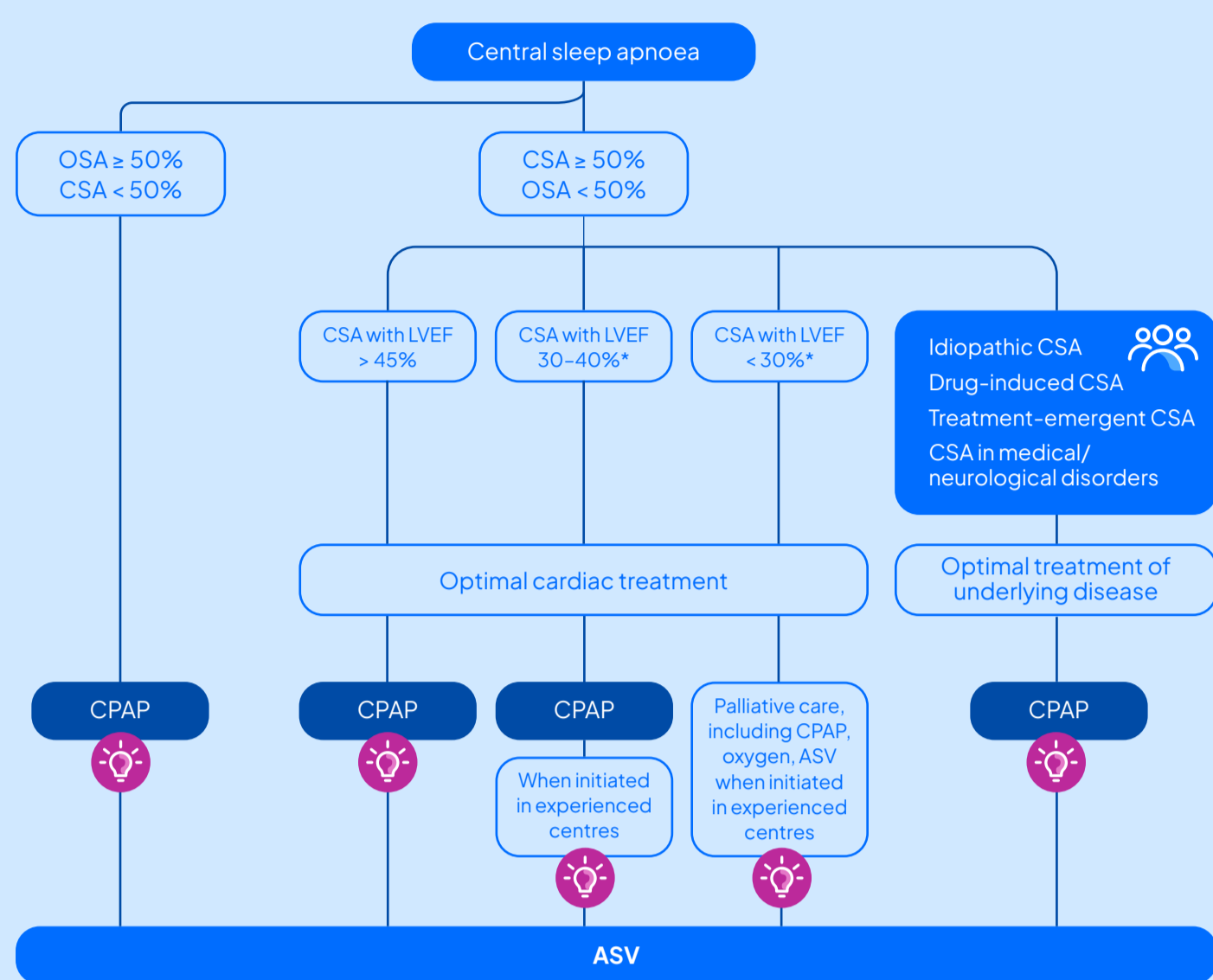


Central sleep apnoea (CSA) is not a single condition and treatment is not one-size-fits-all.⁷

Today, the updated 2025 ERS/ESRS statement on ASV^{1,2} and real-world registry data³⁻⁶ provide a clearer framework to identify the right patients for ASV therapy. ASV has been shown to improve sleep, quality of life, and may reduce both hospitalisations and cardiovascular-related deaths in specific CSA phenotypes.^{5,6}

CSA
0.9%
of the general population, predominantly older adults, males, and those with cardiovascular diseases⁷

2025 ERS/ESRS statement: a clear clinical framework for CSA**



The ERS/ESRS statements advise a CPAP trial with timely reassessment, avoiding prolonged continuation if CSA persists^{1,2}

ASV improves outcomes

Recent research, including registries and large cohort studies, has shown the positive effects of ASV therapy on the CSA patient population.^{3,4}

- Sleep improvement (PSQI, FOSQ)
- Disease-specific QoL improvement (SF-36, Pichot Fatigue Scale)
- Reduced sleepiness

Phenotyping identifies patients who may benefit most from ASV

In heart failure (HF) patients with CSA, ASV outcomes varied by clinical phenotype. In the FACE registry (503 HF patients), six phenogroups were identified and three were associated with favourable prognosis and high adherence under ASV therapy.^{5,6}

<p>HFmrEF/HFpEF with CSA and elevated hypoxic burden</p> <ul style="list-style-type: none"> Old, Male, Normal/high BMI, Hypoxic burden Respiratory phenotype: Predominant CSA Cardiac profile: HFmrEF/HFpEF Vascular/rhythm burden: More hypertensive patients ASV acceptance: Good <p>Favourable prognosis observed with ASV</p>	<p>HFpEF with severe predominant CSA</p> <ul style="list-style-type: none"> Old, Male, High BMI Respiratory phenotype: Predominant CSA Cardiac profile: HFpEF Vascular/rhythm burden: More hypertensive patients ASV acceptance: Good 	<p>HFpEF with severe predominant OSA</p> <ul style="list-style-type: none"> Old, Male, High BMI, Severe hypoxic burden Respiratory phenotype: Predominant OSA Cardiac profile: HFpEF Vascular/rhythm burden: High stroke/TIA incidence, more hypertensive patients ASV acceptance: Good <p>Most favourable prognosis and highest ASV adherence</p>
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ASV use was associated with:

- Reduction in cardiovascular-related deaths
- Fewer hospitalisations due to heart failure
- Overall decrease in mortality and hospital admissions

Information

In the FACE registry, the other phenogroups did not demonstrate a prognostic benefit with ASV, underscoring the importance of phenotype-driven patient selection.

- HFpEF with predominant CSA and high short-term event risk**
- HFpEF/HFmrEF with combined CSA and OSA**
- HFmrEF/HFpEF with moderate CSA and intermediate hypoxic burden**

Key takeaway

Phenotype drives outcome. In central sleep apnoea, ASV benefit depends on who you treat.

One size does not fit all⁸



This content is intended for health professionals only.

* ASV therapy is contraindicated in patients with chronic, symptomatic heart failure (NYHA 2-4) with reduced left ventricular ejection fraction (LVEF ≤ 45%) and moderate to severe predominant central sleep apnoea.

** The figure is not intended as a general recommendation.

References

ASV: Adaptive Servo-Ventilation
 BMI: Body Mass Index
 CPAP: Continuous Positive Airway Pressure
 CSA: Central Sleep Apnoea
 ERS: European Respiratory Society
 ESRS: European Sleep Research Society
 FOSQ: Functional Outcomes of Sleep Questionnaire
 HF: Heart Failure
 HFREF: Heart Failure with Reduced Ejection Fraction (LVEF <40%)⁹
 HFmrEF: Heart Failure with Mid-Range Ejection Fraction (LVEF 40-49%)⁹
 HFpEF: Heart Failure with Preserved Ejection Fraction (LVEF ≥50%)⁹
 LVEF: Left Ventricular Ejection Fraction
 NYHA: New York Heart Association
 OSA: Obstructive Sleep Apnoea
 PSQI: Pittsburgh Sleep Quality Index
 QoL: Quality of Life
 TIA: Transient Ischaemic Attack

- Randerath W, Verbraecken J, Andreas S, et al. Definition, discrimination, diagnosis and treatment of central breathing disturbances during sleep. *Eur Respir J* 2017; 49: 1600959 [https://doi.org/10.1183/13993003.00959-2016].
- Randerath WJ, Schiza SE, Arzt M, et al. European Respiratory Society and European Sleep Research Society statement on the treatment of central sleep apnoea with adaptive servo-ventilation. *Eur Respir J* 2025; 66: 2500263 [DOI: 10.1183/13993003.00263-2025].
- Tamisier R et al. Analysis of impact on Pittsburgh sleep quality index in a wide spread of CSA treated with ASV: 6-month follow-up FACIL-VAA study results. *ERJ* 2022. doi:10.1183/13993003.congress-2022.4688
- Arzt M et al. Effects of Adaptive Servo-Ventilation on Quality of Life: The READ-ASV Registry. *Ann Am Thorac Soc*. 2024 doi:10.1513/AnnalsATS.202310-908OC
- Tamisier R et al. Adaptive servo ventilation for sleep apnoea in heart failure: the FACE study 3-month data. *Thorax*. 2022 doi:10.1136/thoraxjnl-2021-217205
- Tamisier R et al. FACE study: 2-year follow-up of adaptive servo-ventilation for sleep-disordered breathing in a chronic heart failure cohort. *Sleep Med*. 2024 doi:10.1016/j.sleep.2023.07.014.13.
- Benjafeld AV et al. Estimation of the global prevalence and burden of central sleep apnoea: a literature-based analysis. *Lancet Respir Med*. 2019 doi:10.1016/S2213-2600(19)30198-5
- Randerath WJ et al. Central sleep apnoea in heart failure: one size does not fit all. *Thorax*. 2022 doi:10.1136/thoraxjnl-2021-217694
- Ponikowski P, Voors AA, Anker SD, et al. 2016 ESC Guidelines for the diagnosis and treatment of acute and chronic heart failure: The Task Force for the diagnosis and treatment of acute and chronic heart failure of the European Society of Cardiology (ESC) Developed with the special contribution of the Heart Failure Association (HFA) of the ESC. *Eur Heart J* 2016;37:2129-2200.