ESC European Society of Cardiology

European Heart Journal Open (2022) **2**, 1–2
https://doi.org/10.1093/ehjopen/oeac062

INVITED EDITORIAL
Epidemiology & Prevention

Prevention of cardiovascular disease: are we successful?

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Online publish-ahead-of-print 23 September 2022

Handling Editor: Karolina Szummer

This editorial refers to 'Achievements of primary prevention targets in individuals with high risk of cardiovascular disease: an 8-year follow-up of the Tromsø study', by A. N. Hagen *et al*. https://doi.org/10.1093/ehjopen/oeac061.

Although the age-standardized mortality rates from cardiovascular disease (CVD) have declined significantly in most high-income countries from the seventies of the previous century onwards, the decline of its prevalence and incidence over the more recent decades (1990–2017) remains limited[1]; in terms of numbers (premature CVD mortality, disability-adjusted life-years attributed to CVD), these diseases still are a major challenge and burden to the healthcare systems all over the world.

These most recent developments may be related to an incomplete implementation of guidelines related to CVD prevention, in particular to the prevention of atherosclerotic CVD (ASCVD). Furthermore, the rise in the prevalence of obesity and of Type 2 diabetes in many societies and the ageing of the populations may explain some of these unfortunate developments. This requires a comprehensive and coordinated approach including not only individualized primary and secondary prevention strategies but also a population strategy aiming at the primordial prevention of unhealthy lifestyles from the age of conception onwards through childhood and young adulthood.

In this issue of the European Heart Journal Open, results are presented from a cohort study in Tromsø, Norway, including a sample of the population aged 40–79 years, free of ASCVD but at high total cardiovascular (CV) risk and followed from 2007–08 to 2015–16 regarding changes and control of major CV risk factors. Overall, improvements were observed in non-smoking rates, in total- and LDL-cholesterol concentrations and control and in blood pressure levels and control. However, guideline-based treatment target achievement was relatively low for arterial hypertension and dyslipidaemia.[2]

As mentioned in the study, these results are not unique; in the centres participating in the EURIKA project[3] and in the primary care arm of the EUROASPIRE V survey,[4] treatment target achievements were also poor both regarding lifestyle changes and CV risk factor control. In these studies, large differences between participating centres were found, suggesting differences between countries in variables that determine lifestyle behaviour and that are mainly shaped and constrained by norms of societies and by the behaviours of peers. Promotion of physical exercise during leisure time will get little enthusiasm as long as watching TV or other media is regarded as the normal way to spend an evening and as long as attractive and accessible facilities are not available. Moving towards a healthier diet at the population level requires a comprehensive approach; the Norwegian National Action Plan for a Healthier Diet can be considered as an example in this respect. This emphasizes the need to complement high-risk strategies with population strategies in order to change certain lifestyles at the community level. This is now also well considered in the most recent 2021 ESC Guidelines on CVD prevention in clinical practice where a full chapter is devoted to policy interventions at the population level.[5]

But in daily practice, it seems that most attention goes into the control of dyslipidaemia and arterial hypertension using drug therapies. This high-risk approach is important but should always be integrated into a broader multifaceted, multidisciplinary, and interdisciplinary prevention strategy. The distributions of blood pressure and of lipid levels are dynamic at the population level and in western countries, they have moved towards lower values in the past decades. This was well documented by the NCD Risk Factor Collaborators; in a survey regarding changes in lipid levels over a long-term period, Norway was among the countries with the largest reduction in total cholesterol at around −0.4 mmol/L per decade mainly due to a decline in non-HDL cholesterol[6]; these findings were largely based on observations in the Tromsø surveys 2–6 before 2008; this decline was not less than the −0.4 mmol/L reduction that was observed in the following decade (2007/08–2015/16) among the participants at high CV risk reported in the publication in this issue of the European Heart Journal Open.[2]

There is a need for continuous surveillance at the population level regarding the use of tobacco products, the intake of salt, fruits, and vegetables and of particular food patterns as part of an integrated strategy to prevent non-communicable disease aiming at a tobacco-free generation, at the prevention of blood pressure raise with age, at the prevention of the development of overweight from childhood onwards, at a continuous balance between energy expenditure and energy intake; this should result in a population at low total CV risk from childhood onwards and in the maintenance of this low total CV risk status for as long as possible resulting in healthy ageing and in the prevention of ASCVD.

Hence, in conclusion, things are changing, some for the better and some for the worse. The potential of ASCVD prevention is

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incompletely utilized and needs a more comprehensive multifaceted approach with tobacco control, poor diet, and physical inactivity as priority policy targets, involving not only health professionals but the society as a whole at both national and international levels as presented in recommendations by various expert committees.[5,7,8]

Conflict of interest: None declared.

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