

Proven Clinical Benefits

The Lung Flute® provides a clinically proven solution for diagnostic sputum sample collection, reducing the time and complexity associated with collection of lower airway samples using hypertonic saline induction.

- Minimally invasive technology produces reliable results
- Lower airway samples obtained without the need for hypertonic saline induction
- Rapid and convenient for practitioners and patients



1. Congested lung parenchyma

2. Lung Flute® generates low frequency acoustic waves which changes viscosity of sputum

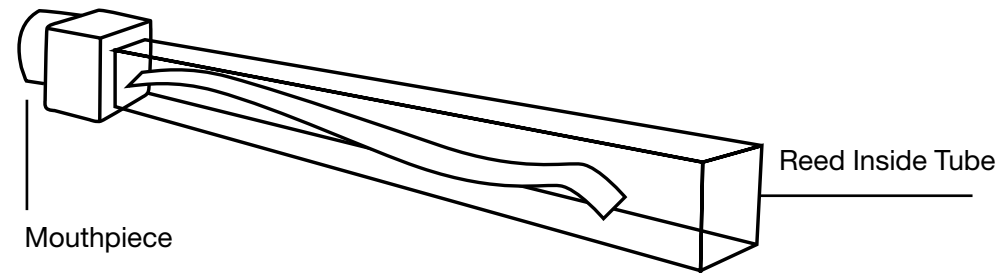
3. Effective clearing of obstruction will generate diagnostic quality samples.

Cellular and biochemical characteristics of samples obtained with Lung Flute®

Parameter	Saliva Median	IQR	Flute® Median	IQR	Hypertonic Saline	IQR	P Value S vs F	P Value S vs H	P Value F vs H
Weight (gm)	0.37	0.342	1	1.36	4.5	6.415	0.3067	0.0001	0.0001
Cell Count(/mL)	50000	70000	247500	365000	280000	377500	0.0022	0.0019	0.81
Neutrophil (/mL)	19	403	98803	249566	178464	248701	0.0034	0.0005	0.64
Macrophages(/mL)	75	506	82385	130043	54926	70627	0.001	0.0005	0.18
Squamous Cells(/mL)	36000	60885	35219	70299	10950	34330	0.62	0.09	0.15
IL-8 (ng/mL)	0.38	0.78	1.61	1.56	1.46	1.6	0.008	0.01	0.81
Elastase (nM)	0.69	2.18	0.89	1.67	0.62	0.93	>0.99	0.67	0.16
Fibrinogen (ng/mL)	661	1531	822	1837	1914	3219	0.31	0.07	0.53

The Lung Flute's® patented low frequency acoustic wave (LFAW) producing technology compares favorably to current standard-of-care hypertonic saline induction used to collect diagnostic sputum samples in patients with reduced pulmonary function. In a clinical trial in 15 subjects with chronic bronchitis collected sample cell counts, neutrophils, macrophages, squamous cells and IL-8 were not statistically different for the samples collected by the Lung Flute® and those induced with hypertonic saline.

The Lung Flute® = Secretion mobilization and Induction Device



Products

- Product No. 1001-01 Diagnostic Lung Flute® Secretion Mobilization
- Product No. 1002-01 Replacement Reed Kit (14 reeds)
- Product No. 1003-01 Lung Flute® for Home Care Bronchial Hygiene Therapy
- Product No. 1004-01 Lung Flute® for Hospitals/Clinics Dual-indicated for diagnostic and therapeutic secretion mobilization



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To order:
www.lungflute.com
or
1-888-820-0970

This device requires a prescription from a physician to order.



DIAGNOSTIC
lungflute®
for Hospitals & Clinics

Fast, Reliable, Minimally Invasive Secretion Induction

FROST & SULLIVAN

North American Pulmonary Therapeutic & Diagnostic Devices Excellence in Technology of the Year Award



Diagnostic Lung Flute®

The Lung Flute® is designed to aid in the collection of diagnostic sputum samples for multiple pulmonary disease states, such as pneumonia, chronic bronchitis, asthma, lung cancer and tuberculosis. Lung Flute® features include:

1. Simple hand-held disposable device
2. Low pressure operation
3. 510(k) FDA clearance
4. U.S. Patent No 6984214 & 6702769

Low Frequency Acoustic Waves Help Patients' Natural Mucus Clearing System

A low frequency wave is generated at the mouth by exhaling through a mouthpiece over a laminar surface (Reed) inside the Lung Flute®. The resulting low frequency acoustic wave that is produced travels retrograde into the lower airways and lung parenchyma and increases mucociliary clearance. Patients expel air with the force required to blow out a single candle. 20 repetitions of a single two breath pattern are performed with the device to complete a diagnostic session.

Clinical Results

A clinical study entitled, *Efficacy and Safety of a New Acoustic Device, The Lung Flute®, for Sputum Induction in Healthy Non-smokers and Chronic Bronchitis*, tested the hypothesis that expectorate samples obtained after induction with the Lung Flute® would have characteristics of lower respiratory tract secretion and would be comparable to sputum samples obtained by induction with hypertonic saline. The researchers found that samples from 100% of the chronic bronchitis patients obtained with the Lung Flute® contained lower respiratory secretions. Analysis also revealed that the samples obtained using the Lung Flute® and through hypertonic saline induction were not statistically different. The most common adverse event associated with use of the Lung Flute® was mild transient throat irritation. The researchers concluded, "The Lung Flute® is a safe, effective, convenient and rapid method of sputum induction. Further investigation in its utility for diagnostic and therapeutic applications is warranted."

The Lung Flute® is a safe, effective, convenient and rapid method of sputum induction.



Frost and Sullivan has honored Medical Acoustics with the North American Pulmonary Therapeutic and Diagnostic Devices Excellence in Technology of the Year Award.

Selected by Popular Science as a "Best Innovation of 2009."



Sound spectrum analysis shows the action of a low frequency acoustic wave as it produced a phase change in a viscous liquid, similar to changing gelatin into a liquid.

