

In search of the best diet in terms of health and body weight

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The Nutrition and Obesity Research Group of the UPV/EHU-University of the Basque Country is studying the effects of diet composition on people's body weight and health. Its participation in the PREDIMED project features among the many pieces of research it has conducted. The project has enabled the group to show that the effect of the Mediterranean diet on the cardiovascular system is even greater than that of a low-fat diet. The group is now going to go a step further and is preparing to study the results of a low-calorie Mediterranean diet combined with physical exercise. It is the PREDIMED PLUS project, which is expected to provide significant results.

According to María del Puy-Portillo, lead researcher in the Nutrition and Obesity group, the group's research in this field goes back a long way. Right from the start they have been focusing their research on the study of obesity. "For example, we study what metabolic alterations are displayed by obese people and how the bodies of obese people respond to different types of diets (diets with different distribution of macronutrients, with different lipid sources, etc.)".

Among the studies of this type, the group's participation in the PREDIMED project stands out "owing to its national dimension and the international repercussions it has had," stresses Portillo. "We are part of a network of researchers of the Instituto Carlos III, and it has been a very ambitious study, over a long period, 5 years, and with a very high number of volunteers, over 5,000." In the study they compared the effects of two types of diet on [cardiovascular health](#): "a low-fat diet,

which is recommended in the United States; and a Mediterranean diet, with a lower fat content but with a higher proportion of monosaturated and polyunsaturated fats."

So they proved that the Mediterranean diet does in fact exert a greater cardioprotective effect than a low-fat diet. The results were published in the prestigious *New England Journal of Medicine* and have led to the starting of the PREDIMED PLUS study, which is seeking to study the results of a Mediterranean [diet](#) without energy restriction, and linked to taking [physical exercise](#). Portillo provides more details about the study: "Specifically, it will be looking at [obese people](#), and the effects on cardiovascular health, weight loss and the maintaining of lost weight will be observed."

Bearing in mind that one of the factors influencing people to give up typical slimming diets is the poor palatability of low-fat diets, Portillo suspects that the results of the new study may be very positive. "We will be working in collaboration with the Cardiovascular Prevention and Lifestyle Group embedded in the Cardiology Service of the University Hospital of Alava-Araba (Txagorritxu Centre) and led by Dr Fernando Aros. Besides participating in the intervention study, we will be doing nutrigenomic and epigenetic studies, and we will be looking for genetic markers that could be used to predict whether the patient will respond better or worse to the planned dietary intervention."

Apart from studies in humans, the UPV/EHU's research group will also be conducting pre-clinical research on cell cultures and laboratory animals. "In these studies we will be exploring how the mechanism of bioactive molecules works. These are molecules that are found in foodstuffs and are not nutrients but exert a beneficial effect on health. So they could therefore be candidates that could be turned into functional ingredients," explained Portillo. Resveratrol and quercetin, present in fruit and vegetables, are examples of bioactive molecules that

have produced good results in the preclinical research done by the Nutrition and Obesity group.

Learning to enjoy eating fruit and vegetables

Another project the UPV/EHU's Nutrition and Obesity group is involved in and which should be highlighted is the programme being run in conjunction with Vitoria-Gasteiz City Council to encourage children to eat fruit and vegetables.

The programme targeting children between the ages of 6 and 12 has been designed by an interdisciplinary group of the UPV/EHU's Pharmacy Faculty, comprising dietician-nutritionists, specialists in sensory analysis, and a sociologist, led by the researcher Bittor Rodríguez of the Nutrition and Obesity group.

Based on theories about behaviour change, the programme set up consists of three workshops (sensory, nutritional and gastronomic) and two activities (purchase of fruit, and breakfast with fruit in the family) bristling with games and interesting suggestions. The innovative component comprises, on the one hand, a new approach (the work of sensory, dietary and culinary skills) and the involvement of key players in the children's education (teachers, parents and environment) and on the other hand, the participation of university experts.

Although the programme ends in June, the preliminary results are promising, since 80% assimilated the nutritional, sensory and culinary messages worked on, and 70% expressed the desire to eat more fruit, 60% more vegetables, including, in both cases, varieties they had not been familiar with before the start of the workshop.

More information: Estruch, R. et al. Primary Prevention of Cardiovascular Disease with a Mediterranean Diet, *N Engl J Med* 2013,

368:1279-1290, April 4, 2013. [DOI: 10.1056/NEJMoa1200303](https://doi.org/10.1056/NEJMoa1200303)

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