

The NIOV™ System

Uniquely designed to provide ambulatory ventilation



Breathe
NIOV™ 



“I do believe this ventilator is revolutionary and will turn the COPD community upside down... giving them hope for their future and a brighter tomorrow.”

Lynn McCabe, RRT
RCP Supervisor
Pulmonary Rehabilitation
Sharp Memorial Hospital

AN AMBULATORY VENTILATION SYSTEM

The NIOV System is uniquely designed to provide positive pressure that significantly increases tidal volume and improves ventilation.



DELIVERS PRESSURE AND VOLUME

Improving ventilation by augmenting patient's own breath



RELIEVES DYSPNEA

Shown to reduce dyspnea, allowing improved activity and exercise endurance^{1,2}



INCREASES OXYGENATION

Increasing tidal volume as it delivers supplemental oxygen, elevating SpO₂^{1,2}



REDUCES BREATHING EFFORT

Shown to reduce respiratory muscle effort¹



FACILITATES ACTIVITY

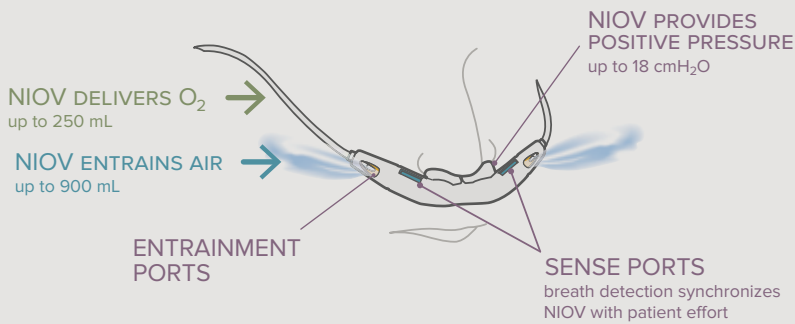
1 lb, palm-sized, battery powered device with unique nasal pillows interface



PROVEN CLINICAL RESULTS

Clinical research and clinician feedback have shown our device to be clinically impactful¹⁻⁹

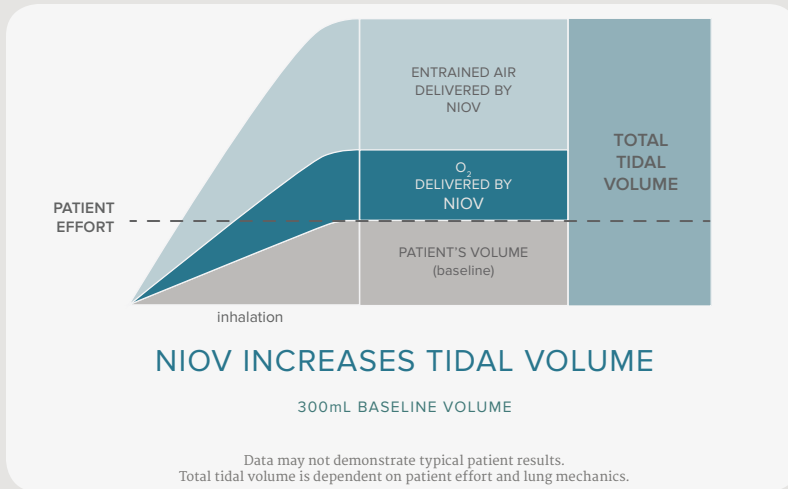




THE TECHNOLOGY

The NIOV System's clinically effective technology

The NIOV System delivers tidal volumes of up to 1,150 mL by providing positive inspiratory pressure with a maximum pressure up to 18 cmH₂O (8-12 cmH₂O is typical).⁴ The amount of pressure and volume provided is determined by patient breath effort and lung mechanics. The NIOV System detects a patient's spontaneous breathing via sensor ports located in the nasal interface and delivers synchronized volumes of air and oxygen with mean FiO₂ levels of 0.43.⁵ NIOV can be customized to each patient's respiratory and activity requirements. Patients are able to select from three clinician programmed activity settings that best meet their needs.



CLINICAL APPLICATION

NIOV— a continuum of care solution

IN HOME REHABILITATION

The NIOV System has the potential to reduce the number of exacerbations and hospital admissions in patients with respiratory insufficiency.⁶ Using the NIOV System, these individuals increased their exercise tolerance,¹ improved their 6-minute walk test (6MWT),⁷ and reduced their respiratory muscle activity.¹ Combining a portable design with advanced ventilatory performance, the NIOV System has been shown to facilitate the performing of activities of daily living, enhancing quality of life.⁸

EARLY HOSPITAL MOBILIZATION

The NIOV System can be used to assist patients in ICU settings to transition from complete bedrest to achieving early mobility milestones such as sitting, standing, and walking. Clinical research suggests that for patients with respiratory insufficiency, early rehabilitation during acute critical illness may minimize ICU acquired weakness and improve patient centered outcomes.⁹



DEVICE TECHNICAL SPECIFICATIONS

Physical

Weight:	1 lb (0.5 kg)
Height:	3.1" (7.9 cm)
Width:	7.5" (19.1 cm)
Depth:	1.3" (3.2 cm)
Mounting:	Belt clip Pole mount

Features

Delivered Gas:	Oxygen, with entrained air
Flow Delivery:	Closed loop proportional valve
Breath Sensing:	Proximal, in patient interface
Breath Rate:	2 to 40 breaths/minute, based on patient's spontaneous breathing
Internal Battery Duration:	4 hours, nominal use
Internal Battery Charge Time:	90% recharged within 2.5 hours
Alarm Types:	Audible and Vibrating
User Interfaces:	Push buttons LEDs Color LCD Touchscreen

Patient Accessible Settings

Power:	On, Off
Volume Delivery Settings:	Low, Medium, High
Trigger Sensitivity:	0 to 9 (-0.01 to -0.34 cm H ₂ O)
Alarm Loudness:	1 to 5
Vibrating Alarm:	On, Off
LCD Brightness:	1 to 5

Clinician Programmable Settings

Breath Timeout:	12 breaths/minute or 3 LPM
Volume Delivery:	50 to 250 mL, in 10 mL increments
Inspiratory Delivery Time:	10 to 40% of breath period

Monitors

Breath Rate:	To 50 breaths/minute
O ₂ Flow:	0.0 to 10.0 LPM
Device Run Time:	Displayed in hours and minutes

Clinician Programmable Alarms

Breath Timeout Period:	20 or 60 seconds
High Breath Rate:	5 to 120 breaths/minute
Low Breath Rate:	0 to 119 breaths/minute

Fixed Alarms

Low Source Pressure	High Delivery Pressure
High Source Pressure	High Circuit Pressure
Low Battery	High PEEP Pressure
Critically Low Battery	High Temperature
Low Delivery Pressure	System Fault

Supply Gas Specifications

Oxygen:	41-87 PSIG
Supply Gas Connector:	DISS #1240, per CGA V-5
O ₂ Supply Hose Lengths:	18" (optional) 36" (optional) 72" included 120" (optional)

AC Battery Charger Specifications

Input Voltage:	100 to 240 VAC
Input Frequency:	50 to 60 Hz
Input Current:	0.3 A maximum
Charge Status Indicator:	Red/Green LED

Environmental Specifications

Operating Temperature:	5° to 40° C (41° to 104° F)
Operating Humidity:	10% to 95% relative
Storage Temperature:	-20° to 60° C (-4° to 140° F)
Storage Humidity:	10% to 95% relative

Product Safety

Electrical Safety:	IEC 60601-1
Biocompatibility:	ISO 10993-1 not made with natural rubber latex



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References

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