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ENERGY INTAKE AND EXPENDITURE IN OBESE OLDER ADULTS WITH AND WITHOUT TYPE 2 DIABETES
R. G. Memelink1, A. M. Verreijen1, J. De Vogel-Van den Bosch2, P. J. Weijs1, 1Department of Nutrition and Dietetics, School of Sports and Nutrition, Amsterdam University of Applied Sciences, Amsterdam, 2Nutricia Advanced Medical Nutrition, Nutricia Research, Utrecht, Netherlands

Rationale: Obesity is a risk factor for type 2 diabetes (DM2), however not all obese people develop DM2. We explored differences in energy intake and expenditure between obese older adults with and without DM2.

Methods: Baseline data from 2 lifestyle interventions with a total of 202 obese older adults were included in the analyses. Obesity was defined as BMI > 30.0, or > 27.0 with waist circumference > 88 (women) or > 102 cm (men). DM2 was confirmed by use of diabetes medication. Subjects were between 55 and 85 years old and 45% was female. Energy intake was measured by 3-day food diary and physical activity level (PAL) by 3-day movement diary. Resting energy expenditure (REE) was calculated as REE x PAL.

Results: The obese group with DM2 (n = 117) had more males (67.5% vs 37.6% p < 0.001) and similar BMI (33.3 vs 33.0 kg/m²) compared to the group without DM2 (n = 85). Analyses of males and females separately showed lower PAL in males with DM2 (vs without DM2: 1.37 vs 1.45, p = 0.015), without differences in EI (2055 vs 1953 kcal/d), REE (1970 vs 1929 kcal/d), and TEE (2699 vs 2830 kcal/d). In females with DM2, both PAL (1.38 vs 1.47, p = 0.014) and EI (1543 vs 1839 kcal/d, p = 0.008) were significantly lower, whereas REE (1592 vs 1598 kcal/d) and TEE (2220 vs 2318 kcal/d) did not differ significantly from obese females without DM2.

Conclusion: In both males and females, obese older adults with type 2 diabetes showed similar resting and total energy expenditure but lower physical activity level compared to those without DM2. Females with DM2 showed lower energy intake. On average, subjects seem to have a negative energy balance, which is probably due to a combination of under-reporting of intake and over-reporting of activity.

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