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Increased resting energy expenditure in diabetic Mexican people is related to age, weight and lean body mass

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Abstract

Indirect calorimetry use oxygen consumption volume for estimating energy expenditure, both at rest and also during physical activities. It has been reported that resting energy expenditure (REE) is modified by metabolic complications, and has been suggested as a new tool for the nutritional assessment in people with health problems, because through this technique is possible to estimate the use of metabolic substrates such as glucose and triglycerides. The objective of this study was to evaluate the differences in REE in diabetic and non-diabetic Mexican people. A total of 224 participants were recruited, including men and women aged 20-75 y. Data collected included weight, height, age, sex. REE was measured in fasting conditions by indirect calorimetry. Body composition was assessed by bioelectrical impedance (BIA). Mean values for weight, height and age were 70.8±12.9 kg, 158.7±9.1 cm and 49.6±10.8 y, respectively. 40% of participants were overweight and additional 36.5% presented obesity. Prevalence of diabetes was 13.8%. Average resting energy expenditure was 1430±283 kcal/d. Diabetics had higher REE in comparison to no-diabetic people and independent of sex (approximately 280 kcal/d difference; P=0.0024). Men showed greater REE than women when REE was adjusted by lean mass, and differences between diabetic and non-diabetic increases up to 380 kcal/d (P=0.0094). Body fat was negative correlated with REE only in no-diabetic people (r= -0.255; P=0.0003). Predictors of REE were age, weight and lean mass for both groups (R^2=0.6). These differences in REE between diabetic and no-diabetics, implies metabolic changes that need to be studied with more detail.

Biography

Miriam Aracely Anaya-Loyola has completed his Ph.D at the age of 36 years from University of California at Davis. She is currently the coordinator of graduate studies in Human Nutrition at the University of Querétaro in México. She is researcher and professor at the Natural Science Department. She has directed more than 15 dissertations for the master degree in Human Nutrition, and published 8 papers internationally. She teaches Chemistry, Nutrition, and Nutritional Assessment to bachelor and graduate students.