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# Food, Fitness & Pharma for Health and Disease

[www.foodfitnessphama.ku.dk](http://www.foodfitnessphama.ku.dk)

The UNIK initiative is supported by a 120 mill. dkr (16 mill. Euro) grant from the Danish Ministry of Science, Technology and Innovation. The project runs for 5 years, starting September 2009 – and is expected to continue beyond this timeframe.

The collaboration between research groups from 18 different institutes at 6 faculties was made possible by this unique form of granting, paving the way for a novel synergistic research approach.

## The Research Initiative

"Food Fitness & Pharma is a whole new type of research initiative where scientists broadly across the whole University of Copenhagen join forces in novel, synergy-promoting constellations and interdisciplinary approaches. This initiative involves integration of knowledge from areas such as sociology, psychology, economy, law and food technology with biomedical areas such as genetics, epidemiology, muscle physiology, pharmacology and bariatric surgery – all joined by the common aim to understand, prevent and treat lifestyle diseases"



Thue W Schwartz,

Professor at the Faculty of Health Sciences and head of the UNIK

## Key Research Questions

Mapping of the 'hormone cocktail' responsible for the fast 'cure' of type 2 diabetes and the sustained weight loss following gastric bypass surgery. Can this be induced by food or mimicked by a drug?

Why is fitness healthy – and much more than 'burning off calories'? And how much is enough?

Why do we stick to 'unhealthy habits'? And which changes in the environment will make our society healthier?

How does our genetic background – the 'cards that we have on our hands' - make us particular susceptible to particular aspects of lifestyle (fat, sugar, inactivity etc)?

State of the art	Expected outcome	Impact and implementation
<p><b>Food, Gut hormones, and Pharma</b></p> <p>Gastro intestinal signals are involved in appetite regulation and a cornerstone in the curative effects of bariatric surgery in the treatment of type 2 diabetes.</p>	<p>Mapping of the signals, receptors and mechanisms responsible for these effects.</p>	<p>New drugs for the treatment of obesity and type 2 diabetes.</p> <p>Refined and new food products.</p>
<p><b>Fitness and Muscles</b></p> <p>Physical activity 'burns off calories', but also improves insulin sensitivity and affects substrate oxidation. The cellular and molecular mechanisms are only partly understood.</p>	<p>Molecular mechanisms behind effects of physical activity.</p> <p>Platform for refined recommendations for physical activity.</p>	<p>New regimens for preventing and treating life style-related diseases by refined and differentiated recommendations for physical activity as well as by food products and diet recommendations.</p> <p>Socially and ethically robust preventive policy measures and regulation and new social psychological methods for reducing overweight.</p>
<p><b>Socioeconomics and psychology</b></p> <p>It is known that most strategies employed to make people change behavior have little or no impact. More needs to be known about why people act as they do and which interventions they respond to.</p>	<p>New platforms for optimizing public and private regulations taking ethical issues into account.</p> <p>Knowledge about influences on everyday health related habits and about the effect of social psychological and mind-affecting methods for reducing overweight.</p>	<p>Socially and ethically robust preventive policy measures and regulation and new social psychological methods for reducing overweight.</p>
<p><b>Genetics and Epidemiology</b></p> <p>Genes and environment both contribute to obesity, but how they interact is largely unknown</p>	<p>Information about how the genes and environment have interacted in the development of the obesity epidemic.</p>	<p>A better informed basis for stopping the obesity epidemic.</p>