

'Bad' dieting increases cardiovascular disease risk

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A 25 year study in Northern Sweden, published in BioMed Central's open access journal *Nutrition Journal*, is the first to show that a regional and national dietary intervention to reduce fat intake, decreased cholesterol levels, but a switch to the popular low carbohydrate diet was paralleled by an increase in cholesterol levels. Over the entire 25 year period the population BMI continued to increase, regardless of either diet, and both the increase in body mass and increased cholesterol levels are indicators of increased cardiovascular risk.

In the 1970's it was noticed that the incidence of cardiovascular disease was higher in northern Sweden than anywhere else in the country and that for men it was amongst the highest in the world. The Västerbotten Intervention Programme (VIP) was set up in 1985 to address this and was later extended to include the entire country. The VIP included better food labelling, healthy information, cooking demonstrations and health examinations and counselling, including diet advice, and still continues today.

Evaluation of this program was combined with data from the WHO MONICA project which monitors cardiovascular disease risk factors. Researchers from Umeå University, University of Gothenburg, and The National Board of Welfare collaborated to review this information covering a 25 year period from 1986.

The impact of the VIP was clearly seen in the changing intake of fat and carbohydrate. By 1992 the fat intake for men had reduced by 3% for

men and 4% for women and remained stable until 2005. Not only did fat intake reduce due to VIP but the types of fat changed, for example from butter to low fat spreads, which was mirrored by a decrease in [cholesterol levels](#). After 2005 the levels of total and saturated fat intake began to increase, returning to levels above those in 1986, and the amount of complex carbohydrates eaten decreased. The timing of this matched the promotion of low GI diets in the media. Consequently cholesterol levels began to once more increase despite the introduction of cholesterol lowering medication.

Prof Ingegerd Johansson, who led this research, commented, "The association between nutrition and health is complex. It involves specific food components, interactions among those food components, and interactions with genetic factors and individual needs. While low carbohydrate/high fat diets may help short term weight loss, these results of this Swedish study demonstrate that long term weight loss is not maintained and that this diet increases blood cholesterol which has a major impact on risk of cardiovascular disease."

More information: Associations among 25-year trends in diet, cholesterol and BMI from 140,000 observations in men and women in Northern Sweden Ingegerd Johansson, Lena Nilsson, Birgitta Stegmayr, Kurt Boman, Göran Hallmans and Anna Winkvist, *Nutrition Journal* (in press)

Provided by BioMed Central

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