

### Validity of Predictive Equations for Metabolic Basal Rate in Brazilian Patients with Type 2 Diabetes (P12-039-19)

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**Objectives:** To evaluate in Brazilian patients with type 2 diabetes which of the seven predictive equations selected to estimate basal metabolic rate (BMR) is the best alternative considering calorimetry indirect (CI) as a reference method.

**Methods:** A cross-sectional study was conducted with 62 patients (31 men and 31 women) with type 2 diabetes. Clinical and laboratorial variables were evaluated as well as body composition by electrical bioimpedance. The BMR was measured by IC (Analisador MedGraphics Cardiorespiratory Diagnostic Systems, model CCM Express®) and

estimated by prediction equations. Dietary intake was evaluated by a food frequency questionnaire (FFQ). Data were analyzed using Bland–Altman plots, paired t-tests, and Pearson's correlation coefficients.

**Results:** Our patients were aged  $63.1 \pm 5.2$  years, had diabetes duration of 11 (1–36) years and A1C test  $7.6 \pm 1.2\%$ . The body composition contained a fat free mass of  $35.2 \pm 11.8$  kg and a fat mass of  $29.1 \pm 8.8$  kg. The energy intake by FFQ was  $1826.9 \pm 628.1$  Kcal/day and the BMR by IC was  $1644.6 \pm 310.6$  kcal/day. There was a wide variation in the accuracy of BMR values predicted by equations when compared to IC BMR measurement. FAO/WHO/UNO and Oxford equations produced the smallest differences to IC. For women, the FAO/WHO/UNO equation provided the best BMR prediction in comparison to measured BMR (–1.8% of the difference). For men, the equation of the Oxford was the one closest to the BMR values as measured by IC (–1.3% of the difference).

**Conclusions:** In Brazilian patients with type 2 diabetes, the predictive equations by FAO/WHO/UNO (for women) and Oxford (for men) were the best to estimate BMR.

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