IBI SEMINAR

“Pressure Oscillation – An Effective Tool for Lung Therapy”

Thursday – May 2, 2013 – **12:00 p.m. sharp**
EPFL – room **SV 1717a**

Prof. Ahmed Al-Jumaily

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*host: Prof. N. Stergiopulos*

Abstract

In recent years pressure oscillations (PO) superimposed on the breathing cycle has been an innovative and effective way of treating several lung ailments including asthma and respiratory distress syndrome. While lab experiments have demonstrated that length oscillations can reduce forces in contracted airway smooth muscles which are the main driving mechanism for asthma attack, it has been proven that PO improves lung compliance, inflammatory stresses on patients and preserves surfactant function. Professor Al-Jumaily will highlight how engineering innovation can convert PO to a lung therapy and how this could be expanded further to the cell level to achieve asthma therapy. Asthma is one of the most common and costly diseases affecting approximately 150 million people worldwide. Characterized by bronchial hyperresponsiveness, its traditional treatment involves using expensive, drug-based anti-inflammatory agents and bronchodilators. Such drug treatment techniques relieve only the symptoms of asthma and ultimately promote variety of side effects that have been observed. New research, however, demonstrates that physical stimulation may help in significantly relieving the contracted airway passages and restore the natural breathing function of the lung. This presentation demonstrates some significant findings of how contracted airway smooth muscles can be relaxed by vibration, which can contribute to the relief of constricted airways. Is this an alternative or/and supplement to inhalers?

→ Dr. Al-Jumaily is a visiting faculty in the Stergiopulos Lab until the end of 2013.

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