

Vitamin D May Reduce Risk for Type 2 Diabetes

Neuherberg, 30.09. 2011. Scientists of Helmholtz Zentrum München have shown that people with good vitamin D status have a lower risk of developing type 2 diabetes mellitus. The study, carried out in collaboration with the German Diabetes Center in Düsseldorf (DDZ) and the University of Ulm, will be published in the October issue of the prestigious journal Diabetes Care.



PD Dr. Barbara Thorand (left), Prof. Dr. Annette Peters (right)

New research on participants of the KORA study has shown that people with good vitamin D status have a lower risk of developing type 2 diabetes. Inversely, people with too low levels of vitamin D in the blood have an elevated risk. This effect may be partly due to the anti-inflammatory effect of vitamin D. The findings of the study, which was carried out at Helmholtz Zentrum München in collaboration with Dr. Christian Herder of the German Diabetes Center Düsseldorf and Professor Wolfgang Koenig of the University of Ulm, may have direct implications for the prevention of this common widespread disease.

“Vitamin D deficiency is relatively common in Germany because of modern lifestyle factors and the geographic latitude. Especially during the winter months, vitamin D levels are often inadequate due to the lack of sunlight,” said Dr. Barbara Thorand of the Institute of Epidemiology II of Helmholtz Zentrum München. “If follow-up studies confirm our findings, a targeted improvement of the Vitamin D status of the population could also reduce the risk of diabetes.” If people spend sufficient time outdoors the human body can produce vitamin D on its own. The ultraviolet radiation (UVB) contained in sunlight cleaves the vitamin D precursor 7-dehydrocholesterol in the skin, thus producing previtamin D₃. The further synthesis of vitamin D occurs in the liver and the kidneys. Moreover, the supply of vitamin D can be improved by choosing the right foods (e.g. fatty fish, eggs, dairy products) or taking vitamin D supplements

More than six million people in Germany have type 2 diabetes mellitus, the number of undiagnosed cases could be equally high. So far there is no cure for this complex common disease. Type 2 diabetes is a disorder of the glucose metabolism characterized by a loss in the effect and sufficient production of the hormone insulin. The pathogenic mechanisms of the disease are not yet fully understood. However, it is known that the combination of genetic and lifestyle factors leads to diabetes. The goal of Helmholtz Zentrum München is to understand the

pathophysiology of common diseases and to derive new targets for diagnosis, therapy and prevention.

Further information

Original publication:

Thorand B et al (2011): Effect of Serum 25-Hydroxyvitamin D on Risk for Type 2 Diabetes May Be Partially Mediated by Subclinical Inflammation: Results from the MONICA/KORA Augsburg study. *Diabetes Care*. 2011 Aug 26. [Epub ahead of print]; Volume 34, Number 10

Link to specialist publication <http://care.diabetesjournals.org/content/34/10/2320.long>

KORA (Cooperative Health Research in the Region of Augsburg) has been investigating the health of thousands of individuals from the region of Augsburg for more than 20 years. The goal is to understand the impact of environmental factors, behavior and genes. Key research topics of KORA are the etiology and course of chronic diseases, especially myocardial infarction and diabetes mellitus. For this purpose, lifestyle risk factors (e.g. smoking, nutrition, exercise), environmental factors (e.g. air pollution, noise) and genetics are studied. From the perspective of health care research, the utilization and costs of health care are examined. www.helmholtz-muenchen.de/kora

As German Research Center for Environmental Health, **Helmholtz Zentrum München** pursues the goal of developing personalized medical approaches for the diagnosis, therapy and prevention of major common diseases such as diabetes mellitus and lung diseases. To achieve this, it investigates the interaction of genetics, environmental factors and lifestyle. Helmholtz Zentrum München has about 1,900 staff members and is headquartered in Neuherberg in the north of Munich. Helmholtz Zentrum München is a member of the Helmholtz Association, a community of 17 scientific-technical and medical-biological research centers with a total of about 31,000 staff members. www.helmholtz-muenchen.de

Contact for media representatives

Sven Winkler, Helmholtz Zentrum München – German Research Centre for Environmental Health, Ingolstädter Landstrasse 1, 85764 Neuherberg - Tel.: +49 89-3187-3946 - Fax: +49 89-3187-3324 - E-Mail: [presse\(at\)helmholtz-muenchen.de](mailto:presse(at)helmholtz-muenchen.de)

Scientific contact

For the study: PD Dr. Barbara Thorand, Helmholtz Zentrum München - German Research Centre for Environmental Health, Institute for Epidemiology II, Ingolstädter Landstrasse 1, 85764 Neuherberg,
Tel. +49 89 3187-4480, E-Mail: [thorand\(at\)helmholtz-muenchen.de](mailto:thorand(at)helmholtz-muenchen.de)

For KORA: Prof. Dr. Annette Peters, Helmholtz Zentrum München - German Research Centre for Environmental Health, Institute for Epidemiology II, Ingolstädter Landstrasse 1, 85764

Neuherberg,

Tel. +49 89 3187-4566, E-Mail: [peters\(at\)helmholtz-muenchen.de](mailto:peters(at)helmholtz-muenchen.de)