

Mechanical Ventilation: Metabolic Measurement Using Indirect Calorimetry (Respiratory Therapy)

CHECKLIST

S = Satisfactory **U** = Unsatisfactory **NP** = Not Performed

Step	S	U	NP	Comments
Performed hand hygiene before patient contact.				
Introduced self to the patient.				
Verified the correct patient using two identifiers.				
Assessed the patient to determine if metabolic measurements were indicated.				
Assessed the patient's hemodynamic support.				
Assessed the patient's need for increased ventilatory requirements.				
Assessed the stability level of the delivered FIO ₂ .				
Assessed the patient for any recent period of sedation holiday, agitation, or hemodynamic or respiratory instability.				
Ensured that the patient rested quietly before testing.				
Ensured that the testing environment was quiet.				
Determined the design of the indirect calorimeter (open- or closed-circuit).				
Calibrated the indirect calorimeter on the day of measurement and more often if errors in measurement were suspected.				
Ensured that the calibration gas mixture was relevant to the concentration of gas to be measured clinically.				
Gathered clean tubing, low-resistance bacteria filters, gas analyzers (oxygen and carbon dioxide), and a flow and volume measuring device.				
Ensured that the ventilator circuit and tubing to the calorimeter were leak free.				
If using an open-circuit design, made available a method of stabilizing FIO ₂ .				
Turned on the indirect calorimeter before the start of testing, based on manufacturer's instructions, to warm up the dilution pump.				
Performed hand hygiene and donned gloves.				
Explained the procedure to the patient and ensured that he or she agreed to treatment.				

Mechanical Ventilation: Metabolic Measurement Using Indirect Calorimetry (Respiratory Therapy)

CHECKLIST

S = Satisfactory **U** = Unsatisfactory **NP** = Not Performed

Step	S	U	NP	Comments
Positioned the patient comfortably in bed, usually in a supine or semi-Fowler position.				
Connected the patient to a stand-alone device (metabolic cart) or followed the manufacturer's instructions for the specific indirect calorimeter used to initiate measurement on a ventilator that contained an integrated calorimeter.				
After the patient reached the desired steady state, measured until an average interval was achieved (a period of less than 5 consecutive minutes in which variations of VO_2 and VCO_2 were less than 5%).				
Repeated metabolic measurements as necessary for unstable patients.				
Disconnected the patient from the indirect calorimeter.				
Observed the patient for signs and symptoms of pain. If pain was suspected, reported it to the authorized practitioner.				
Removed gloves and performed hand hygiene.				
Documented the procedure in the patient's record.				

Learner: _____ Signature: _____

Evaluator: _____ Signature: _____

Date: _____