

HAYEK MEDICAL



The Hayek RTX can be used in a variety of ways to aid breathing.



Introduction to Biphasic Cuirass Ventilation and the United Hayek RTX Ventilator

HAYEK MEDICAL



**Gary W. Mefford RRT
VP Clinical Operations
Hayek Medical Devices**

Gary.mefford@unitedhayek.com

**855-2 GET BCV
c. 817-845-5569**





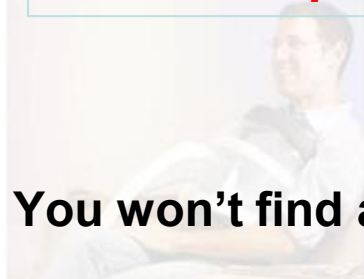
You need to take a close look at the Hayek



The complications of respiratory muscle weakness can include difficulty breathing and clearing secretions.

LIVING WITH ALS pg. 12

http://www.alsa.org/assets/pdfs/brochures/alsa_manual6.pdf



Biphasic Cuirass Ventilation

You won't find a better tool to support your fight to combat these complications than the



Hayek!!!



It can be a Fight for Survival



Respiratory insufficiency is a leading
cause of death in ALS

<http://mda.org/disease/amyotrophic-lateral-sclerosis/signs-and-symptoms/stages-of-als>

- Every NMD patient knows they are in a fight for breath and clear lungs
- Pulmonary illness can be your biggest enemy
- Arm yourself with the most powerful tool available

Biphasic Cuirass Ventilation



Hayek RTX



HAYEK MEDICAL

The challenges are clear

The key respiratory problems in NMD are as follows:

1. impaired cough resulting in poor clearance of airway secretions;
2. hypoventilation
3. Impaired chest wall range of motion and lung expansion
4. recurrent infections that exacerbate muscle weakness

Biphasic Cuirass Ventilation

subacute cough, asthma, chronic obstructive pulmonary disease

The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

With the **Hayek**, in one device you have high frequency chest wall oscillation, assist cough and non-invasive support of ventilation without a mask or trach needed



The Hayek RTX can be used in a variety of ways to aid breathing.



The Hayek is the clinical tool that can treat the key respiratory problems of NMD

1. With the combination of High Frequency Chest Wall Oscillation and Assisted Cough via cuirass the **Hayek** is superior to any single or combined therapeutic interventions for assisting pulmonary secretions up from the lower airways and then providing a means of assisting with coughing them out
2. As a means of non-mask, non-trach non-invasive ventilatory support the **Hayek** can be used to very effectively treat hypoventilation with many benefits not provided by NIPPV. Can also be used if trach is present with same benefits
3. Routine use of the Hayek provides a means of improving chest wall range of motion, pulmonary muscle strength and lung volume expansion
4. The highly effective airway clearance and cough assist as well as the therapeutic benefits of Biphasic Cuirass Ventilation provided by the Hayek combine in a single device with multiple uses to offer a strategic means of decreasing the reoccurrence of pulmonary infection thus improving quality of life for the NMD patient and those caring for them

HAYEK MEDICAL

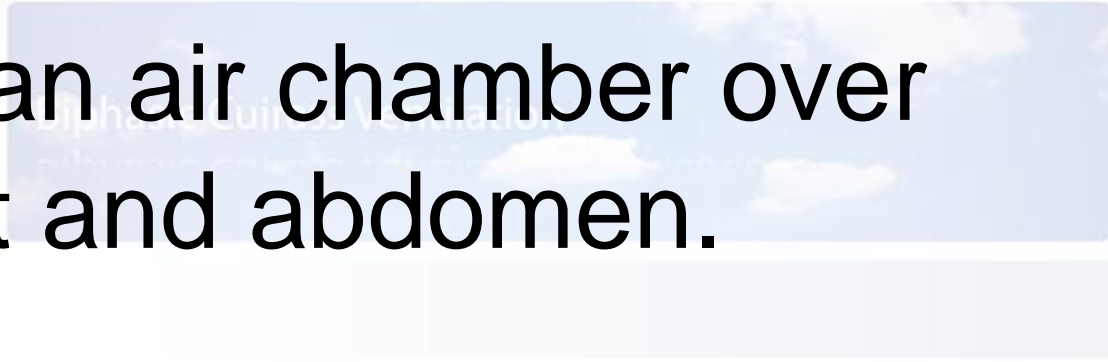
The Hayek RTX uses Biphasic Cuirass Ventilation (BCV) to provide respiratory assistance to patients as a non-invasive ventilator and as a secretion clearance device with assist of cough.

The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

A power unit is connected to a chest shell called a cuirass. The cuirass along with a flexible foam seal creates an air chamber over the chest and abdomen.



The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

The power unit via a hose connected to the cuirass alternatively applies negative and positive pressure to the chest and upper abdomen through the cuirass.



The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

The negative pressure causes the lungs to expand producing inhalation. Then the positive pressure in the cuirass assists exhalation.

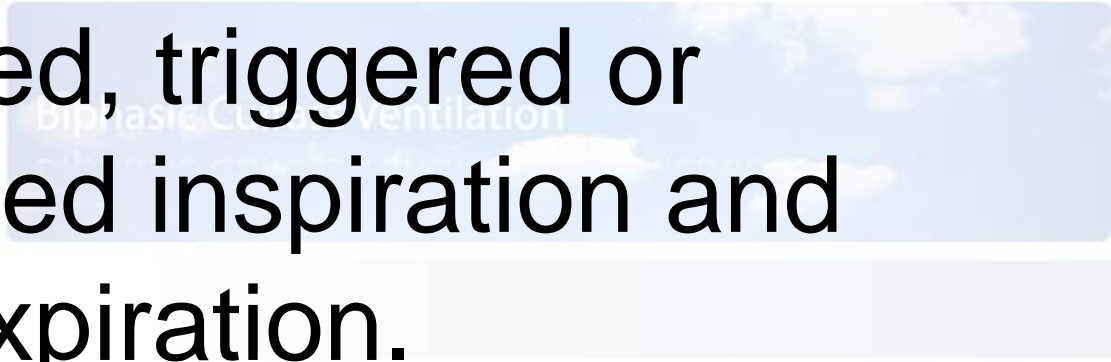


The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

The Hayek RTX ventilates by decreasing and then increasing the pressure within the cuirass chamber, providing either controlled, triggered or synchronized inspiration and expiration.



The Hayek RTX can be used in a variety of ways to aid breathing.



Natural breathing consists of two phases, inspiration and expiration.

During the inspiratory phase, the diaphragm and the intercostal muscles contract. The diaphragm moves downwards, while the intercostal muscles pull the ribs up expanding the thoracic cavity, increasing the volume.

The Hayek RTX can be used in a variety of ways to aid breathing.

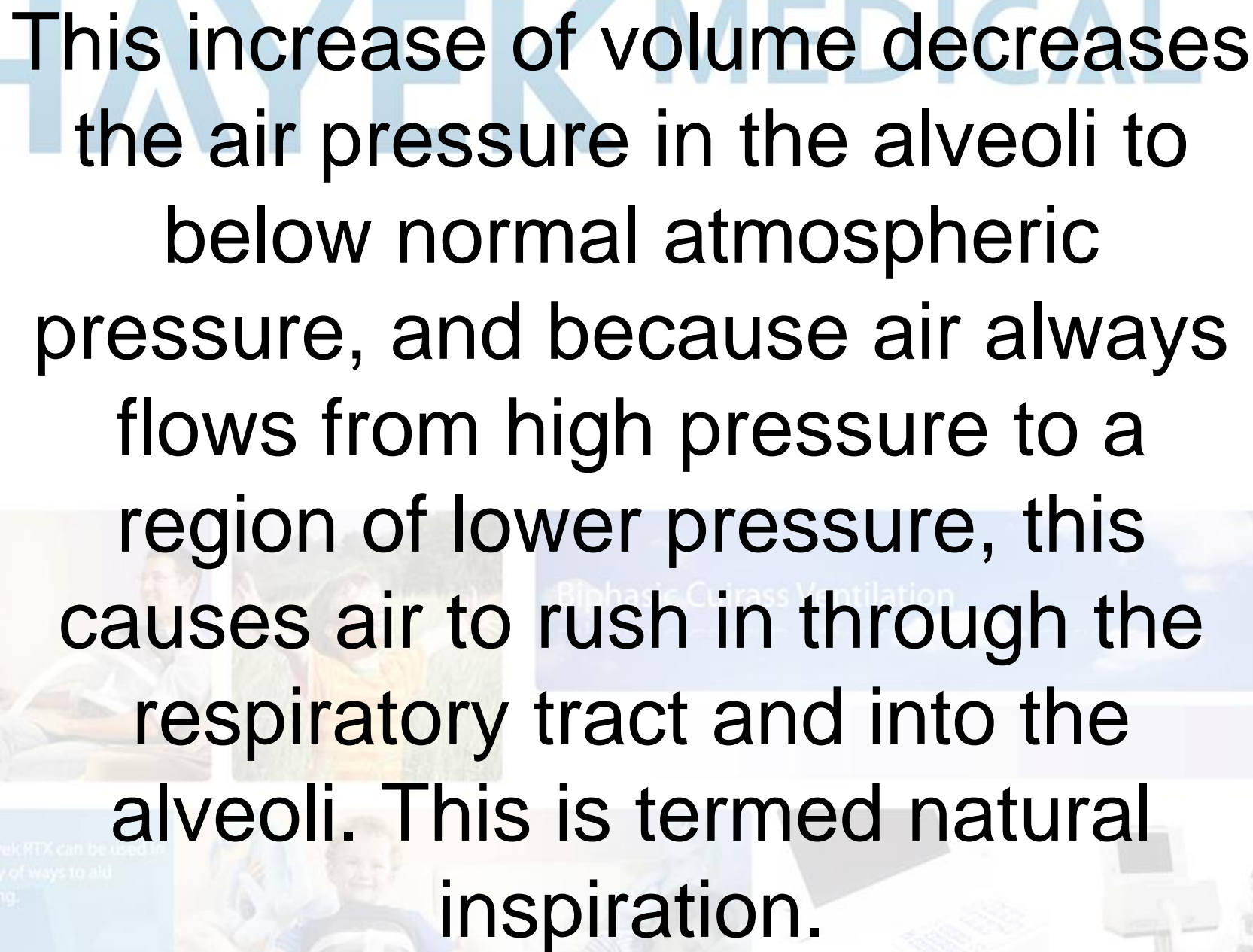


HAYEK MEDICAL

This increase of volume decreases the air pressure in the alveoli to below normal atmospheric pressure, and because air always flows from high pressure to a region of lower pressure, this causes air to rush in through the respiratory tract and into the alveoli. This is termed natural inspiration.

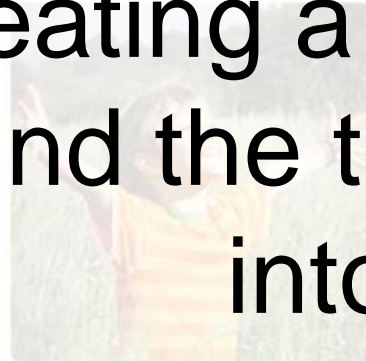
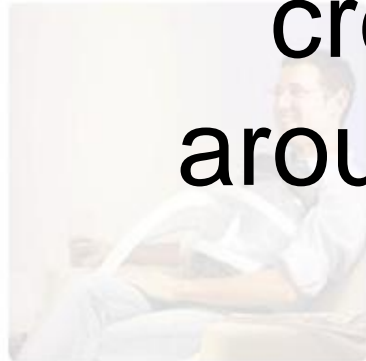
Biphasic Cuirass Ventilation

The Hayek RTX can be used in a variety of ways to aid breathing.

The background features a collage of images related to medical care and respiratory therapy. On the left, a healthcare professional is seen attending to a patient in a hospital bed. In the center, a young child is smiling while wearing a respiratory mask. On the right, there is a close-up of a piece of medical equipment, likely a ventilator or a respiratory therapy device, with a person's hand visible near it. The overall theme is medical assistance and patient care.

HAYEK MEDICAL

The Hayek RTX ventilator effects inspiration in the same way, generating a decrease in the pressure in the cuirass therefore creating a negative pressure around the thorax and pulling air into the lungs.

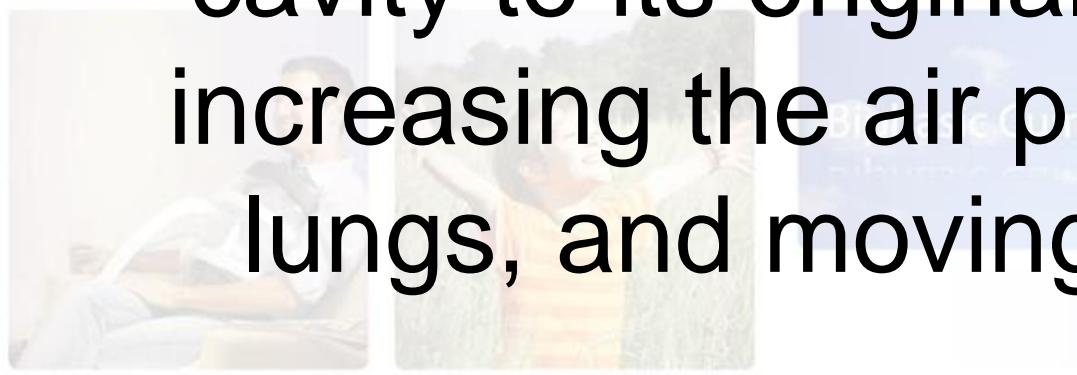


The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

During natural exhalation the diaphragm and intercostal muscles relax. This returns the thoracic cavity to its original volume thus increasing the air pressure in the lungs, and moving the air out.

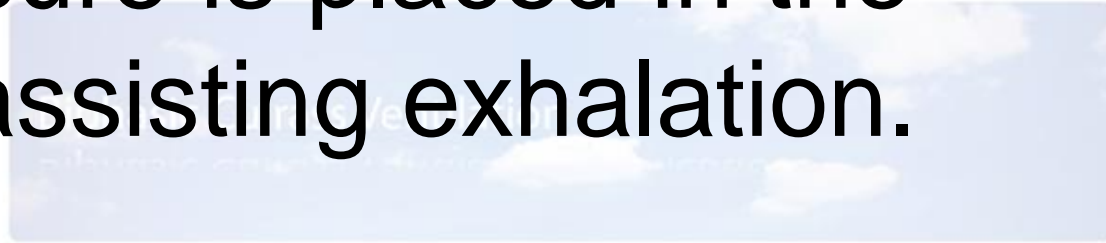
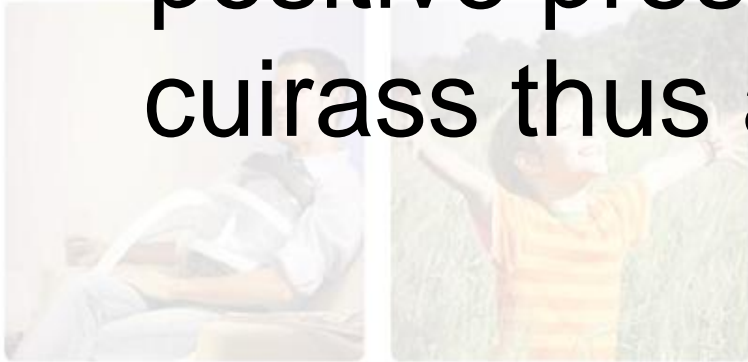


The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

Exhalation when assisted by the Hayek RTX is an active phase as a positive pressure is placed in the cuirass thus assisting exhalation.



The Hayek RTX can be used in a variety of ways to aid breathing.

HAYEK MEDICAL

The RTX provides ventilation in a more natural manner



The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

When used for airway clearance the Hayek RTX provides two sequential cycles that are set for duration and number of total cycle repeats. The first is Oscillation.

The Hayek RTX can be used in a variety of ways to aid breathing.



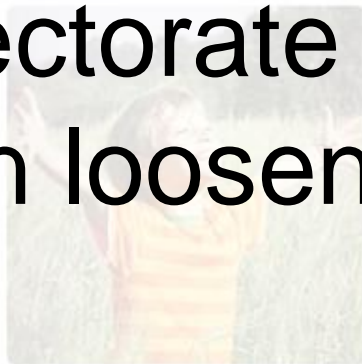
Oscillation cycles negative and positive pressures in and out of the cuirass at high frequencies in order to provide a thinning effect on mucous as well as a means of augmenting the flow of mucous. The Oscillation phase is followed by the assisted cough.

The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

In assisted cough the RTX is set to deliver a breath cycle that helps produce good cough flows and increase the patient's ability to expectorate secretions that have been loosened by the oscillation phase.

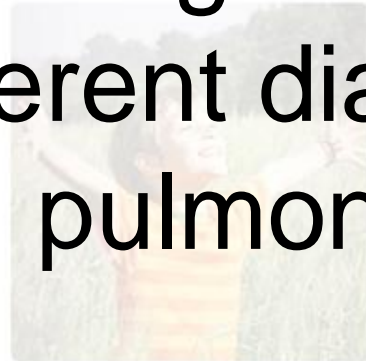


Biphasic Cuirass Ventilation

The Hayek RTX can be used in a variety of ways to aid breathing.



Due to its utility as a non-invasive ventilator, secretion clearance, and assisted cough capabilities the Hayek RTX can provide a clinical advantage to patients with many different diagnosis and cardio-pulmonary symptoms.



The Hayek RTX can be used in a variety of ways to aid breathing.



HAYEK MEDICAL

U.S. Inquiries
Call 855 2 GETBCV



The Hayek RTX can be used in a variety of ways to aid breathing.

