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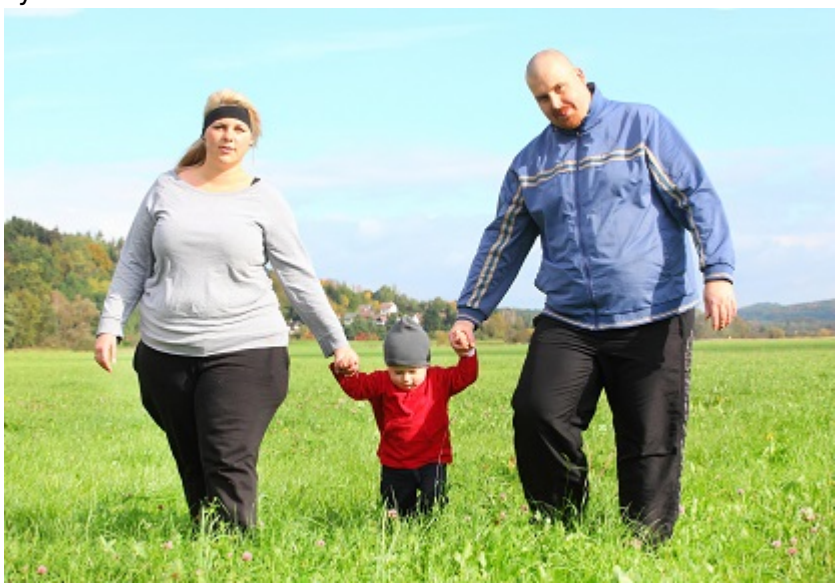
The EU is investing in research to counter rising obesity among Europeans. Ongoing projects such as SATIN, Full4Health, I.Family and EarlyNutrition are leading to a better understanding of why more people are becoming obese – research that could save lives and reduce the burden on national health systems.


[1]

Obesity is increasing worldwide, with the number of those affected nearly doubling from 1980 to 2008. Around 3.4 million adults [2] die each year as a result of being overweight or obese.

In Europe over half of all men and women are overweight, and roughly one-third are obese. Currently, EU countries spend an average of 7% of their public health budgets on diseases linked to obesity. Substantial indirect costs also arise from lost productivity due to work absences and premature death.

The EU's response is to fund research with a multidisciplinary approach to combating obesity and that supports healthier eating habits. Childhood obesity is also a focus, as this is strongly linked to a higher risk of disease later in life. The research includes advancing scientific understanding of the interaction between food, nutrition, genetics, age and health.

Filling a gap in the market

For example, the EU-funded SATIN project [3] is developing foods that make people feel fuller faster, and for longer, to help them control their weight. The project's contributions so far include a screening platform that allows researchers to identify food elements that satiate appetites.

The approach provides an opportunity for food manufacturers to create new, competitive products for the market – including bread, juices and dairy products.

“Obese and overweight people are less likely to feel full after eating, partly because the energy-dense foods they prefer have a reduced impact on gastrointestinal hormone signals that help promote feelings of satisfaction and fullness,” explains project coordinator Jason Halford, a researcher at the UK’s University of Liverpool. “By developing a new range of foods with healthier nutritional profiles and added functionality, this project will help consumers control their appetites and contribute to a low-energy-dense diet.”

The researchers are testing the foods identified during the five-year project in a lab-based model digestive system. A mechanical ‘industrial cabinet’ simulates the different processes involved as food travels through a human’s gastrointestinal tract.

The components of food, as well as the food itself – such as a bread slice – are put into the simulator and then extracted at various stages in the system for testing in human cell cultures, to measure the cells’ satiety response.

The researchers are conducting tests in six clinical trials on a variety of foods identified for their ability to help people lose weight or stay at a healthy weight. Final results are expected in 2016.

By the end of the project in December 2016, the SATIN team also plans to release a number of products that induce satiety – ranging from fruit and vegetable juices and dairy products to bakery products and savoury dishes.

The project will also publish a satiety cookbook for those wanting to learn how to cook more filling meals at home.

“SATIN is helping the food industry to be part of the solution, not just part of the problem,” adds Halford.

Deciphering appetite

Complementing this research, Full4Health [4] is investigating the links between food and satiety. Its researchers are focusing on the mechanisms behind feeling full.

This includes study of the signals sent by nerves in the gut, how these signals are integrated in the brain’s hypothalamus (which is involved in regulating energy balance), the interaction of the hypothalamus with other parts of the brain, and ultimately how these links translate into decisions about what and when to eat.

A major part of the work involves testing volunteers to determine how age, body weight and gender affect satiety.

“Potential ways of manipulating diet might be more effective in some strata of the population than others,” says project coordinator Julian Mercer of the University of Aberdeen’s Rowett Institute of Nutrition and Health.

A better understanding of what makes people full could lead to better dietary decisions, says Mercer. For example, he foresees that eventually a “satiety index” could be included on food packaging as a guide to consumers.

He adds: “Everyone considers food to be a major part of the obesity problem, but can we manipulate it and make it part of the solution as well?”

Factoring in eating habits

EU funding also supports research into childhood obesity, a huge area of concern and a growing problem. Over 60% of children who are overweight before puberty will remain overweight in early childhood, according to estimates by the World Health Organisation. Childhood obesity is also strongly linked to cardiovascular disease, type 2 diabetes, orthopaedic problems, mental disorders, underachievement in school and lower self-esteem.

Projects such as I.Family [5] and EarlyNutrition [6] are investigating nutritional decisions made during pregnancy and infancy and the link with obesity later on in life.

I.Family is studying the eating habits of participating children and their families at research centres in Belgium, Cyprus, Estonia, Germany, Hungary, Italy, Spain and Sweden. Participants are completing paper and online questionnaires, being interviewed on their relationships and health, undertaking psychological tests and physical examinations, providing biological samples and using accelerometers to measure activity.

The study will help researchers identify effective guidance to help families make lifestyle – and in particular food – choices that promote lifelong health.

In parallel, EarlyNutrition is studying how diet and lifestyle before and while pregnant, and during infancy, is linked to obesity and the occurrence of associated diseases in later life.

The researchers are testing indications that early decisions on nutrition partially contribute to the increasing rate of obesity, especially in children. What and how people eat early on in life could determine their weight later on.

They hope the research will yield scientific insight into the best ways to prevent obesity due to this early dietary 'programming'.

The EU will continue to invest in such studies through its current research and innovation funding programme called Horizon 2020, launched on 1 January 2014. Over Horizon's seven-year span, almost €80 billion will be invested in research and innovation projects to support Europe's economic competitiveness, extend the frontiers of human knowledge, and improve people's lives in areas like health, the environment, transport, food and energy.

SATIN videos and podcasts [7]

See also:
CORDIS [8]
Project:
Satiety Innovation
Project Acronym:
SATIN

Links
[1] https://ec.europa.eu/programmes/horizon2020/en/system/files/newsroom/fotolia_72469203_subscription_s_9223.jpg
[2] http://www.who.int/mediacentre/factsheets/fs311/en/
[3] http://www.satin-satiety.eu/
[4] http://www.full4health.eu/
[5] http://www.ifamilystudy.eu/
[6] http://www.project-earlynutrition.eu/

[7] http://www.SATIN-satiety.eu/videos-podcasts/
[8] http://cordis.europa.eu/project/rcn/101671_en.html