

The missing measurement in the Direct Fick equation ...

InnoCC is a spinout of the Danish company Innovision. Their state-of-the-art Innocor® technology proven in exercise and cardiopulmonary testing sites all over the world is the core technology now being optimized for use in Cardiac Cath Labs. Healthcare professionals can now obtain an accurate calculation of Cardiac Output based on directly measured oxygen uptake (VO_2) instead of the widespread use of values from tables or published predictive equations.

The Direct Fick principle remains the gold standard for calculation of hemodynamic indices in which VO_2 must be known. The use of assumed VO_2 values introduces significant errors in the estimation in ventilated patients of all ages, particularly in young children. A discrepancy between estimated and true VO_2 will translate directly into an equivalent percentage error of cardiac output and derived parameters.

The Innocor technology has FDA approval and CE mark for use in spontaneously breathing patients and InnoCC is now performing clinical testing of the Innocor technology in ventilated patients at renowned US and German university hospitals. The current device is fully functional but if used in ventilated patients a local approval for research use must be obtained

until FDA approval and CE certification has been obtained, expectedly by the end of 2015.

Optimized for Cath Labs

The VO_2 measurements in Innocor are performed on a breath-by-breath basis providing data for each breath. The test is optimized for Cath Labs by taking into account specific conditions including changing viscosity and airway pressure. The test is now offered for research use.

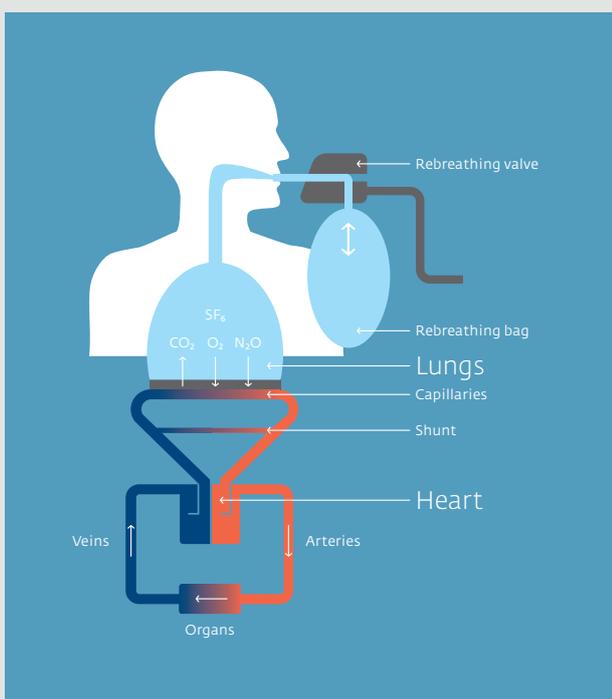
The test

During the test the patient breathes through a tracheal tube, face mask or mouthpiece. The test typically takes 2-3 minutes and is absolutely harmless and simple to perform.

Innocor Technologies

Innocor utilizes an oxygen sensor based on laser diode absorption spectroscopy, meaning no limited life parts, and Innovision's proprietary gas analyzer technology for measuring CO_2 continuously and simultaneously. The advanced analyzers combine a fast response with unsurpassed sensitivity, accuracy and stability. No tedious calibrations are required.

A Nafion sampling tube ensures optimal humidity removal.



Parameters

VO_2	Oxygen uptake
VO_2/BSA	Oxygen uptake per m^2 of body surface area
VO_2/kg	Oxygen uptake per kg of body weight
VO_2/HR	Oxygen pulse
VCO_2	Carbon dioxide excretion
R	Respiratory exchange ratio
V_E	Expiratory minute ventilation
V_A	Alveolar ventilation
V_D	Anatomical dead space
V_T	Tidal volume
f_B	Respiratory rate
$F_{ET}O_2$	End-tidal concentration of oxygen
$F_{ET}CO_2$	End-tidal concentration of carbon dioxide
V_E/VO_2	Ventilatory equivalent for oxygen
V_E/VCO_2	Ventilatory equivalent for carbon dioxide