

inspiration
in respiratory
therapy

FREE ASPIRE

The gentle solution to secretion removal



PATENT PENDING

CE 0051

FREE ASPIRE removes tracheobronchial secretions non invasively, without requiring or causing the patient to cough

FREE ASPIRE is a unique, non-invasive device for the removal of tracheobronchial secretions, developed for adult and paediatric patients with reduced or no capacity to expectorate.

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How it works:

FREE ASPIRE uses a new patented technology called VAKÜM which accelerates expiratory flow. The secretions reach the upper airway in complete safety allowing the patient to expel or to ingest them if they are not able to eliminate them on their own.

The patient is connected to a mouthpiece or mask. During the expiratory phase the air expelled by the patient is accelerated, which is produced by the venturi effect from the special connector.

The acceleration is only activated during the expiratory phase and its entity is proportional to the flow of the expired air, according to the natural rhythm of the patient's respiratory function.

The non invasive action affects all the pulmonary system, including the alveoli and bronchiole, and has sufficient energy to drag the secretions towards the upper airways. The secretions, sliding onto the aqueous layer which covers the internal respiratory airway walls, are deposited first of all in the central bronchial area, then reaching the trachea, slide to the stomach over the oesophagus.

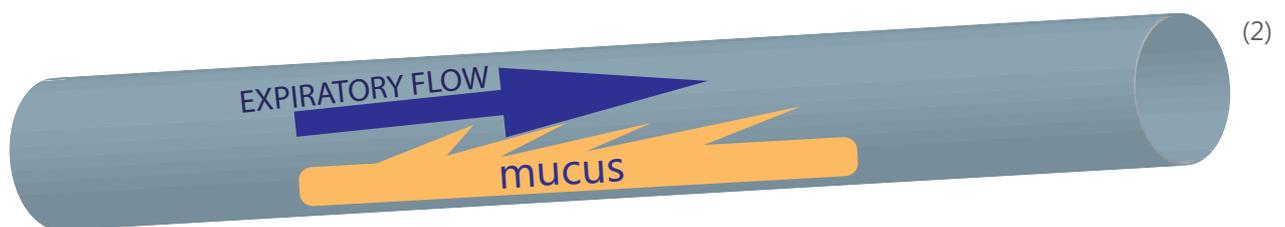
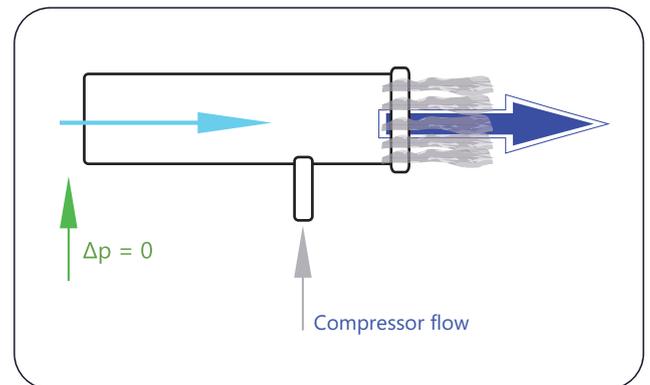
No negative pressure is generated inside the lungs therefore there is no risk of airways collapse.

Due to the airways' own natural mechanism in clearing secretions, as described below, it is possible that the patient has no sensation during the therapy session with the exception of an increase in salivation.

FREE ASPIRE does not require an efficient cough and therefore is useful for patients with a weak cough reflex, including thoracic and cardiac surgery, neuromuscular and paediatric patients.

FREE ASPIRE is designed not to cause a cough and does not assist a cough. FREE ASPIRE offers a gentle secretion removal solution for those patients whose pathology does not require positive or negative pressures and for those patients who have undergone or are about to undergo surgery.

FREE ASPIRE can be used as required, according to the patient's clinician's advice, in 15 minute sessions.



Background:

Patients with increased secretions or reduced secretions clearance may be more susceptible to retained secretions and, as a result, to an increased risk of infection.

VAKÜM technology is the result of several years of research in studying the respiratory system's own natural mechanism used to eliminate secretions:

- Secretions are normally detached and eliminated by an acceleration in expiratory air flow⁽²⁾.
- Under normal conditions, about 100ml of mucus arrives at the laryngeal level where 80% is subconsciously ingested or expectorated⁽³⁾.

Patients, particularly pre- and post- surgery, can tire easily with the effort required to eliminate secretions. Some patients cannot tolerate or do not require negative or positive pressures.

Clinical applications

Patients with reduced capacity to expectorate

Any pathology, neuromuscular disease for example, with a significant hyposthenia in the respiratory muscles which as a consequence reduces the capacity to make an efficient cough.

Cystic fibrosis

The characteristics of secretions in CF patients impede their normal elimination. FREE ASPIRE mobilises the particularly dense and viscous secretions which are typical of this pathology.

Pre- and post- surgery

- Pre-surgical preparation of COPD patients
- Rehabilitation post-intervention : thoracic/abdominal
- Rehabilitation post-intervention: cardiac surgery

Patients having undergone cardiac or thoracic surgery are not able to cough and clear secretions due to high pain levels.

Other patient groups with secretions:

COPD
Bronchiectasis
Paediatrics
Brain damage
ALS

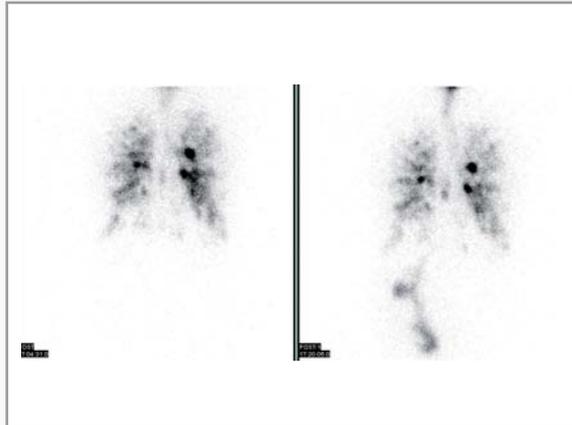
FREE ASPIRE 'at a glance'

- Safe:**
no positive or negative pressure is created in the airways
- Effective:**
it can be used with patients who have a weak cough reflex, neuromuscular disease for example
- Non-invasive:**
there is no suction catheter, just a silicone tube, connector and mouthpiece
- Gentle:**
does not cause coughing which is a major concern for post-surgery patients
- Easy to use:**
the user breathes normally at tidal volume, no extra breathing effort is required
- Lightweight and easy to carry:**
FREE ASPIRE has an easy grip handle and is supplied with a transport bag, making it easy for the patient to carry at home or in the hospital
- Easy to operate:**
a simple "switch on/switch off" device which means that the patient can operate the unit on their own in complete autonomy

Contra-indications: patients with systemic arterial hypotension



FREE ASPIRE in the ICU



Scintigraphic images before (a) and after (b) treatment with FREE ASPIRE showing the transition of mucus to the stomach

^①Criteria for mucus transport in the airways by two-phase gas-liquid flow mechanism. Kim CS, Rodriguez CR, Eldridge MA, Sackner MA. J Appl Physiol 1986; 60: 901-907.

^②Mucus clearance by two-phase gas-liquid flow mechanism: asymmetric periodic flow model. Kim CS, Iglesias AJ, Sackner MA. J Appl Physiol 1987; 62: 959-971.

^③T.Todisco et al: La clearance mucociliare tracheobronchiale. Rec.Progr.in Med.1981,21,400-404; Tommaso Todisco et al.: Pulmonary mucociliary clearance. The Lancet, 15 may 1982, Vol.1, 1129; Tommaso Todisco et al.: Mucus hypersecretion, airways obstruction. The Lancet, 7 april 1984 Vol 1 , 801

FREE ASPIRE

Secretion removal with VAKŮM technology

TECHNICAL SPECIFICATION

Model: FREE ASPIRE
Power supply: 220-230V AC – 50 Hz
Absorption: 140W
Class, electrical protection: II Applied part type B
Fuse: F500mA – 250V
Dimensions and weight: 27 x 23 x 13 cm - 2 Kg
Norm : CEI EN 60601-1 (rev 3) - CEI EN 60601-1-2:2001
Conforms to: Medical Device Directive: 93/42/CEE (2007/47/EC)
Warranty: 24 months

The above information is correct at the time of printing and may be changed due to our policy of continuous improvement.

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