

Age-old wisdom

UHasselt leads fight against chronic illnesses among the elderly



Andy Furniere
More articles by Andy \ flanderstoday.eu

\ UHASSELT.BE/HEALTHYAGING

Thanks to improved living standards, there's a good chance we will live to old age. But there's also a high risk of chronic disease in the elderly. A project led by Hasselt University (UHasselt) aims to protect people better against such diseases by examining the role of the immune system in ageing.

"As people grow older, their immune system weakens, making them more vulnerable to diseases," says Kim Pannemans of UHasselt's Biomedical Research Institute (Biomed), who is leading the Healthy Aging project. "We will analyse the reasons behind the ageing process of the immune system and try out ways to slow down this process."

Among the chronic health problems the project will focus on are cardiovascular diseases, multiple sclerosis (MS), rheumatism, chronic obstructive lung diseases and asthma. UHasselt has particular expertise in MS research.

An important part of the project involves finding biomarkers to detect the ageing of the immune system. Biomarkers are substances in the blood that indicate the presence of diseases.

"We will evaluate existing biomarkers and try to find new ones," explains Pannemans. "With a set of good biomarkers, we will design a diagnostic tool to check for diseases related to the ageing immune system."



© Ingimage

suffering from an age-related chronic disease no longer respond to general therapies," said Pannemans. "In the long term we hope to contribute to the development of a system that enables doctors to prescribe a treatment adjusted to a patient's specific needs."

A second important part of the project concen-

and policymakers devoted to boosting innovation revolving around improving the ageing experience. Happy Aging serves as a living lab, organising product and service tests by elderly people that allow them to live at home longer, more safely and in better conditions.

Apart from improving the health of the general population and reducing the costs for the health-care sector, the project also aims to encourage the economy in Flanders, specifically in Limburg. "Our work can boost the R&D of our companies and lead to the production of new applications," says Pannemans.

The project responds closely to the goals put forward in the Salk recovery programme for Limburg, set up in 2013 by the Flemish government after the closure of the Ford factory in Genk was announced. One of the programme's goals is to develop initiatives in the life sciences and health-care sectors, particularly niches with a strong growth potential, such as healthy ageing.

For the project, which began at the end of March, UHasselt is working with other universities in Belgium, Germany and the Netherlands. There are also several companies involved, including MonaCell and imo-imomec, which are both based in Diepenbeek, near Hasselt.

The project, which will last for three years, is supported by the Interreg cross-border programme of the EU's regional development fund, and by local partners such as the province of Limburg. About €4.8 million is being invested in the project, with the Interreg contribution worth about half of the costs.

“We hope to contribute to the development of a system that enables doctors to prescribe treatments adjusted to patients' specific needs

Research centre imo-imomec – a joint initiative by UHasselt and nanotechnology research centre imec – will then turn this basic diagnostic tool into concrete technology, known as biosensors. These biosensors can be used on larger groups of patients.

The biomarkers will also be used to examine immune therapy methods. Immune therapy is a targeted treatment method, meaning the immune system is stimulated to focus on battling a specific health problem. "This research is still in a very early stage, so we won't carry out such experiments on people," Pannemans says.

The work on the biomarkers should also help researchers develop more customised treatments for patients. "About 70% of patients

trates on experiments with nutraceuticals – products derived from food sources with extra health benefits. The team will test the effect of three kinds of nutraceuticals, on asthma patients and others.

The project will examine the effect of the nutraceutical Mona001, developed by Limburg biomedical company MonaCell, one of the project's partners. "Elderly test people will take the nutraceutical and also do power training," explains Pannemans. "We will analyse the extent to which the nutraceutical helps strengthen their muscles."

For the studies on people, UHasselt can count on the expertise of Limburg's Happy Aging platform: a community of experts, companies, care organisations, knowledge institutes

Guarantee scheme for companies to explore geothermal energy

Flanders' energy minister hopes to boost the geothermal sector with a guarantee scheme for companies that invest in deep geothermal energy projects.

Geothermal energy originates from the formation of the planet, decay of materials in the Earth's crust or friction from tectonic plates, and is known as deep geothermal energy if it comes from further than 500 metres below ground. It provides a sustainable energy source when hot water is pumped from it and the heat extracted. Drilling for deep geothermal energy requires major investment, with significant risk that it will generate less energy than hoped for as there is still a lack of detailed knowledge about the



© Courtesy Vito

local subsurface. "With the guarantee scheme, we hope to convince companies to invest and to facilitate a breakthrough of deep geothermal energy in Flanders," energy minister Bart

Tommelein said.

Companies that want to drill in deep earth layers can submit a dossier to the government. If it turns out after drilling that the estimated energy production is not achieved, the government will pay back certain costs. The companies contribute to the scheme by paying a premium. Until now, only the Flemish Institute for Technological Research (Vito) has carried out a trial project on deep geothermal energy in Flanders, with promising results. The Kempen region, in the north of Antwerp and Limburg, is the most attractive area for drilling because the hardest layers of rock are deeper there than elsewhere.

\ AF

WEEK IN INNOVATION

Centres join forces on sustainable economy

Knowledge and education centres in Flanders and the Netherlands are joining forces to boost the bio-based economy in the border region. The consortium of 14 centres will raise awareness in the education and business sectors of the opportunities provided by this kind of economy. In a bio-based economy, products and materials are made from renewable biological resources or waste streams rather than fossil fuels. The partners will first analyse developments in the domain of the bio-based economy and determine the knowledge and skills that are needed for staff in particular sectors. They will then propose adjustments for education programmes in secondary schools, university colleges and universities.

Prestigious grant for brain research

Neurologist Roosmarijn Vandenbroucke, of the Flemish life sciences research institute VIB and Ghent University, received the Baillet Latour Grant last week from Queen Mathilde. Awarded annually, the grant constitutes an investment of €450,000 in research for a period of three years. The 37-year-old, a specialist in neurological diseases, is leading a study on the administration of drugs into the brain. The efficient delivery of medication in treatment of neurological diseases remains a major, unsolved challenge in medicine, and Vandenbroucke is investigating the role of brain barriers in neurological disorders such as Alzheimer's disease. Her project's goal is to use the blood-cerebrospinal fluid barrier as a gateway into the brain.

Patients to have say in cancer research

Flemish cancer fund Kom op tegen Kanker will involve patients in decisions about which research projects they support, to ensure that studies result in direct value for people with cancer. Until now, a biomedical committee made up of national and international cancer experts has chosen the research that Kom op tegen Kanker invests in. A patients' committee will now also have a say. The patients' commission, established at the end of 2016, has 15 members, including people with cancer, former patients and people from their close environment. They will meet four times at the beginning of each year and give their opinions on the biomedical projects. The first meeting took place this year. \ AF