



Energy expenditure in the critically ill child

Defining nutritional requirements in critically ill children is a great challenge.

The limited evidence available to support practice and assumptions is based mainly on adult data and energy expenditure in the critically ill child is very different from the critically ill adult.

Dietitians use predictive equations to calculate the energy requirements of critically ill children. However, most of the equations used have been developed to estimate energy needs of healthy children.

Several studies have compared estimated energy expenditure to actual energy expenditure in critically ill children and have shown the results to differ greatly. This creates a serious problem for a dietitian on the PICU, as getting it wrong has a clinical consequence of either over or underfeeding. No alternative except for the direct measurement of each individual patient's energy expenditure through indirect calorimetry is currently available to resolve this.

There is, therefore, a real clinical need for the development of a predictive equation that can reliably predict energy expenditure at the bedside in the absence of indirect calorimetry.

The successful formulation of this predictive equation will have a far reaching impact on nutritional support in critically ill children and assist in the adequate delivery of energy to these patients, which in turn may effect their outcome.