



SensAwake™

Ambient
Tracking®
Plus

SensAwake™
Sensitive to Sleep




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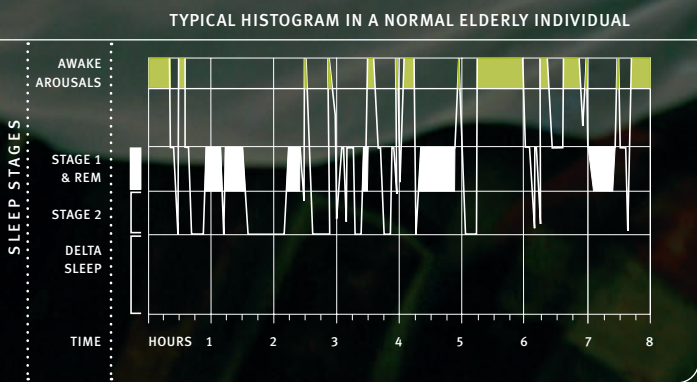
SleepStyle™
SLEEP PERFORMANCE FOR
AN ENERGIZED LIFESTYLE

Fisher & Paykel
HEALTHCARE

Patients commonly arouse from sleep and experience awake states.

PATIENTS ARE INTOLERANT OF THE DELIVERED PRESSURE AND CAN HAVE DIFFICULTY RETURNING TO SLEEP. TO AID THE TRANSITION BACK TO SLEEP, PATIENT COMFORT IS CRITICAL.

 **DIAGRAM:**
Typical sleep / wake pattern in a normal elderly individual. Solid white area represents REM sleep; green areas represent arousals and awake states.
Source: Respiratory Care: A Guide to Clinical Practice 4th ed. 1997 Burton et al. Section 11, Aran et al. Sleep-Disordered Breathing, Pg 295 - 308.



A close-up photograph of a human eye. The eye is looking directly at the camera. A green contact lens is visible, covering the iris. The pupil is dark and circular. The eyelashes are long and dark. The skin around the eye is light-colored.

The Problem

Up to 9% of the adult population are affected by Obstructive Sleep Apnea (OSA) with a trend of increasing prevalence.⁽¹⁻²⁾

The common treatment for OSA is positive airway pressure therapy. However, patients can be intolerant of the pressure when they arouse from sleep and experience awake states.

Pressure is not required during wakefulness and can cause discomfort, making it difficult for patients to return to sleep.

As this discomfort may be detrimental to overall therapy compliance, lowering the pressure during awake states can improve comfort and compliance.

REFERENCES:

- (1) Young et al, Epidemiology of Obstructive Sleep Apnea; A Population Health Perspective. *Am J Respir Crit Care Med* 2002; 165:1217-1239.
- (2) Young T, Palta M, Dempsey J, et al. The occurrence of sleep-disordered breathing in among middle-aged adults. *N Engl J Med* 1993; 328:1230-1235.

SleepStyle™ 200

AUTO SERIES

The SleepStyle™ 200 Auto Series provides pressure on demand and innovative **SensAwake™** Technology to personalize sleep treatment to patients' needs.



SensAwake™

Introducing **SensAwake™**



SENSAWARE™

UNIQUE SENSAAWAKE™ TECHNOLOGY SENSES THE CRITICAL AWAKE STATE OF PATIENTS AND PROMPTLY REDUCES THE DELIVERED PRESSURE TO THE LOWEST, MOST COMFORTABLE LEVEL. TREATMENT IS PERSONALIZED DURING SLEEP AND AWAKE STATES. SENSAAWAKE™ MAKES RETURNING TO SLEEP EASIER TO INCREASE SLEEP QUALITY AND TO ULTIMATELY IMPROVE THERAPY UPTAKE.



AMBIENT TRACKING® PLUS

AMBIENT TRACKING® PLUS TECHNOLOGY PROVIDES EFFECTIVE HUMIDIFICATION UNDER CHANGING CONDITIONS. THIS HUMIDIFICATION TECHNOLOGY COMPENSATES FOR CHANGING TEMPERATURES AND HUMIDITY LOSS DURING LEAKS.

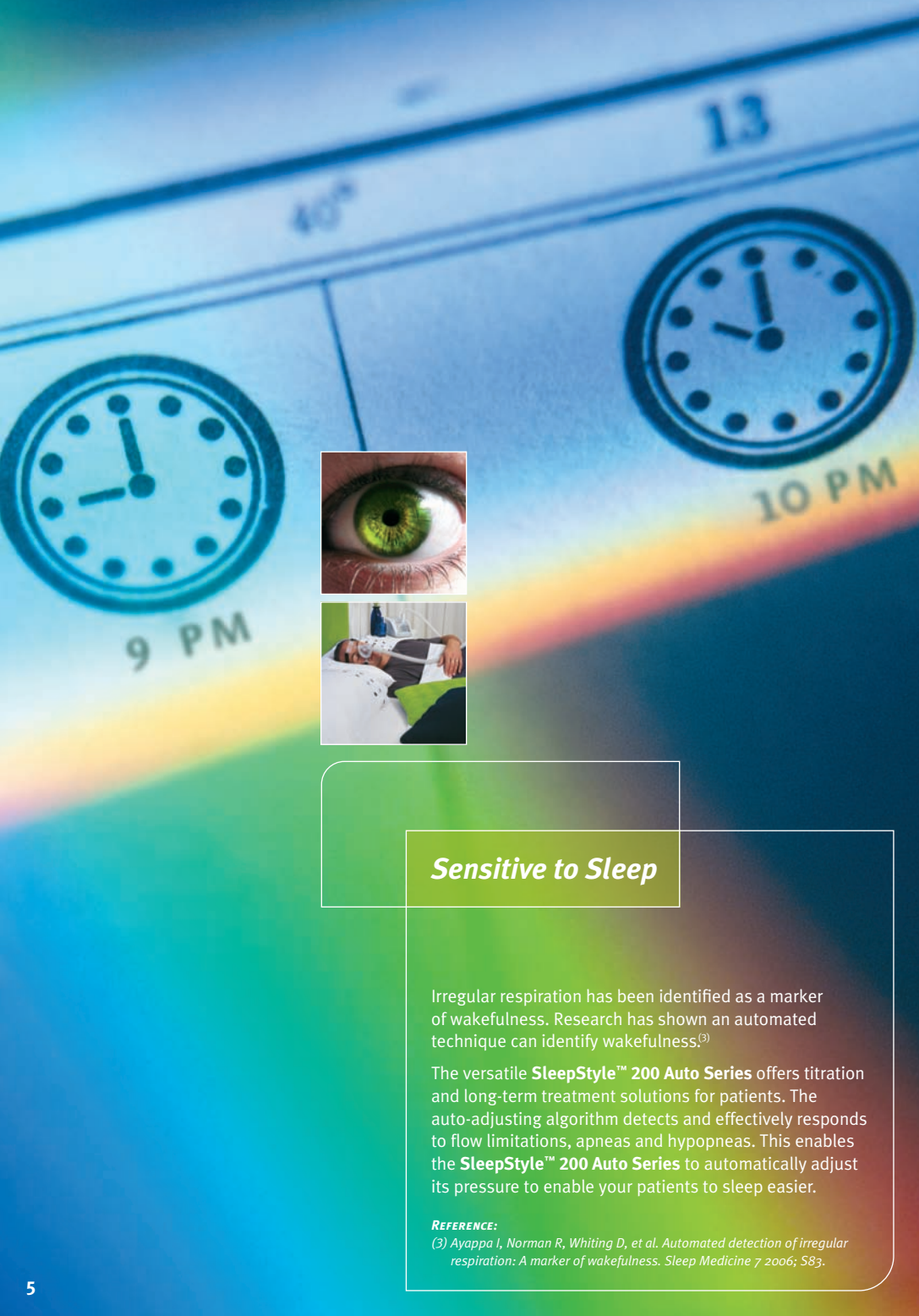


The Solution

SensAwake™

The **SleepStyle™ 200 Auto Series** uses unique **SensAwake™ Technology** to sense the critical awake state of patients and promptly reduce the delivered pressure to the lowest, most comfortable level. Through the combination of **SensAwake™** and the advanced auto-adjusting system, treatment is personalized during sleep and awake states. This makes returning to sleep easier to increase sleep quality and ultimately improve therapy uptake.

senses the changes in breathing between sleep and awake states.



Sensitive to Sleep

Irregular respiration has been identified as a marker of wakefulness. Research has shown an automated technique can identify wakefulness.⁽³⁾

The versatile **SleepStyle™ 200 Auto Series** offers titration and long-term treatment solutions for patients. The auto-adjusting algorithm detects and effectively responds to flow limitations, apneas and hypopneas. This enables the **SleepStyle™ 200 Auto Series** to automatically adjust its pressure to enable your patients to sleep easier.

REFERENCE:

(3) Ayappa I, Norman R, Whiting D, et al. Automated detection of irregular respiration: A marker of wakefulness. *Sleep Medicine* 7 2006; 583.

FIGURE 1:
Pattern of regular breathing seen during non-REM sleep in the absence of sleep-disordered breathing.

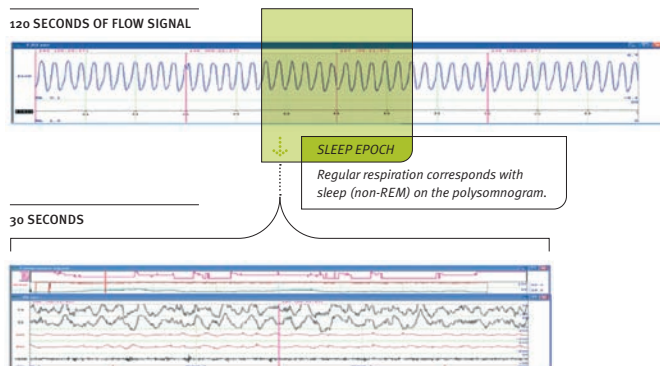
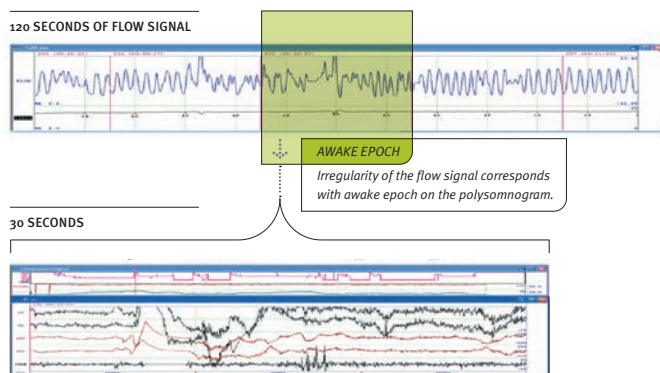


FIGURE 2:
Irregularity of the airflow signal during a transition from sleep to wake.



REFERENCES:

- (4) Norman R, Ayappa I, Whiting D, et al. Irregular respiration as a marker of anxious wakefulness. *ATS 2005 International Conference*. San Diego, California, USA, 2005; A64.
- (5) Ayappa I, Norman R, Whiting D, et al. Automated detection of irregular respiration: A marker of wakefulness. *Sleep Medicine* 7 2006; S83.
- (6) Vgontzas A and Kales A. Sleep and its disorders. *Annual Review of Medicine* 1999; 50:387-400.

IRREGULAR RESPIRATION AS A MARKER OF WAKEFULNESS:

Sleep in the absence of disordered breathing is marked by regular respiration (Fig. 1). Transient ventilatory irregularities often occur at the transition from sleep to awake states (Fig. 2).⁽⁴⁾ SensAwake™ automatically detects these sleep/wake transitions using a sophisticated algorithm.⁽⁵⁾ Upon detecting the awake state the pressure is promptly reduced, to alleviate discomfort and facilitate a rapid return to sleep.

SensAwake™ is a technological breakthrough in the delivery of positive airway pressure. The SensAwake™ algorithm is intuitive⁽⁵⁾ and pays particular attention to the withdrawal of pressure in the awake state. SensAwake™ personalizes therapy to the patient's unique sleep pattern.⁽⁶⁾

Your Patient's Comfort



YOUR PATIENT'S COMFORT



PERSONALIZED PRESSURE



HUMIDIFICATION

IT HAS BEEN SHOWN THAT PATIENT COMFORT IS INCREASED WITH THE USE OF PERSONALIZED PRESSURE⁽⁷⁾ AND HEATED HUMIDIFICATION.⁽⁸⁾



PATIENTS RECEIVE EFFECTIVE AND COMFORTABLE TREATMENT DUE TO ADVANCED PERSONALIZED PRESSURE DELIVERY THAT ADJUSTS TO SUIT THEIR NEEDS DURING SLEEP AND AWAKE STATES.



EFFECTIVE HUMIDIFICATION UNDER CHANGING CONDITIONS IS ACHIEVED BY AMBIENT TRACKING® PLUS, MINIMIZING DISRUPTIVE CONDENSATION AND MAXIMIZING HUMIDITY TO PREVENT NASAL DISCOMFORT.

REFERENCES:

- (7) Haniffa M, Lasserson TJ, Smith I. Interventions to improve compliance with continuous positive airway pressure for obstructive sleep apnea. *Cochrane database of systematic reviews*. 2004, Issue 4. Art. No.: CD003531. DOI: 10.1002/14651858.CD003531.pub2. Marrone O, Resta O, Salvaggio A, et al. Preference for fixed or automatic CPAP in patients with obstructive sleep apnea. *Sleep Medicine* 2004; 5(3):247-251.
- (8) Massie CA, Hart RW, Peralez K, et al. Effects of humidification on nasal symptoms and compliance in sleep apnea patients using continuous positive airway pressure. *Chest* 1999; 116:403-408.

Upon waking, comfort is critical to aid the transition back to sleep. The **SleepStyle™ 200 Auto Series** is designed for enhanced patient comfort.

Patients receive effective and comfortable therapy with personalized pressure delivery and humidification during sleep and awake states. Personalized therapy enhances the quality of sleep and encourages improved patient compliance.



Managing Your Patients

SensAwake™

Ambient
Tracking®
Plus

All Fisher & Paykel Healthcare products are designed to deliver real benefits for you and your patients. **The SleepStyle™ 200 Auto Series** is an advanced auto-adjusting system designed to enhance patient comfort and improve therapy uptake while contributing to the efficiencies of your service(s).

It employs a number of innovative features that minimize set-up times and patient follow-up. Analysis of therapy is streamlined by the new patient efficacy reporting software, **PerformanceMaximizer.™** The **SmartStick™** offers easy monitoring of treatment parameters for comprehensive patient management.

The table below shows the range of performance features available in the **SleepStyle™ 200 Auto Series**:

SleepStyle™ 200 Auto Series			
Performance Category	Performance Feature		
Pressure Control	A	Auto-adjusting CPAP	●
	B	SensAwake™ Technology	●
	C	Altitude Adjustment Control – Manual	●
	D	Leak Compensation	●
Humidification Delivery	E	Fully Integrated System	●
	F	Ambient Tracking® Plus	●
Performance Logging	G	PerformanceMaximizer™ Software	●
	H	SmartStick™ – Removable Media	●

THE SLEEPSTYLE™ 200 AUTO SERIES FEATURES:



Auto-adjusting CPAP Technology:
The **SleepStyle™ 200 Auto Series** offers pressure on demand with advanced flow-based sensing technology. The auto-adjusting algorithm detects and effectively responds

SensAwake™

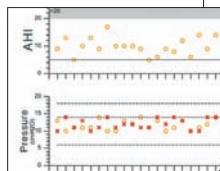


SensAwake™
Patients commonly arouse from sleep and experience awake states, during which they are often intolerant of pressure. **SensAwake™** uses flow to monitor patients' breathing patterns, identifies these awake states and promptly reduces the pressure. This aids the transition back to sleep in order to enhance acceptance of treatment.



Ambient Tracking® Plus

Ambient Tracking® Plus:
This technology provides effective humidification under changing conditions. It minimizes condensation to prevent mask pressure fluctuations and algorithm disruptions while maximizing humidity during leaks to prevent nasal discomfort.



Removable Media:
The **SmartStick™**, along with **PerformanceMaximizer™** software, allows for easy monitoring of treatment efficacy and comprehensive patient management.

For more information, please contact your local Fisher & Paykel Healthcare representative:

Fisher & Paykel Healthcare has a policy of continuous product improvement and reserves the right to alter specifications without notice. Patented in principal countries of the world.

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