Indirect Calorimetry

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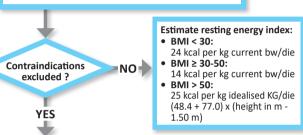
Indication nutritional screening:

Expected intensive stay > 48 hours



Exclude contraindications of indirect calorimetry:

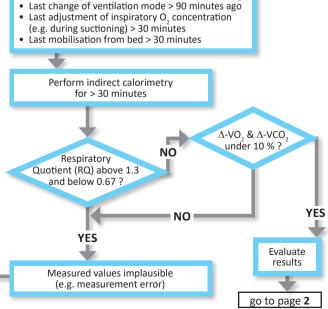
- O₋ concentration > 70%
- PEEP > 14 cmH O
- Severe arterial hypoxaemia (PaO₃ < 50 mmHg)
- ECMO
- Broncho-pleural or tracheoesophageal fistula
- Leakage > 10
- Therapy with nitric oxide
- Sedation with volatile anaesthetics



Prepare monitoring by indirect calorimetry (e.g. calibrate sensors)

Determine the time for implementation:

- Last renal replacement therapy ended > 4 hours ago



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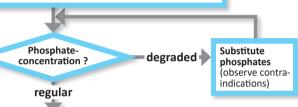
Close monitoring of blood glucose (4-6x/die)

as surrogate marker for substrate intolerance

Adjust insulin requirement to target corridor for blood glucose:

- Minimum blood sugar level 110 mg/dl (6.1 mmol/l)
- Tolerance range 140-200 mg/dl (7.7-10 mmol/l)
- For diabetes II: <250 mg/dl or <13.9 mmol/l)

Daily monitoring of phosphate and gastensium concentrations



Slowly increase substrate intake depending on blood glucose & phosphate levels and resting energy index.

Admission day intensive care unit (first intensive care day):

- · No substrate supply
- Record initial value resting energy index
- · Measure current body weight

Second day intensive care unit:

 Substrate intake 75 % of the resting energy index (of which 0.75 g protein per kgKG /die)

Third day intensive care unit:

- Substrate supply depending on the maximum insulin requirement of the previous day:
- 0 1 I.U.: 100% of the resting energy index
- 2 4 I.U.: 50% of the resting energy index
- >4 I.U.: 25% of the resting energy index

Subsequent days:

- Substrate supply depending on the maximum insulin requirement of the previous day:
- 0 1 I.U.: intake of the previous day + increase by 15-20% of the resting energy index (up to 100%)
 2 4 I.U.: intake of the previous day + decrease by 15-20% of the resting energy index (up to 0 kcal)
 4 I.U.: intake of the previous day + reduction by 50% of the resting energy index (up to 0 kcal)