Abstract T2P131

Association of a Dietary-Based Score with long-term weight gain and risk of overweight and obesity in the SUN Cohort: The Dietary Obesity Score (DOS)

Gómez-Donoso, C.1; Martínez-González, M. A.1; Gea, A.1; Murphy, K.2; Parletta, N.3; Bes-Rastrollo, M.1 1Department of Preventive Medicine and Public Health, University of Navarra, Pamplona/Spain 2Alliance for Research in Exercise, Nutrition and Activity, School of Health Sciences, University of South Australia, Adelaide, SA/Australia 3Centre for Population Health Research, School of Health Sciences, University of South Australia, Adelaide, SA/Australia

Introduction: Although preventable, unhealthy BMI and dietary factors have recently been identified as factors causing the greatest burden of disease. Some doubts still exist on the effectiveness of prevailing nutritional messages to prevent weight gain. Thus, we aimed to prospectively examine the association between a Dietary Obesity Score (DOS) based on previous evidence-based results and the incidence of overweight/obesity in the SUN cohort.

Methods: The SUN Project is a dynamic, prospective, multipurpose cohort of Spanish university graduates initiated in 1999 with an overall retention rate of 91%. We prospectively assessed 11,645 participants, initially free of overweight or obesity. A validated semi-quantitative 136-item food-frequency questionnaire was administered at baseline and after 10 years of follow-up. Taking into account previous literature, the score positively weighted vegetables, fruit, legumes, yoghurt and nuts; while it negatively weighted red meat, processed meats, animal fat, refined grains, ultra-processed food, fast food and sugar-sweetened beverages. Energy-adjusted tertiles of each item were used to build the DOS, ranging from 1 to 24 points.

Results: After a median follow-up of 9.2 years, 2191 new cases of overweight and obesity were identified. A higher favorable score was significantly associated with 42% lower risk of overweight/obesity (adjusted HR [95% CI] for high adherence to DOS (19–24 points) vs. low adherence (1–6 points) = 0.58 [0.41–0.81]; P for trend < 0.001). Regarded as a continuous variable, the risk of developing overweight/obesity was 7% lower for each 2 additional points in the DOS scale (adjusted HR = 0.93 [0.91–0.96]) after adjusting for potential confounders. When the analyses were updated with repeated assessments of dietary intakes, the results were similar and remained statistically significant (high vs. low adherence: adjusted HR = 0.62 [0.44–0.87]).

Conclusion: The DOS showed an inverse association with long-term risk of overweight/obesity. This simple score exclusively based on dietary components may be applicable in clinical practice as a preventive tool for overweight and obesity. It can also be used as an educational tool to help people improve their dietary habits, increase recognition of dietary risks and raise awareness through self-assessing their susceptibility to weight gain over the long-term according to their current diet.

(SEE NEXT PAGE FOR FIG 1)