

You can obtain 3 CEU's for reading the article "ENERGY EXPENDITURE MEASURED BY INDIRECT CALORIMETRY IN A NEUROSCIENCE INTENSIVE CARE UNIT – A RETROSPECTIVE OBSERVATIONAL STUDY" and answering ALL the accompanying questions with a pass mark of 70% or more.

This article has been accredited for CEU's (ref. no. DT/A01/P00008/2024/00007)

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Activity 182

1. Indirect calorimetry provides a real time measurement of patient requirements based on oxygen consumption and carbon dioxide production.
 - a. True
 - b. False
2. A review by Morbitzer et al concluded that:
 - a. Predictive equations provided similar resting energy expenditure to readings obtained by indirect calorimetry.
 - b. There were significant differences between resting energy expenditure obtained by predictive equations compared to indirect calorimetry on a group level.
 - c. There were significant differences between resting energy expenditure obtained by predictive equations compared to indirect calorimetry on an individual level.
 - d. Predictive equations are accurate within 10% of indirect calorimetry majority of the time.
3. The current study found a negative correlation between the Harris-Benedict equation and indirect calorimetry measurements.
 - a. True
 - b. False
4. In the subgroup analysis of patients with BMI ____, estimated resting energy expenditure from the Harris-Benedict equations was found to be significantly ____ than the indirect calorimetry reading.
 - a. <18.5 kg/m², lower
 - b. ≥30 kg/m², higher
 - c. ≥30 kg/m², lower
 - d. <18.5 kg/m², higher
5. A systematic review by Foley et al showed that indirect calorimetry readings ranged from ____% to ____% of the predicted value in the first ____ days of patients with traumatic brain injury.
 - a. 50%, 100%, 7
 - b. 100%, 200%, 14
 - c. 87%, 200%, 7
 - d. 87%, 200%, 30
6. In the current study 18.5% of patients had blood glucose readings of >12 mmol/L 24 hours post dietitian review. Which of the following could potentially have contributed according to the authors?
 - a. Reduction in cerebral metabolism
 - b. Increased cerebral oxygen consumption
 - c. Undiagnosed diabetes in the patient population
 - d. a and c
 - e. a and b
 - f. All of the above
7. In the patient population with BMI 30 kg/m² predicted resting energy expenditure from the Harris-Benedict equation was significantly higher than measured energy expenditure from indirect calorimetry. Which of the following factors could have contributed to this?
 - a. The Harris-Benedict equation was originally developed based on data from other patient populations, not including patients with neurological trauma.
 - b. The Harris-Benedict equation was not developed based on data from obese patients.
 - c. The Harris-Benedict equation was originally developed based on data from a healthy population.
 - d. a and b
 - e. b and c
 - f. All of the above
8. According to the article indirect calorimetry (IC) is considered the gold standard to determine resting energy requirements in critically ill patients, in the absence of IC predictive equations remain the best available alternative.
 - a. True
 - b. False
9. Which factors are not considered by the Harris-Benedict equation?
 - a. Gender
 - b. Body mass index
 - c. Weight
 - d. Height
 - e. Age
10. Exclusion criteria for the use of indirect calorimetry in the intensive care unit is:
 - a. Known air leaks from conditions such as pneumothorax, broncho-tracheal fistula or presence of a chest tube.
 - b. Fraction of inspired oxygen requirements ≥ 80%.
 - c. Patients on renal replacement therapy.
 - d. a and c
 - e. a, b and c
11. The ideal stress factor to use for critically ill patients is known with disease-specific variability.
 - a. True
 - b. False
12. In the BMI < 30kg/m² there was ____ between predicted resting energy expenditure and measure resting energy expenditure.
 - a. a non-statistically significant difference
 - b. a statistically significant difference
 - c. no difference

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13. In the TICACOS study, the authors reported a ___ day-to-day variation in measured resting energy experience (REE), however the mean REE was ___ between the indirect calorimetry guided and the control group.
 - a. non-significant, comparable
 - b. significant, comparable
 - c. non-significant, incomparable
 - d. significant, incomparable
14. Which of the following was a limitation of the current study?
 - a. Selection bias
 - b. The use of a uniform stress factor
 - c. The retrospective observational study design
 - d. All the above
15. Which of the following is recommended by The European Society for Clinical Nutrition and Metabolism (ESPEN) as an alternative to indirect calorimetry (IC) in the early phase of intensive care?
 - a. The Harris-Benedict equation
 - b. 20–25 kCal/kg
 - c. 25–30 kCal/kg
 - d. Any predictive equation can be considered in the absence of IC