

### **Vegetarian Study: A little meat does no harm if your lifestyle is healthy**

You don't have to be a vegetarian to grow as old as Methusaleh. If you refrain from smoking, consume alcohol moderately, stay physically active and avoid becoming overweight, you can dramatically reduce your risk of premature death. A German study on vegetarians and health-conscious non-vegetarians reveals that moderate meat consumption in combination with a healthy lifestyle is apparently not detrimental to health.

Epidemiologists at the German Cancer Research Center (Deutsches Krebsforschungszentrum, DKFZ) led by **Jenny Chang-Claude** followed 1,225 vegetarians and 679 health conscious non-vegetarians for 21 years from 1978 until 1999. The aim of the study was to determine the relative effects of a vegetarian diet and lifestyle factors on mortality. The observed deaths among the study participants were compared with the numbers expected based on the mortality in the general population. The 1,904 study participants were classified into three different dietary groups: 60 vegans, who eat neither meat, fish, eggs nor dairy products, 1,165 lacto-ovo vegetarians, who avoid meat and fish, but eat eggs and/or dairy products, and 679 non-vegetarians\*, who occasionally or regularly eat small amounts of meat or fish.

By the end of 1999, 535 (28 %) of the study participants had died, compared to 909 expected deaths. Total mortality was therefore significantly lower than that of the general population. Mortality among men was reduced by almost one half and among women by about one third. The reduced mortality was predominantly due to a deficit of deaths from circulatory diseases, although there was also a considerable reduction in deaths from cancer, respiratory and gastrointestinal diseases.

Within the study population, total mortality was unrelated to avoidance of meat. However, vegetarians had a 30 % lower risk of dying from ischemic heart diseases compared to non-vegetarians. Although this finding failed to reach statistical significance, it may be truly attributed to abstinence from meat and is in line with the hypothesis that animal fat and a high cholesterol diet promote ischemic heart disease, commented Jenny Chang-Claude. Smoking turned out to have the strongest influence on mortality in this study population, despite the low prevalence of smoking among the study participants. Regular alcohol consumption was only found to be associated with risk of dying from cancer, while being overweight increased mortality from circulatory diseases. A moderate or high level of physical activity, on the other hand, turned out to have a strong protective effect against all causes of death, including deaths from cardiovascular diseases and cancer.

There was no difference in the mortality of vegetarians and health conscious non-vegetarians in the study population. "But both groups lead a very health conscious lifestyle, which clearly differentiates them from the general population," epidemiologist Chang-Claude said. For vegetarians and non-vegetarians alike, the recommendations for a long healthy life are: no smoking, regular exercise, a diet rich in fruit and vegetables, moderate alcohol consumption and avoiding overweight.

\* also termed "moderate vegetarians" in earlier publications

Jenny Chang-Claude, Silke Hermann, Ursula Eilber, and Karen Steindorf: Lifestyle Determinants and Mortality in German Vegetarians and Health-Conscious Persons: Results of a 21-Year Follow-up. *Cancer Epidemiol Biomarkers Prev*, April 2005; 14(4), 963-968.

The task of the Deutsches Krebsforschungszentrum in Heidelberg (German Cancer Research Center, DKFZ) is to systematically investigate the mechanisms of cancer development and to identify cancer risk factors. The results of this basic research are expected to lead to new approaches in the prevention, diagnosis and treatment of cancer. The Center is financed to 90 percent by the Federal Ministry of Education and Research and to 10 percent by the State of Baden-Wuerttemberg. It is a member of the Helmholtz Association of National Research Centers (Helmholtz-Gemeinschaft Deutscher Forschungszentren e.V.).

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