

## Healthy longevity in the time of COVID-19: a conceptual framework

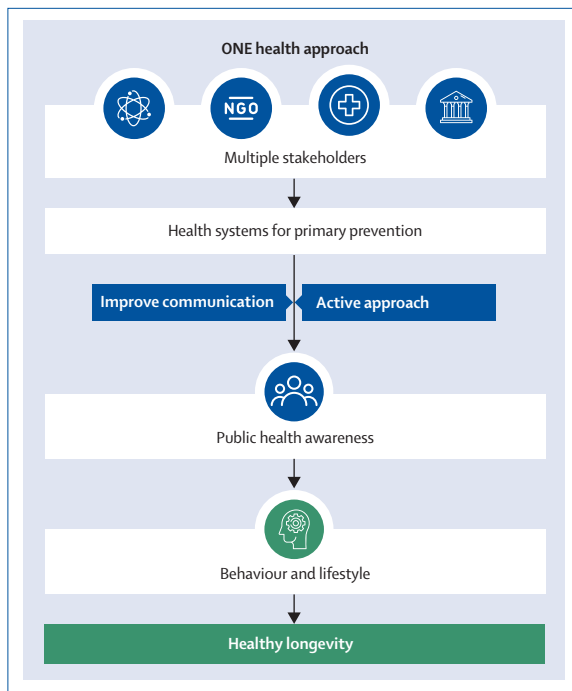


In the past 30 years, there has been a global increase in longevity. Life expectancy at birth has risen by 8.4 years, mostly due to socioeconomic developments and improvements in health-care provision and access.<sup>1</sup> The COVID-19 pandemic has had a considerable effect on health and survival, which risks reversing the progress made towards increasing longevity and achieving the Sustainable Development Goals (SDGs) for health, in particular goal 3—to “ensure healthy lives and promote wellbeing for all at all ages”. By January, 2021, more than 100 million cases of COVID-19 and more than 2 million COVID-19 deaths worldwide had been confirmed, mostly among people with comorbidities and those older than 65 years. Researchers have predicted that epidemiological changes caused by the pandemic will affect several global indicators such as years of life lost, life expectancy,<sup>2</sup> and global markets. Estimates from the Office of National Statistics in England and Wales done in November, 2020, indicate a decrease in life expectancy at birth of 0.9 years for women and 1.2 years for men compared with 2019.<sup>3</sup> However, these calculations were done earlier in the pandemic and updated estimates will be required as the full impact of the pandemic becomes apparent over time.

SARS-CoV-2 is a multisystemic virus that affects multiple organs, which in addition to acute complications and mortality, could also cause long-term sequelae compromising quality of life.<sup>4</sup> Long-awaited COVID-19 vaccines emerged at the end of 2020, but concurrently, so did new variants of the virus. The evolving situation has now raised questions about the equitable deployment of vaccines, their effectiveness against existing and future variants, risks of re-infection, and their ability to activate a protective immune response in the most vulnerable, older populations.<sup>5</sup> Therefore, a multidisciplinary and comprehensive approach is essential to palliate, restrict, and mitigate the deleterious effect of the pandemic and the health and ageing experience of the population.

The response to COVID-19 therefore requires a multidisciplinary preventive approach and has highlighted the need to strengthen the resilience of societies and their emergency preparedness.<sup>6</sup> The

pandemic has also raised concern regarding shifts towards unhealthy lifestyle behaviours,<sup>7</sup> with obesity being one of the key risk factors associated with COVID-19 complications and mortality. Despite tireless efforts of multiple stakeholders to promote healthier lifestyles in the past three decades, the realised effect is far from tangible. Compounded with COVID-19, the inability to halt the global rise in chronic diseases and the change in unhealthy behaviour is likely to translate into a further shift away from maintaining a so-called healthy ageing phenotype (ie, the condition of being alive, while having highly preserved functioning metabolic, hormonal, and neuro-endocrine control systems at the organ, tissue and molecular levels).<sup>8</sup> Achieving the desired lifestyle changes in the overall population is challenging, but especially among people in the later stages of their life course, with such difficulty further exacerbated by disabling physical or social environments that greatly impede healthy lifestyles in disadvantaged populations.<sup>9</sup> A conceptual framework for change towards healthy longevity, which is also alluded to in the WHO definition of healthy ageing and in recent reports,<sup>6</sup> is urgently needed and should be based on five key actions. First, directing health-care systems towards stronger primary disease prevention, which requires a shift in approach to health-care provision from a focus on disease management to prevention, effective coordination between multiple stakeholders, and sustainable investments. Second, supporting strategic research agendas that can further the understanding of what drives lifestyle behaviour change across the life course and how to effectively reduce disparities in access to an enabling built environment that is essential for adopting a healthy lifestyle. Third, improving communication with the public about healthy longevity and how to maintain it throughout the life course, communicated clearly and concisely with effective counteraction of misinformation and utilising multiple channels and languages. Fourth, enacting policies to transcend passive recommendations for health promotion through a more active approach that involves multiple stakeholders and binding terms for implementation



**Figure: Conceptual framework focusing on primary disease prevention for healthy longevity**

Multiple interdisciplinary stakeholders include research and academic institutions, NGOs, health-care system actors from the private and public sectors, and policy makers. NGO=non-governmental organisation.

and monitoring. Fifth, adopting a One Health approach that entails multidisciplinary collaborations to improve public health outcomes (figure).

The COVID-19 pandemic is now at its peak, at the beginning of a decade that has been dedicated for action towards achieving the SDGs and promoting healthy longevity. The WHO baseline report on healthy ageing could not have been published at a more convenient time.<sup>10</sup> An abundance of knowledge and tools exist that have not yet been exhausted and that can mitigate

disease risk factors and strengthen coping mechanisms when diseases do arise. Ensuring healthy longevity for all, irrespective of sex, race, religion, and geographical location, is a moral and professional responsibility that requires integrated efforts based on solidarity. This pandemic has exposed the shortcomings of public and global health systems. This is the time to change, anticipate, and unite.

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