



Mywave™

A brand new **wave**
of sampling.



Find more information at www.mylabglobal.com

CE IVD

What is the Mywave™?

The Mywave™ provides airway clearance therapy and promotes bronchial drainage in an innovative way, using acoustics, acting on both the lungs and on the mucus. This form of chest physiotherapy provides a convenient and non-invasive alternative to harsh and painful percussive and shaking techniques. The ability of sound waves to easily travel through the chest, enables the Mywave™ to use minimal external thorax manipulation, allowing the treatment to be indicated for all patients, from neonates to elderly adults, with respiratory ailments. The Mywave™ uses low frequency sound waves that match the resonance frequency of the lungs. This causes the lungs to vibrate and the viscosity of mucus to decrease, making the Mywave™ an ideal solution for any patient requiring help with airway clearance, getting the mucus up and out of the lungs.

Why the Mywave™ works



The Mywave™ Uses Sound Waves

Sound waves can easily travel through the body, penetrating the lungs reaching the entire lung. Mechanical waves cause strong surface effects, but diminish rapidly with distance travelled into the chest, while acoustical waves are weaker on the surface, but diminish little with distance.¹



The Mywave™ Matches the Lung Resonance Frequency

The Mywave™ can be adjusted to match the resonance frequency of an individual's lungs. In 2002, U.S. Department of Commerce and US Navy study found that the human lung resonance frequency is around 37 to 42 Hz²



The Mywave™ Changes the Viscosity of the Mucus

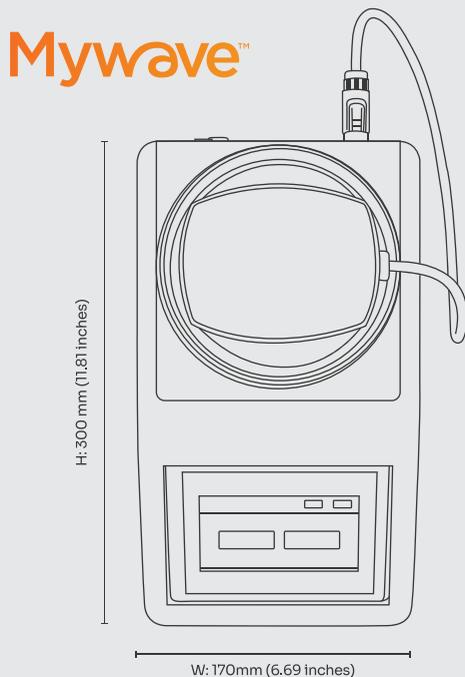
In a study published in 2019 conducted by Dr. Boffito it was concluded that sound waves at 40 Hz change the viscosity of mucus, making it more liquid and easier to expectorate.³

Transducer

Control Unit



An innovative solution for improved treatment delivery



Specification

Operating Temperature	5 to 40°C
Operating Humidity	15 to 93%, non-condensing
Atmospheric pressure	700 hPa to 1060 hPa
Storage Temperature	-25°C (without RH control) to +70° (at an RH of up to 93%, non-condensing)
Standards compliance	IEC 60601-1 3rd edition
Mode of operation	Continuous
AC power consumption	100-240Vac. 50/60Hz, 2A
Type of protection against electric shock	Class II Double insulated electrical device
Applied part degree of protection against electric shock	Type BF, floating isolated applied part
International protection rating	IP21, Protected against access to hazardous parts by fingers or similar objects. Protected against ingress of dripping water when tilted up to 15°

Uses Acoustics

Sound waves penetrate the chest wall more easily than do mechanical waves, due to their ability to propagate through water and air mediums. It takes 1.9N of force to seal the Mywave™ transducer onto the chest, opposed to the 58N involved in clapping.⁴

The Mywave™ was proven to be as effective as clapping.⁴

The minimal external force needed for the treatment increases patient compliance to and makes it a gentle alternative for patients of all ages and physical conditions.⁵

The use of acoustics allows for a targeted treatment via the Mywave™ transducer. Treatment can be concentrated in areas most affected for longer periods of time than in areas less affected.

Allows for multiple treatments per day.

The Mywave™ is non-invasive allowing for it to be combined with other treatments and to continue uninterrupted when the patient coughs.

Effective and Consistent Treatment

Dr. Boffito's study found that the optimal frequency for mucus rehydration was 40 Hz. The Mywave™ is designed to provide the right treatment to every patient and is the only one that provides the capability of matching the human lung resonance frequency and optimal mucus rehydration frequency of 40 Hz.

The delivery of the treatment is always consistent and does not depend on who is providing the treatment, on the patient's breathing technique or on the caregiver's technique.

Safe for numerous Patient Populations

Can be used in several departments: ICU, NICU, PICU, Lung Transplant, CF, COPD without contraindication.

Can be used safely on patients who cannot be moved or have special physical conditions (paraplegic, obese, frail, feeding tube, ventilated, etc.)

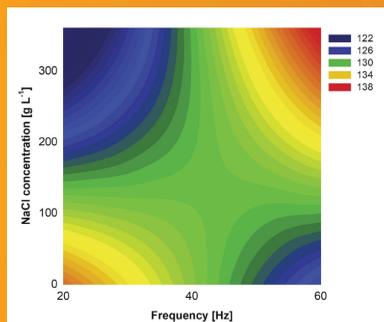
The use of adaptors optimizes treatment delivery and protects the patients.

Easy to Use and Simple to learn

The Mywave™ is easy to use and does not require complicated training

Patients can use the Mywave™ autonomously

Latest Study



The optimal frequency is 40 Hz

In individuals with respiratory ailments, mucus tends to be much more viscous than in healthy individuals, making it sticky and hard to expectorate, often resulting in infection and even hospitalisation. Dr. Boffito conducted a study to understand how the mucus rheology and hydration changed depending on the frequency and intensity of the acoustic waves delivered to mucus samples. The optimal frequency for mucus rehydration was found to be 40 Hz, regardless of the intensity of treatment selected and of NaCl concentration

Basic Knowledge of acoustics

Acoustics

Infrasound covers sounds below 12 Hz down to 0.001 HZ

Sound is within the range of human hearing which is normally limited to frequencies between 12 Hz and 20,000 Hz. The Frequencer operates at frequencies between 20-65 Hz.

Ultrasound covers frequencies greater than the upper limit of human hearing. The most well known application is its use in sonography and echography. Muscles, tendons, breast and neonatal brain are imaged at frequencies in the millions of Hz.

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