

“When it comes to nutrition and diet matters, a lot of young people are **pretty clueless**”

How can we motivate people to eat healthier food? TUM nutritionist Prof. Hans Hauner and his team are adapting their tactics to different age brackets: To address young people, they are relying on social media, for adults, enhanced fast food is on the cards, while 3D printers will help make food more appetizing for senior citizens. A conversation on the difficulty of breaking entrenched habits.

Link

www.professoren.tum.de/hauner-hans



Use 3D printers to make food more attractive

Make convenience food healthier

Senior citizens

Adults

Pregnant women

Adolescents

Direct effect on next generation

Community assessment via app



Mr. Hauner, you – and your colleagues – have been encouraging your patients for many years to improve their diets, and you are also appearing quite regularly in the media as an expert on nutrition. But ultimately, not much has changed. Why did you nevertheless fall back on a counseling concept in your major GeliS study – Healthy living in pregnancy?

Hans Hauner: Pregnant women are exposed to a particular risk of overeating. Almost half of the women in Germany put on more weight in pregnancy than is recommended. For a woman of normal weight, this should be 11 to 16 kilos. Putting on more weight increases the risk of gestational diabetes, high blood pressure and birth complications. In a preliminary study to GeliS, we found that professional lifestyle counseling had a clearly positive effect, while there were similar indications in the specialist literature.

But your study with around 2,300 respondents then showed that the lifestyle counseling had practically no effect.

HH: We were surprised. Maybe our four counseling sessions were not enough. The main difference, though, was that the counseling was held in normal gynecologist practices where there is often little time for relaxed conversations and little experience in lifestyle counseling. We will, however, continue to evaluate the results and follow the weight developments and health status of the children until they reach the age of five. We want to find out how diet and exercise in pregnancy affects the risk of the children becoming overweight at an early age. And in the GeliS study, we were able to establish that at least the weight of the children at birth was slightly lower when the expectant mothers had received lifestyle counseling.



“Dietary habits are the result of a very long learning process and they are not easy to change.”

Hans Hauner

Hans Hauner is also offering courses and further training. In the Institute’s teaching kitchen, for example, students can learn how to cook good, healthy food.

You are also using counseling with young adults in the enable cluster, although success is looking quite modest – why is this the case?

HH: We are not providing advice in the traditional sense in the form of teaching on nutritional and dietary topics. We wouldn’t be able to reach the young generation like that. The 18-to-25-year-olds are particularly at risk when they leave their families where the parents may have made sure they were eating sensibly. Many of them are pretty clueless in terms of nutrition, and wind up living largely on pizzas and fast food. Together with our computer scientists, we are developing apps in which we can subconsciously convey the message of a sensible diet through a games-led approach. In the Appetite app, users photograph what’s on their plate in front of them, and the other users then assess whether that is healthy food or not. By the way, the assessment of the crowd matches that of the nutrition experts – we tested it. As a further refinement, we are planning a virtual nutrition consultant in order to incorporate users’ current context. The main aim is to register indications of stress. Because under stress, we tend to pay less attention to our diet. We are also considering offering a virtual supermarket where we will include typical products, thereby linking the choice of foods to information on nutrition in a fun and playful manner.



Young people can be inspired by the Appetite app: Users take pictures of what they have on their plates in front of them. The community then assesses whether these are healthy, sensible meals or not.

You are following a different concept for the age bracket of older adults: It's not about trying to change people's behavior but the food instead.

HH: Yes, because dietary habits are the result of a very long learning process and they are not easy to change. At the same time, we have an increased risk of diabetes, cardiovascular diseases and certain cancers in the age bracket from 40 to 65, all of which are heavily influenced by diet. Consequently, we conducted studies in this age group in which we added fiber to various convenience food products such as frozen pizzas, hamburgers and meatloaf rolls and changed other ingredients, thereby improving the health value of these products. We were able to establish that people accept this from a taste perspective and that their blood test results improve at the same time.

While more and more people tend to overeat, and therefore put on too much weight, around one third of the very senior individuals have the opposite problem: they are undernourished. There have been many demands for those of very advanced age in nursing homes to be given more meat on their plates. Would that be the solution?

HH: It would probably suffice if people of that age ate whatever was on their plate. Older people feel less hungry and thirsty. As a result, they get too little protein and don't drink enough. This means they are in danger of losing muscle mass, becoming fragile and dehydrated.

But you cannot force people to eat.

HH: That's true, but you certainly can make food more attractive. Many people of advanced age experience difficulty swallowing or have serious dental issues. They are not able to eat stringy meat any more. In nursing homes, food is pureed for such individuals. But it looks so unattractive that they don't enjoy eating it. Consequently, in one of our projects, our partners are working on using a 3D printer to restore shape to pureed food so that it looks like attractive food once again. Another group is trying to make protein drinks so tasty that individuals will enjoy drinking them. Together with our computer scientists, our geriatrician partners in Nürnberg have developed a cup with built-in scales which measure the volume imbibed and remind people to hydrate themselves by way of voice messages.

You recruited and studied more than 500 people in the four age groups in the enable cluster. In view of the variety of foods that interact with each other and our genes, by which the metabolism differs from person to person, isn't that too small a group to obtain meaningful results?

HH: We analyzed these 500 people very carefully with regard to their health status, their eating habits and preferences and their metabolism. We were able to identify major individual differences – we wouldn't have been able to do that to the same depth with 5,000 respondents. I think this gives us a good chance of finding new connections between diet and health. But to do so, various disciplines are working closely together, and the complexity of the subject of nutrition is such that nothing less is required. These are socially highly relevant issues and I really enjoy addressing them.

■ *The interview was conducted by Markus Bernards*



Prof. Hans Hauner

As a child, Hans Hauner, who was born in 1955 and grew up in Regensburg, actually wanted to become a missionary. In some ways, nothing has changed, he reckons, as he's spent 30 years of his career trying to convince people to improve their diets. Hauner studied medicine in Regensburg and at TUM and continued his studies at the University of Ulm, qualifying as an internist majoring in endocrinology/diabetology. This was followed by a period as Senior Physician at the German Diabetes Center in Düsseldorf. In 2003, Hans Hauner was appointed to TUM's newly founded Chair for Nutritional Medicine and since then has been active as Director of the Else Kröner-Fresenius Center for Nutritional Medicine.
