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Brain health concerns us all

OPINIONS

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The prevalence of stroke, ischemic heart disease and dementia is increasing, but nevertheless the age-adjusted incidence of all three diseases is decreasing in Norway. We believe that there is much to be gained from disease prevention and public health plans.

Stroke, dementia and ischemic heart disease are generally described as the 'triple threat' to brain health. These diseases are the cause of the highest number of fatalities, the largest reduction in disability-adjusted life years, and have risk factors in common that can both be prevented and treated (1–3). Small improvements in prevention thus yield large public health benefits (2, 3).

Based on data from the Global Burden of Disease study in 1990 and 2019, we have performed analysis of the prevalence and incidence in Norway of stroke, ischemic heart disease and dementia, as well as 12 modifiable risk factors in Norway (1). From 1990 to 2019, there was a 35.0 % increase in the number of

new dementia cases, while there was a reduction in ischemic heart disease and stroke of 3.6 % and 12.9 %. During the same period, the age-adjusted incidence fell for all three diseases (Figure 1). The largest reduction was for stroke (35.3 %), followed by ischemic heart disease (30.0 %) and dementia (5.4 %). The smaller reduction in dementia cases compared to stroke and ischemic heart disease can probably be explained by the greater number of causes for dementia conditions compared to vascular diseases. Understanding the reasons behind the decreasing incidence and applying the insights gained may have a positive influence on future efforts related to brain health.

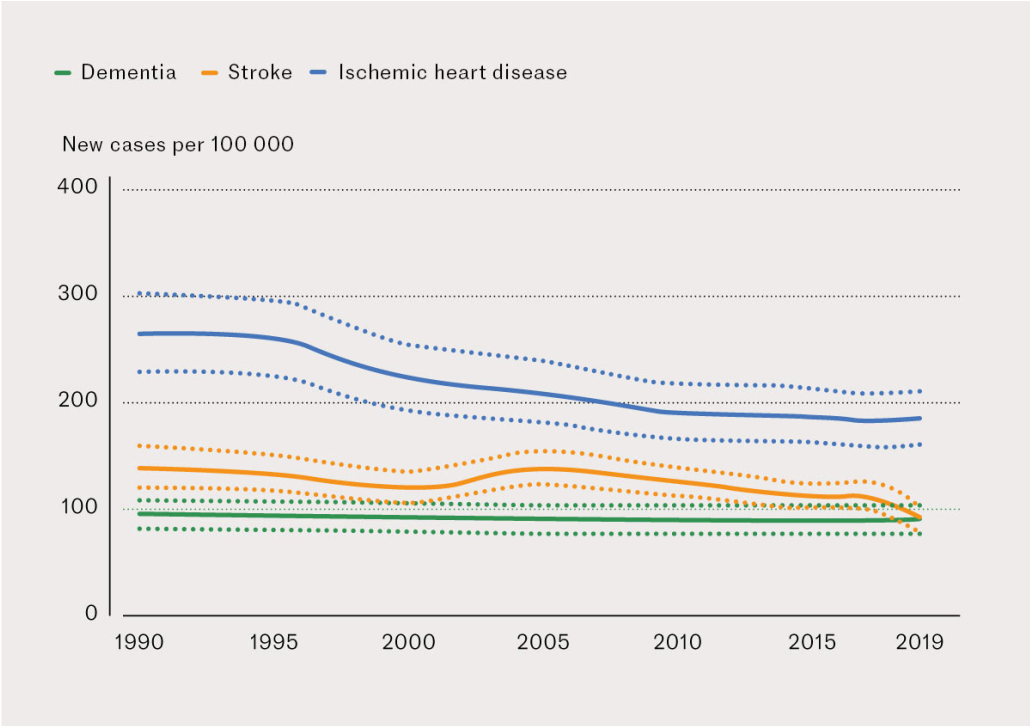

Figure 1 Age-adjusted incidence of ischemic heart disease, stroke and dementia in Norway.

Development of risk factors

In the same period (1990–2019) there was a reduction in attributable risk related to hypertension, LDL cholesterol, smoking and air pollution, with an increase for alcohol, high BMI and high fasting blood glucose.

The measures to control important modifiable risk factors such as hypertension, high LDL cholesterol, air pollution and tobacco use have so far been effective and have led to a considerable reduction in the risk of ischemic heart disease and/or stroke in Norway. The age-adjusted incidence of dementia has likewise been reduced, probably due to control of the same risk factors.

How can prevention be strengthened?

We believe that the prevention of dementia, heart disease and stroke can be reinforced by evaluating the measures for these three disease groups to a greater extent and collectively (4). The increased risk of ischemic heart disease and stroke that can be attributed to high BMI, high blood glucose and alcohol provides extra potential for the prevention of vascular events – and thereby reduced incidence of dementia.

> ***«We believe that the prevention of dementia, heart disease and stroke can be reinforced by evaluating the measures for these three disease groups to a greater extent and collectively»***

Norway has been in the forefront of brain health efforts and was the first country to devise a national brain health strategy. This has been referenced in the work of both the World Federation of Neurology (WFN) and the European Academy of Neurology (EAN), as well as in several European countries that have established a brain health strategy in recent years (5, 6). Now that Part 2 of Norway's brain health strategy is to be drawn up, the findings that we present in this article should form a part of the evidence base. Conditions that occur together should be prevented together.

No health without brain health

We recommend that knowledge and awareness of brain health in the population, and prevention of brain diseases be strengthened. The implementation of the new Nordic nutrition recommendations (7) may have a positive effect on high BMI, high fasting blood glucose and alcohol use. Additional measures around these risk factors in connection with the implementation of the new Nordic nutrition recommendations could be highly significant for the brain health of the population.

A coherent, coordinated public health approach to promote brain health and prevent brain diseases is needed. Activity and sleep, a balanced diet and social contact with others improve both mental and social functioning. Brain health concerns us all, and the measures need widespread involvement.

The current approach to brain health-promoting measures is too fragmented. A more coherent approach will mean better utilisation of resources and a better outcome from the measures. Such an approach should include efforts at an individual, societal and global level to promote cross-sectoral cooperation involving the health service, the education sector, research communities, nonprofit organisations and commercial interests. Cooperation should be guided by principles of the gender perspective, equality, human rights and the UN Sustainable Development Goals (8).

There is a need to coordinate the work across specialties in the field of brain health, and improve collaboration between neurologists, psychiatrists, specialists in geriatric medicine and other specialists in brain diseases as well as general practitioners, other healthcare personnel, patients, next of kin and carers. We recommend reinforcement of the interdisciplinary education and training of doctors, nurses and other healthcare personnel in the field of brain diseases and brain health.

Better understanding of the disease mechanisms is necessary to make real progress in the diagnosis and treatment of brain diseases. Research needs to be bolstered, from basic research on mechanisms in animal models to development of new tools to combat the diseases. Scientific and methodological progress, including artificial intelligence and precision brain medicine, will lead to better prediction, prevention and individualised treatment of brain diseases.

We are well on the way. The age-adjusted incidence of these major disease groups is currently decreasing in Norway. We are optimists and believe we have more to gain.

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