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An action plan to prevent Alzheimer's disease

As the population ages, the number of people with Alzheimer's disease in Europe will double by 2050. A task force led by UNIGE and HUG is laying the foundations for a preventive protocol.

High resolution pictures

Memory loss, behavioural changes, cognitive deficits: Alzheimer's disease leads to a dramatic loss of autonomy for those affected and has a heavy impact on health costs. Its prevention has become a real social challenge. An international task force, led by the University of Geneva (UNIGE) and the Geneva University Hospitals (HUG), is setting out guidelines for innovative services to prevent Alzheimer's disease. These will soon be an integral part of second-generation memory clinics. These guidelines are detailed in an article published in the *Lancet Regional Health - Europe*.

With 10 million people affected in Europe, Alzheimer's disease is the most common neurodegenerative disease. It is characterised by progressive disabling memory loss and cognitive deficits caused by an accumulation of toxic proteins in the brain. Its social and economic impact is considerable. On a global scale, it is estimated to be worth around USD 1,500 billion per year* and in Switzerland CHF 11.8 billion per year**.

Large-scale preventive protocol

Improved lifestyles (physical activity, attention to nutrition, cardiovascular prevention) have reduced the risk of developing Alzheimer's disease or related forms. However, the prevalence of dementia continues to rise with the ageing population. Today, an international task force led by the UNIGE and the HUG, and composed of scientists from twenty-eight institutions, is laying the foundations of a preventive protocol that could be deployed on a large scale.

"We based this protocol on the experience of all the members of the task force. Some of the recommended interventions are ready to be applied or are already applied. Others are still under development," explains Giovanni Frisoni, Full Professor of Clinical Neuroscience at the UNIGE Faculty of Medicine and Director of the HUG Memory Centre. Professor Frisoni and the co-authors of the article have identified four pillars of this novel concept in the field of dementia and Alzheimer's: risk assessment; risk communication; risk reduction and cognitive enhancement.

1. Risk assessment

The risk factors for Alzheimer's disease or related disorders and their weight have been grouped together in an evaluation grid. These include factors associated with genes, such as APOE4, or those linked to lifestyle or conditions, such as hypertension, diabetes, alcohol consumption, social isolation, obesity, hearing loss, depression or head trauma.

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II. Risk communication

This second pillar - which is crucial in the relationship that is established with the patient - makes it possible to communicate the risk index in the most accurate and comprehensible way. Indeed, understanding the risk of developing a disease is more complex than understanding being actually affected by a disease. A series of recommendations based on the patient's personality and background make it possible to choose the best tools for presenting the situation to the patient in a comprehensible manner.

III. Risk reduction

Drug and non-drug interventions are proposed for risk reduction. These range from lifestyle improvements to cognitive training and the administration of anti-amyloid drugs, if these become available on the market. Interventions on the gut microbiota may also be considered in the future.

IV. Cognitive reinforcement

Different types of memory (subjective, objective, meta) can be reinforced or stimulated through paper-based exercises or computer games. Transcranial electrical or magnetic stimulation will also be an important tool to activate synapses in key brain regions and thus improve memory.

These four pillars detailed in the *Lancet Regional Health - Europe* article will enable second generation memory clinics to reach out to the segment of the population whose memory is still functioning well and who wish to preserve or improve it. This population does not find answers in the current clinics.

*[The worldwide costs of dementia 2015 and comparisons with 2010](#), Alzheimer's and Dementia, Elsevier, 2017

**[Coûts des démences en Suisse, Alzheimer Suisse, 2019](#)

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