

Press Release

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+++++FINAL VERSION+++++

TUM celebrates ten years of success for the Else Kröner Fresenius Center for Nutritional Medicine

Nutrition at the heart of medical research

The Else Kröner Fresenius Center for Nutritional Medicine (EKFZ), which has been part of the Technical University of Munich for the past ten years, has played a major role in transforming nutritional sciences in Germany: the combination of the bio-scientific discipline with medicine was a trailblazing approach in the German university landscape in the year the Center was founded. Since then, numerous pioneering studies have been carried out on the topics of fetal programming, genetic diseases of the digestive tract and brown fat cells.

According to current estimations, chronic diseases account for two-thirds of all expenditure in the healthcare system. Nutritional status can affect whether an individual suffers from obesity, chronic diabetes, cardio-vascular diseases, cancer or osteoporosis over the course of their life. However, the risk factor of nutrition can be influenced through a change in diet, for example.

The three pillars of the Else Kröner Fresenius Center for Nutritional Medicine at the TUM

The factors of daily nutrition that make us ill are the focus of research being conducted by three teams at the Else Kröner Fresenius Center at the School of Life Sciences Weihenstephan (WZW) and at the School of Medicine. Professor Hans Hauner holds the Chair of Nutritional Medicine, having also played a major role in the establishment of the Center from the outset as Director of the EKFZ. Professor Heiko Witt presides over Paediatric Nutritional Medicine, Professor Martin Klingenspor holds the Chair for Molecular Nutritional Medicine.

“When the Else Kröner-Fresenius Foundation and the Technical University of Munich decided in 2000 to set up a center for nutritional medicine, this was a fundamentally new concept for Germany’s scientific landscape,” says Professor Hauner – something that still hasn’t changed to this day. “Rehabilitation medicine is the only area that has seen a practical large-scale application of nutritional medicine,” says the EKFZ Director. In a country in which the “inappropriately high consumption of sugar, salt and saturated fats costs the German healthcare system an additional 16.8 billion euros in 2008” - says Hauner with reference to a study from the science journal PLOS - intensive nutrition research like that being carried out by the EKFZ is vital.

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The INFAT study (impact of nutritional fatty acids during pregnancy and lactation on early human adipose tissue development), a randomized and controlled trial carried out by Hauner and his team over a period of almost ten years, was the first study of its kind to investigate the effect of targeted nutrition in pregnancy and lactation on the adipose tissue of new-born and small children up to the age of five. Here, the focus was primarily on the possible benefits of supplementation with omega 3 fatty acids as a means of protecting children from obesity – a theory that could not be confirmed.

The team working with Professor Heiko Witt from Paediatric Nutritional Medicine at the EKFZ is concentrating on hereditary factors that lead to diseases or digestive disorders. Witt and his staff were able to prove that the majority of chronic pancreatitis cases in childhood are hereditary. Five different genes in total have been identified by his group to cause chronic inflammation of digestive glands. All five works were published in the renowned journal *Nature Genetics*.

Professor Martin Klingenspor is researching brown and beige fat cells: Which biochemical control lever has to be activated to increase these fat-burning fat cells and initiate their “molecular heating”? As it is clear since 2009 that adults also have such fat cells, they have become a therapeutic approach to fighting obesity. For the isolator protein in the mitochondria, which function as power plants for brown and beige fat cells, Klingenspor’s team has developed several new procedures to measure the activation of fat burning. In this way, new activators can now be identified and tested for their suitability in fighting obesity.

Milestone for national and international nutritional sciences

“The EKFZ is a milestone for nutritional and food sciences, not just across Germany, but throughout Europe,” says President Wolfgang Herrmann. “The TUM is extremely grateful to the Else Kröner-Fresenius Foundation for its continued tremendous support of the EKFZ, thereby enabling the international aura of nutritional medicine research at the TUM to be perpetuated.”

According to Herrmann, this subject represents a paradigm shift in medical research and education, as it focuses on the prevention mandate. “Modern medicine is not just about curing diseases, but also preventing them,” says Professor Herrmann. For this development, three faculties at the TUM are forming a common platform: the School of Life Sciences Weihenstephan, the School of Medicine and the Department of Sport and Health Sciences.

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Die **Technische Universität München (TUM)** ist mit mehr als 500 Professorinnen und Professoren, rund 10.000 Mitarbeiterinnen und Mitarbeitern und 39.000 Studierenden eine der forschungsstärksten Technischen Universitäten Europas. Ihre Schwerpunkte sind die Ingenieurwissenschaften, Naturwissenschaften, Lebenswissenschaften und Medizin, ergänzt um Wirtschafts- und Bildungswissenschaften. Die TUM handelt als unternehmerische Universität, die Talente fördert und Mehrwert für die Gesellschaft schafft. Dabei profitiert sie von starken Partnern in Wissenschaft und Wirtschaft. Weltweit ist sie mit einem Campus in Singapur sowie Verbindungsbüros in Brüssel, Kairo, Mumbai, Peking, San Francisco und São Paulo vertreten. An der TUM haben Nobelpreisträger und Erfinder wie Rudolf Diesel, Carl von Linde und Rudolf Mößbauer geforscht. 2006 und 2012 wurde sie als Exzellenzuniversität ausgezeichnet. In internationalen Rankings gehört sie regelmäßig zu den besten Universitäten Deutschlands.
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The Else Kröner-Fresenius Foundation was established in 1983 by entrepreneur Else Kröner, née Fernau, with the Foundation being her sole heir. The non-profit body was dedicated mainly to supporting medical research and medical-humanitarian projects. The EKFS generates almost all its income through dividends from the Fresenius health care group, of which it is the main shareholder. In accordance with its charter, the Foundation only supports research projects whose results can be made accessible to the public. To date, the Foundation has funded more than 1,450 projects with a total volume of roughly 235 million euros. www.ekfs.de

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