



AirSense™ 10
AUTOSET for Her

A new beginning
in therapy for women

OSA in women
Tailored solutions for Her
AutoSet™ for Her algorithm



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Women and OSA

OSA has traditionally been considered to be a male disease. However, recent studies show that:

OSA is **also highly prevalent in women:**

- between 9% and 50% of women suffer from OSA,^{1,2}
- 23.4% of women have an AHI ≥ 15 ,³
- 14% of 55-77 years old have severe OSA.¹

OSA is correlated with **serious short and long term consequences for women:**

- anxiety, depression, increased daytime sleepiness, reduced sleep quality,⁴
- higher odds of developing cardiovascular diseases, diabetes and reflux/oesophagitis/gastritis,⁵
- 3.5 times more risk of cardiovascular death compared to healthy subjects.⁶



1 Young, T., et al., The occurrence of sleep-disordered breathing among middle-aged adults, *N Engl J Med*, 1993.

2 Franklin et al., Sleep apnoea is a common occurrence in females, *Eur Respir J*, 2012.

3 Heinzer Prevalence of sleep-disordered breathing in the general population: The Hynolaus study, *Lancet Respir Med*, 2015.

4 Ye et al., Gender Differences in Obstructive Sleep Apnea and Treatment Response to Continuous Positive Airway Pressure, *J. Clin. Sleep Med.*, 2009.

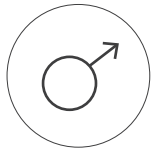
5 Greenberg-Dotan et al., Gender Differences in Morbidity and Health Care Utilization Among Adult Obstructive Sleep Apnea Patients, *Sleep*, 2007.

6 Campos-Rodriguez et al., Cardiovascular Mortality in Women With Obstructive Sleep Apnoea With or Without Continuous Positive Airway Pressure Treatment: A Cohort Study, *Annals of Internal Medicine*, 2012.

Fewer women are diagnosed

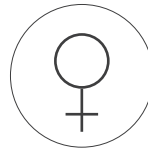
Up to 90% of women with moderate to severe OSA are **undiagnosed**.¹ OSA symptoms present differently in women. **Women are more symptomatic at lower AHIs** than males with similar disease severity:²

Men: typical symptoms



- Snoring,
- witnessed apnoeas,
- high Epworth sleepiness scores.

Women: typical symptoms³



- Softer snoring,
- lower Epworth sleepiness scores,
- insomnia,
- restless legs,
- fatigue-daytime tiredness,
- depression,
- headaches and muscle pain.

Additionally, women may:

- use different words to describe symptoms,
- be less inclined to complain about tiredness, or “unladylike” snoring,
- have a higher threshold for sleepiness,⁴
- typically go to medical appointments on their own,² depriving their physician of the opportunity to hear information about any witnessed snoring/apnoeas from their bed partner.

Even when women present “typical” OSA symptoms, they are less likely to be referred to sleep clinics¹ and may be **misdiagnosed with depression, hypothyroidism or other illness**.^{4,5}

1 Snoring and Sleep Apnea in Women, British Snoring and Sleep Apnea Association, http://www.britishtsnoring.co.uk/snoring_&_sleep_apnoea/women.php, last accessed 09.02.15

2 Young et al., The gender bias in sleep apnea diagnosis. Are women missed because they have different symptoms?, *Arch Intern Med*, 1996.

3 Valipour et al., Gender-related differences in symptoms of patients with suspected breathing disorders in sleep: a clinical population study using the sleep disorders questionnaire, *Sleep*, 2007.

4 Lin et al., Gender differences in obstructive sleep apnea and treatment implications, *Sleep Med Rev*, 2008.

5 Shepertycky et al., Differences between Men and Women in the Clinical Presentation of Patients Diagnosed with Obstructive Sleep Apnoea Syndrome, *Sleep*, 2005.

OSA in women: different events

Women with OSA have:¹

- lower AHIs,
- shorter apnoeas,
- less severe hypopnoeas,
- more REM-based events,
- more flow limitations leading to Respiratory Effort Related Arousals (RERAs).

They may:

- be more sensitive to high pressures and fast pressure changes,
- require smaller masks adapted to their morphology.

ResMed Air Solutions addresses the unique therapy needs of women thanks to the AirSense 10 AutoSet for Her device, including the first **dedicated algorithm** that specifically treats and responds to female breathing patterns.

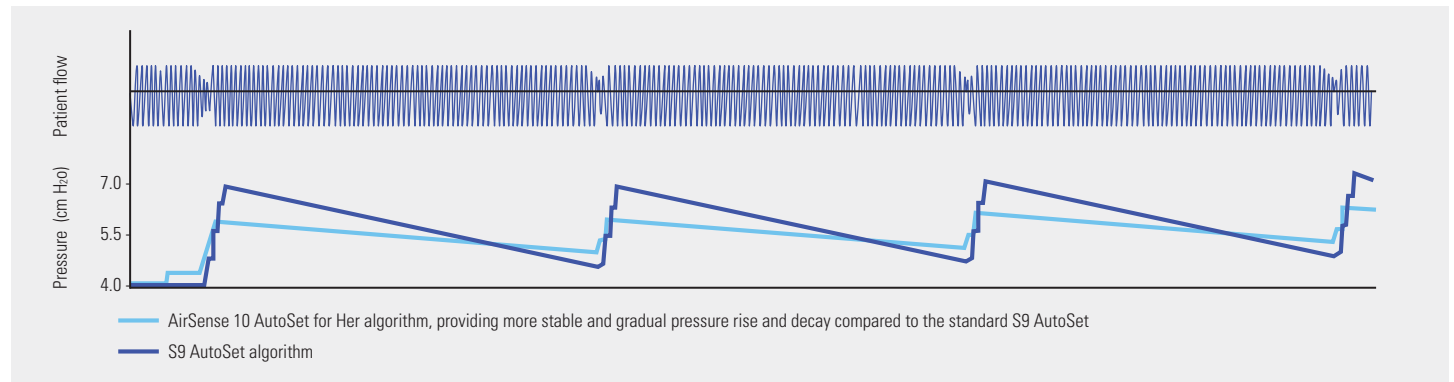


AutoSet for Her: a unique algorithm for gentler therapy

Offers even more comfort and helps to prevent arousal due to high or fast pressure changes.

Compared to the standard AutoSet algorithm:

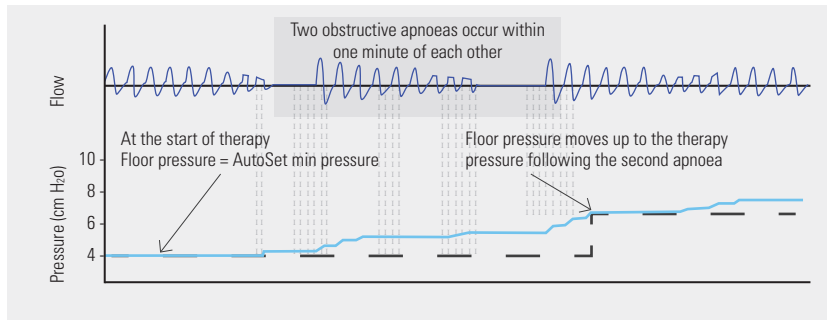
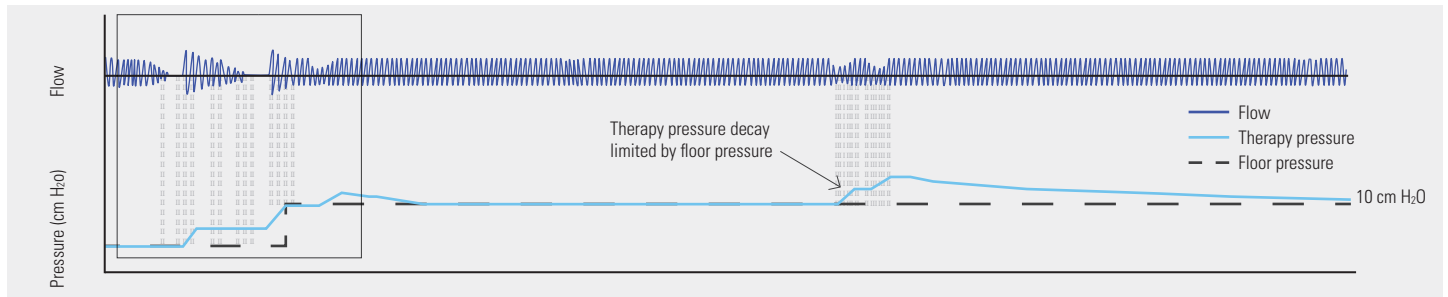
- pressure increases are lower,
- pressure increases are capped for each breath,
- above 12 cm H₂O, response to snore and flow limitation is prioritised,
- pressure decay is slower.



AutoSet for Her algorithm: preventing REM-related events

To help **prevent the REM-related events** that are typical of OSA in women, the AutoSet for Her algorithm now includes a floor pressure that is:

- activated after 2 apnoeas or hypopnoeas occur within a minute,
- capped at 10 cm H₂O,
- reset when the treatment session ends.

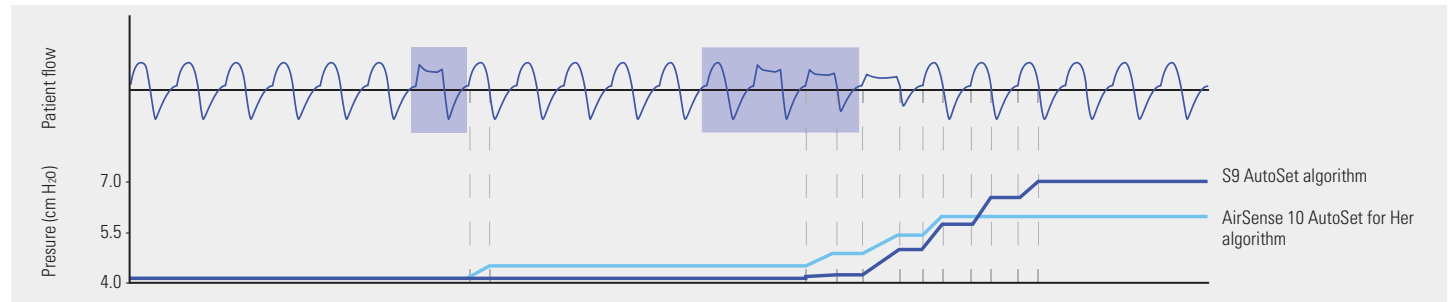


AutoSet for Her algorithm: better patient care

Women are more sensitive to increased respiratory efforts. To reflect this, the pressure response to flow limitations in the AutoSet for Her has been fine-tuned¹ to help reduce the occurrence of RERAs and ensure a better night's sleep.

Compared to the standard AutoSet algorithm, the **AutoSet for Her algorithm**:

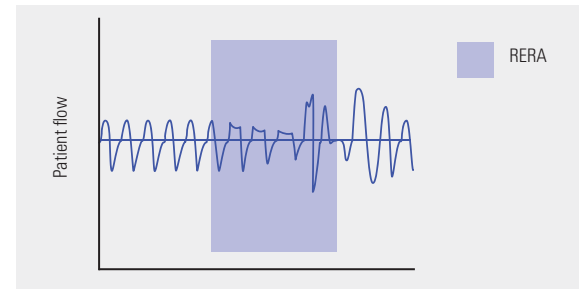
- responds more sensitively thanks to a 1-breath moving average,
- responds with reduced intensity as the pressure rises.



For **clearer insight** into female OSA therapy and **better efficacy assessment**, the AirSense 10 AutoSet for Her scores RERAs² if:

- a minimum of 2 flow-limited breaths (without an hypopnoea) are detected,
- the flow-limited breaths are followed by a step change in ventilation.

RERAs are reported in ResScan™ and AirView™, ResMed's cloud-based patient management systems.



¹ Isetta et al., An automatic positive airway pressure algorithm designed for women: a bench study. Poster presented at the ERS, September 2014

² Berry et al., The AASM Manual for the Scoring of Sleep and Associated Events: Rules, Terminology and Technical Specifications, Version 2.0, *American Academy of Sleep Medicine*, 2012.

