A new bilevel therapy experience

From the sleep and respiratory care therapy brand most trusted by sleep physicians[1] comes ResMed AirCurve™ 11, a new bilevel series that takes therapy to the next level.

For patients who benefit from pressure support

AirCurve 11 VAuto and ASV* enable providers to make informed decisions about care and help drive positive therapy outcomes, and provide trusted algorithms and personalized patient support.

Bilevel therapy provides two levels of support, inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP).

AirCurve 11 VAuto bilevel PAP devices treat patients with obstructive sleep apnea and help those struggling to adhere to PAP therapy.

AirCurve 11 ASV* offers personalized therapy for patients presenting with central sleep apnea (CSA), obstructive sleep apnea, mixed apneas and periodic breathing.

HCPC: E0470   HCPC: E0471

These new devices combine the trusted algorithms of AirCurve 10 with ResMed Air11 features.

* 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 apnea.

Next-level support for patients and providers

With the inclusion of proven Air11 features, AirCurve 11 VAuto and AirCurve 11 ASV* equip patients and care teams with more tools to help them succeed.

Using coaching and the ability to track and view nightly sleep data, myAir and AirView together have been found to improve patient compliance from

70% ↗ 87% [2]

myAir™

The online coaching and support program and app for patients that's like having their own personal sleep coach[†], enhanced with support for bilevel patients.[‡]

Masks

ResMed masks are designed to provide an optimized therapy experience with Air11 devices and myAir.

AirView™

A secure, cloud-based system that helps providers manage patients, enabling an informed pathway to optimal care.

AirCurve™ 11

VAuto and ASV* bilevel devices feature the trusted algorithms used in AirCurve 10 devices.

Personal Therapy Assistant

One of the many features in myAir that offers interactive, voice-guided instructions and videos to help guide patients through equipment setup and get comfortable with therapy.[**]

Care Check-In

Sleep quality includes restful, restorative sleep. Please rate your usual sleep quality.

NEXT

Care Check-In

Care Check-In questions specific to bilevel therapy goals and acclimation obstacles providing support to patients and insights to providers.[**††]

The majority of surveyed patients who use Personal Therapy Assistant with their AirSense 11, part of the Air11 platform, reported that the feature helped them get started on PAP therapy.[3]

91%
of CPAP patients who completed all Care Check-In checks **achieved compliance** for AirSense™ 11.[4]

Patient name and data are fictional.

AirCurve 11 VAuto

Some patients find it challenging to adapt to CPAP therapy as they are unable to breathe against a continuous flow of air at a set pressure level. Adjusting becomes even harder when CPAP pressures must be higher to maintain airway patency. As a bilevel PAP device, AirCurve 11 VAuto is designed to improve comfort and help compliance by providing a higher pressure during inhalation and a lower pressure during exhalation. This design allows the device to align more closely with the patient's natural breathing pattern.

VAuto algorithm

VAuto features the Easy-Breathe waveform and renowned ResMed AutoSet™ algorithm—a widely clinically studied algorithm in the field of sleep-disordered breathing (SDB). VAuto continually monitors each patient's unique breathing pattern on a breath-by-breath basis. The algorithm makes automatic adjustments to treat patients effectively and in the most comfortable way throughout the night. Working in sync with TiControl™, Vsync ensures patient–device synchrony even in conditions of high leak. Key elements of the algorithm include:

1 AutoEPAP
Min EPAP and max IPAP set the pressure ranges in which the AutoSet algorithm can operate in response to flow limitation, snore, and obstructive apneas. This ensures a patient only receives the amount of pressure they need to optimize therapy.
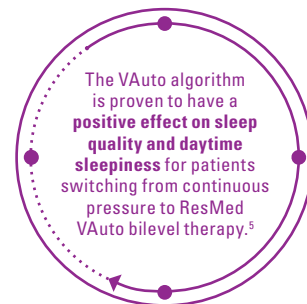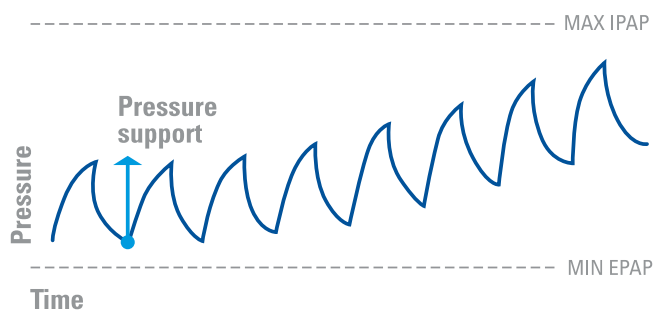
2 Pressure support
Pressure support sets the difference between inspiratory and expiratory pressure and is fixed throughout the night.

3 Cycle sensitivity
The default cycle sensitivity setting is appropriate for most patients. However, for patients who might exhibit discomfort and synchrony challenges, trigger sensitivity can be adjusted to support initiation of IPAP with less patient effort. For patients who experience excessive or unintentional leak, cycle sensitivity enables fine-tuned sensing of the completion of the breath or patient exhalation.

4 TiControls
The default TiControls settings are appropriate for most patients. However, adjustments allow the clinician to set the Ti minimum and Ti maximum limits. These can play a significant role in maximizing synchronization by effectively intervening to limit or prolong the inspiratory time when required.

The VAuto algorithm is proven to have a **positive effect on sleep quality and daytime sleepiness** for patients switching from continuous pressure to ResMed VAuto bilevel therapy.[5]

AirCurve 11 ASV*

Standard therapies are often unable to fully normalize breathing for patients with pauses in breathing due to the absence of respiratory effort. These patients may present with central sleep apnea, obstructive sleep apnea, mixed apneas or periodic breathing, leading to discomfort and arousals. ResMed's adaptive servo-ventilation (ASV*) device offers personalized therapy for these patients.

ASVAuto algorithm

Tracking 13 points on every breath cycle 50 times per second, the ASVAuto algorithm is designed to use each patient's unique minute ventilation target and respiratory rate to deliver therapy that stabilizes ventilation. Continuously monitoring the shape of the patient's breath informs the algorithm at what points trigger and cycle are occurring, and the length of inspiration, making therapy feel like the patient's own breath. Key elements of the algorithm include:

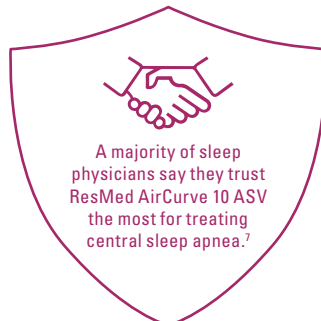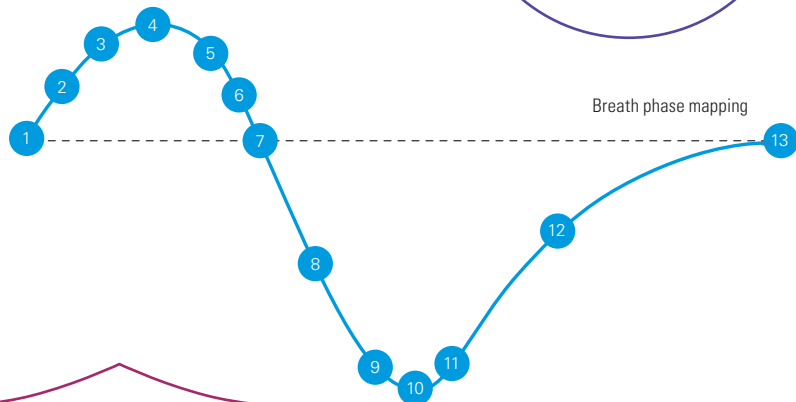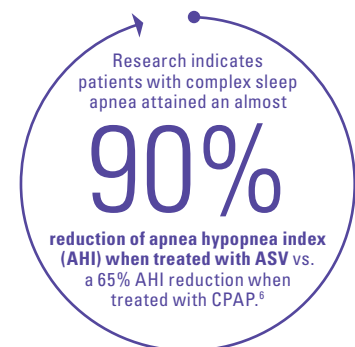**1 Auto-adjusting inspiratory pressure support**
Designed to counterbalance ventilatory instability, pressure support auto-adjusts to maintain each patient's unique minute ventilation target (tidal volume and respiratory rate) while maintaining patient-device synchrony and comfort.

2 AutoEPAP
Generated by ResMed's proven AutoSet algorithm that responds to flow limitation, snoring and obstructive apneas, AirCurve ASV auto-adjusts expiratory positive airway pressure (EPAP) to maintain upper airway patency.

3 Auto backup rate
Uses breath phase mapping to provide a timed backup rate synchronized with the patient's own breathing to maintain the target minute ventilation in the case of apneas.
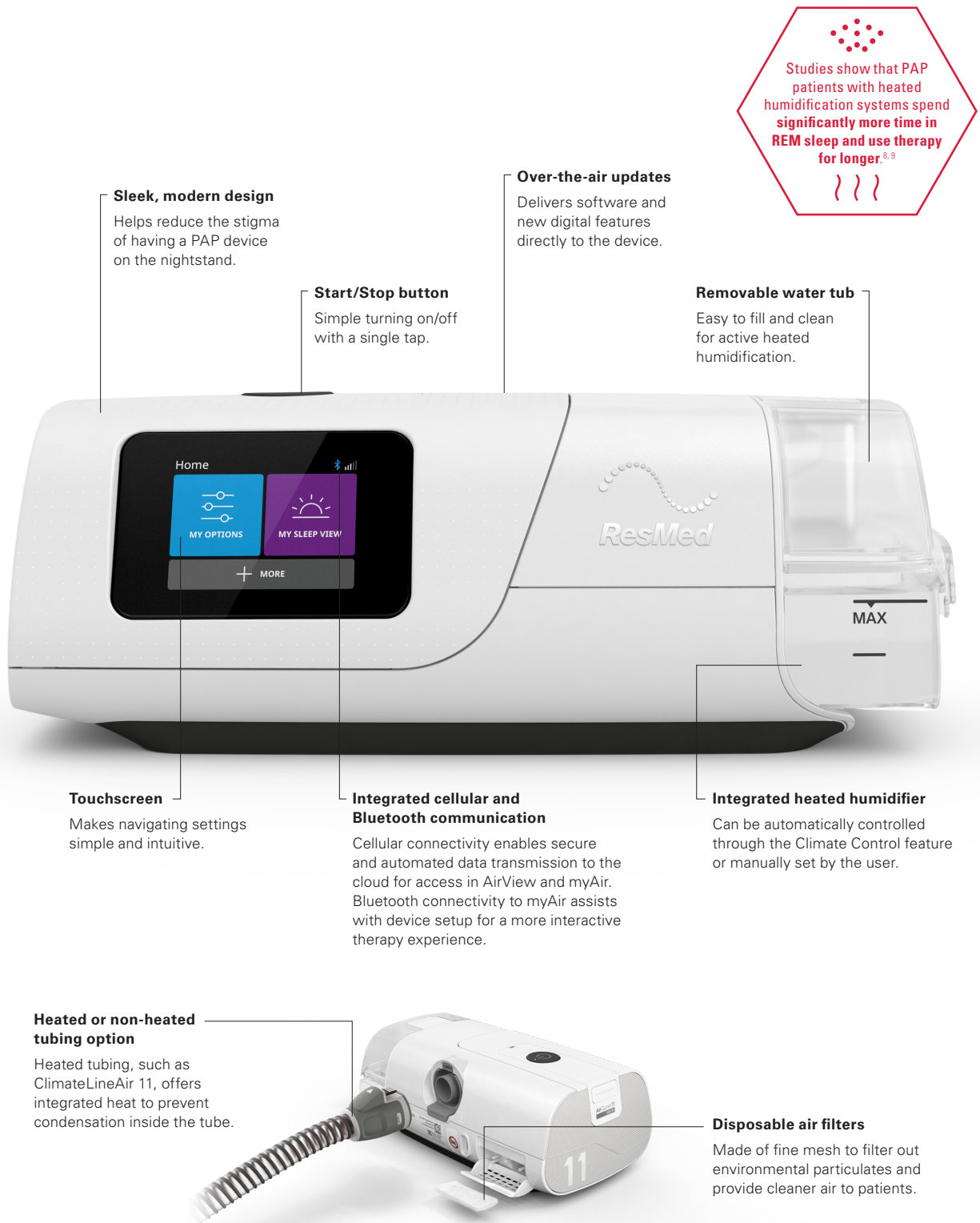
Research indicates patients with complex sleep apnea attained an almost

90%

reduction of apnea hypopnea index (AHI) when treated with ASV vs. a 65% AHI reduction when treated with CPAP.[6]

Breath phase mapping

A majority of sleep physicians say they trust ResMed AirCurve 10 ASV the most for treating central sleep apnea.[7]

AirCurve 11
ASV

AirCurve 11 highlights

AirCurve 11 bilevel devices are designed to help improve the patient therapy experience while also helping you achieve your business goals through a powerful combination of features and settings.

Studies show that PAP patients with heated humidification systems spend **significantly more time in REM sleep and use therapy for longer.**[8, 9]

Sleek, modern design
Helps reduce the stigma of having a PAP device on the nightstand.

Over-the-air updates
Delivers software and new digital features directly to the device.

Start/Stop button
Simple turning on/off with a single tap.

Removable water tub
Easy to fill and clean for active heated humidification.

Home

MY OPTIONS

MY SLEEP VIEW

+ MORE

ResMed

MAX

Touchscreen
Makes navigating settings simple and intuitive.

Integrated cellular and Bluetooth communication
Cellular connectivity enables secure and automated data transmission to the cloud for access in AirView and myAir. Bluetooth connectivity to myAir assists with device setup for a more interactive therapy experience.

Integrated heated humidifier
Can be automatically controlled through the Climate Control feature or manually set by the user.

Heated or non-heated tubing option
Heated tubing, such as ClimateLineAir 11, offers integrated heat to prevent condensation inside the tube.

Disposable air filters
Made of fine mesh to filter out environmental particulates and provide cleaner air to patients.

Sleep disordered breathing therapy matrix

	Obstructive sleep apnea (OSA)	Central sleep apnea (CSA)
Description	OSA involves a decrease or complete halt in airflow despite an ongoing effort to breathe. It occurs when the upper airway collapses during sleep, usually due to muscle and soft tissue relaxation.	CSA occurs when the neurological control of breathing is impaired. The upper airway is not necessarily blocked. Instead, pauses in breathing occur due to the absence of respiratory effort. CSA can also be associated with periodic irregular breathing. The most common type of periodic breathing is Cheyne-Stokes Respiration or CSR, in which central apneas alternate with periods of overbreathing or hypopneas.
Therapy goals	Maintain airway patency and reliable breath synchronization even in the face of variable mask and mouth leaks. Bilevel therapy can improve comfort and help compliance by more naturally mimicking normal breathing where inhalation requires more effort than exhalation.	Counterbalance ventilator instability by automatically adjusting inspiratory pressure support, reduce respiratory events, and address upper airway collapse. Standard therapies are often unable to fully normalize breathing, which leads to discomfort and arousals.
Therapy modality	Automatic bilevel therapy provides two levels of support, an inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP) based on the recognition of obstructive events such as flow limitation, snoring and obstructive apneas, automatically adjust to provide effective treatment.	Bilevel servo-ventilation (ASV*) offers a backup rate. In addition to bilevel pressure settings, an inspiratory positive airway pressure (IPAP) and expiratory positive airway pressure (EPAP), the servo-ventilation algorithm is capable of leaning a patient's ventilatory pattern and adjusting pressure delivery to maintain stable ventilation.
CMS requirements	One of the following: 1) AHI or RDI >= 15 events /hr; min of 30 events; or, 2) AHI or RDI >= 5 and <=14 events/hr with min of 10 events and documentation of excessive daytime sleepiness, impaired cognition, mood disorders, or insomnia; or, hypertension, ischemic heart disease or history of stroke	Prior to initiating therapy, a complete facility-based,attended PSG was performed documenting both of the following: 1) Diagnosis of CSA or CompSA and 2) Significant improvement of the sleep-associated hypoventilation with use of an E0470 or E0471 on the settings the physician prescribed for initial use at home while breathing the usual FiO2

AirCurve 11 VAuto and ASV*

	AirCurve 11 VAuto	AirCurve 11 ASV*
HCPC	E0470	E0471
IFU	Obstructive sleep apnea (OSA)	Central sleep apnea (CSA), obstructive sleep apnea, mixed apneas and periodic breathing
Operating pressure range (cm H2O)	3-25	4-25
ResMed device therapy modes	CPAP, S, VAuto	CPAP, ASV*, ASVAuto
Features	**VAuto mode**	**ASVAuto mode**
CSA detection	X	
Vsync automatic leak management	X	
Adjustable trigger and cycle sensitivity	X	
Adjustable TiControls (Ti Max/Ti Min)	X	
Auto-adjustment of pressure for OSA events	X	X

Device ordering information

	Model number	HCPC
AirCurve 11 VAuto USA CO	**39018** – Includes HumidAir™ 11 standard water tub and tubing	E0470 + E0562 + A7037 + A9279
AirCurve 11 VAuto USA TRI	**39019** – Includes HumidAir™ 11 standard water tub and ClimateLineAir 11 tubing	E0470 + E0562 + A4604 + A9279
AirCurve 11 VAuto CAN TRI	**39020** – Includes HumidAir™ 11 standard water tub and ClimateLineAir 11 tubing	—
AirCurve 11 ASV USA CO	**39012** – Includes HumidAir™ 11 standard water tub and tubing	E0471 + E0562 + A7037 + A9279
AirCurve 11 ASV USA TRI	**39013** – Includes HumidAir™ 11 standard water tub and ClimateLineAir 11 tubing	E0471 + E0562 + A4604 + A9279
AirCurve 11 ASV CAN TRI	**39023** – Includes HumidAir™ 11 standard water tub and ClimateLineAir 11 tubing	—

AirCurve 11 accessory ordering information		
	Model number	HCPC
HumidAir 11 standard tub	39100	A7046
HumidAir 11 cleanable tub	39101	A7046
ClimateLineAir™ 11 heated tubing	39102	A4604
SlimLine™ tubing	36810	A7037
Air11 DC-DC converter	39231	A9279
Air11 filters, 1 pack	39300	A7038
Air11 filters, 2 pack	39301	A7038
Air11 filters, 12 pack	39302	A7038
Air11 filters, 50 pack	39303	A7038
Air11 filters, hypoallergenic, 1 pack	39304	A7038
Air11 filters, hypoallergenic, 2 pack	39305	A7038
Air11 filters, hypoallergenic, 12 pack	39306	A7038
Air11 filters, hypoallergenic, 50 pack	39307	A7038
Filter door replacement	29108	—
Air 11 SD card pack ENV, 1 pack	39228	—
Air 11 SD card pack ENV, 10 pack	39229	—
AirCurve 11 SD card door	39233	—
Air11 side cover	39226	—
Air11 Air outlet	39220	—
Air11 PSU 90W USA	39206	—
AirCurve 11 user guide AMER Multi	398195	—
Air11 quick start guide	398122	—
Air 11 travel bag	39221	—
NONIN WristOx₂® Oximeter Model 3150 with BLE	7079666	—
NONIN expandable wrist band	7079667	—
NONIN single use wrist band, 15 pack	7079668	—
NONIN small soft sensor, WO2 connector	7079814	—
NONIN medium soft sensor, WO2 connector	7079815	—
NONIN large soft sensor, WO2 connector	7079816	—
NONIN single use sensor and wrist band, 15 pack	70710011	—

Take bilevel therapy to the next level with the AirCurve 11 bilevel series. With trusted algorithms, insights and robust patient support tools, you can make informed decisions about patient care to help improve therapy outcomes and encourage compliance.

Speak with your sales representative to learn more about AirCurve 11 VAuto and ASV*.

ResMed.com/AirCurve11