



Case #703

Multi-Breath Nitrogen Washout Model for Lung Function Determination

The Lung Clearance Index (LCI) is a lung function parameter derived from the multi-breath washout (MBW) test. Although recent technological advances in equipment design have re-popularized this test, current analysis methods remain empirical and are dependent on the patient being able to breathe regularly and deeply. This novel MBW data analysis method overcomes both limitations by fitting a multi-compartmental lung model to the exhaled nitrogen concentration profile over the entire duration of the patient's nitrogen expiration for each breath. In addition, the model provides several additional parameters of physiological importance and can be used with subjects who cannot breathe regularly, such as young children and patients with significant disease, and where the transition between Phase II and Phase III is not clear.

Applications:

- Lung clearance analysis via the MBW test.

Advantages:

- Removes an empirical decision point from the test.
- Can test subjects that don't breathe regularly.
- Provides additional and more useful physiological parameters.
- Expands the patient population who can use this test.

Intellectual Property and Development Status:

PCT Application WO2019084225A1

Looking for both licensing and industry partners for research and product development

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