

Mediterranean diet in type 2 diabetes

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Abbreviations

MMD modified Mediterranean diet

To the Editor: We read with great interest the article by Fraser et al. [1], which reported that patients randomised to receive a modified Mediterranean diet (MMD) showed greater reductions in alanine aminotransferase levels at 6 and 12 months compared with those who received the 2003 American Diabetes Association diet or the low glycaemic index diet.

Macronutrient intakes (assessed using a food frequency questionnaire) for the three different diet groups at 6 months after randomisation are shown in Table 2 of the paper [1]; however, no data are provided on the consumption of different food groups. This information is needed to appraise the practical implications of the results. Some food groups (vegetables, legumes, fruit and nuts, cereals,

olive oil, wine and fish) are characteristic of the Mediterranean diet and have been frequently used in conjunction with non-characteristic elements (meat, dairy), to give a modified functional definition [2]. The provision of information on food groups would clarify how comparable the study by Fraser et al. [1] is to other investigations of this subject.

Several mechanisms, involving fibre, antioxidants or polyphenols, are thought to be responsible for the inverse association between the Mediterranean diet and the risks of the metabolic syndrome and type 2 diabetes or its complications [3]. In addition, excessive accumulation of triacylglycerol in hepatocytes, which is the hallmark of non-alcoholic fatty liver disease, is associated with insulin resistance [4]. Given that certain foods characteristic of a Mediterranean diet are high in polyphenols (e.g. virgin olive oil, fruit and vegetables, red wine), it may be speculated that differences in levels of these constituents across the three diets, rather than the total amount of carbohydrate or fat, are responsible for the greater reductions in the alanine aminotransferase levels observed in the MMD group at 6 and 12 months. In addition to the beneficial effects of a Mediterranean diet demonstrated in the PREDIMED (Prevención con Dieta Mediterránea) trial [5], mentioned in the paper by Fraser et al. [1], a large Spanish prospective dynamic cohort ($n=13,380$), included in the SUN (Seguimiento Universidad de Navarra) study, has recently shown that a Mediterranean-type diet is able to substantially reduce the risk of type 2 diabetes [6] and the metabolic syndrome [7]. It is therefore possible that the evidence provided by Fraser et al. [1] suggesting that a Mediterranean diet can offer substantial benefit on liver steatosis is connected to these reported reductions in risk [6, 7].

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In addition to emerging evidence that Mediterranean diets have a positive effect on cardiovascular epidemiology [8], a classical Mediterranean diet may be the ideal model for the prevention of diabetes [6] and its complications, including some consequences of non-alcoholic fatty liver disease, in type 2 diabetic individuals, such as chronic kidney disease and retinopathy [9].

Duality of interest The authors declare that there is no duality of interest associated with this manuscript.

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