

From Lifespan to Healthspan: The Role of Nutrition in Healthy Ageing

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ABSTRACT: Across the globe, there has been a marked increase in longevity, but significant inequalities remain. These are exacerbated by inadequate access to proper nutrition and healthcare services, and to reliable information to make the decisions related to nutrition and healthcare. Many in economically developing as well as developed societies are plagued with the double-burden of energy excess and under-nutrition. This has resulted in mental and physical deterioration, increased non-communicable disease rates, lost productivity, increased medical costs and reduced quality of life. While adequate nutrition is fundamental to good health at all stages of the life-course, the impact of diet on prolonging good quality of life during ageing remains unclear. For progress to continue, there is need for new and / or innovative approaches to promoting health as individuals age, as well as qualitative and quantitative biomarkers and other accepted tools that can measure improvements in physiological integrity throughout life. A framework for progress has been proposed by the World Health Organization in their Global Strategy and Action Plan on Ageing and Health. Here, we focused on the impact of nutrition within this framework, which takes a broad, person-centered emphasis on healthy ageing, stressing the need to better understand each individual's intrinsic capacity, their functional abilities at various life stages, and the impact of their mental, and physical health, as well as the environments they inhabit.

INTRODUCTION

The human lifespan has substantially extended since the 1900s, due largely to interventions that have reduced infant and childhood mortality, coupled with medical-surgical advances that have had a particular impact on older people. However, this lifespan expansion has not resulted in robust health for everyone during ageing and there has been a substantial increase in age-associated morbidity. The

research field of healthy ageing has developed to identify risk factors impacting on health and quality of life and to provide evidence of effective and acceptable interventions.

The concept of a well-balanced diet has long been advocated for a healthy life. However, more recently it has become apparent that nutritional needs vary greatly across and within age groups, and thus generic dietary recommendations may not be optimal for everyone in the population. This inter-individual variability in nutritional needs is likely to be exacerbated with increasing chronological age, due to the effects of environmental stressors, lifestyle choices and chronic disease. Adequate physical activity, optimal nutrition, restorative sleep, and the minimization of personal risk factors are all critical to a healthy lifespan. The WHO report on healthy ageing notes that within intrinsic capacity, an individual has countless choices that lead to good health (or lack thereof) both now and later in life.

A long-term view on healthy ageing requires respect for the highly diverse needs and expectations across the lifespan. In this paper, we explored diverse lifestyle and risk factors impacting healthy ageing, and the over-arching role of good nutrition in meeting the needs of heterogeneous older populations. While medical-surgical interventions and dietetic practices have always been patient-focused individual matters, more recent research has focused on societal dietary advice to improve health and wellbeing. Understanding individual extrinsic and intrinsic influencers (including individual behaviors and individual-specific data) may provide a basis for personalized nutritional interventions to enhance human healthspan.

CONCLUSION

As discussed in this paper, many countries are witnessing a marked increase in longevity and with this increased lifespan the concomitant desire for maximizing health-span. Unfortunately, greater life expectancy is often accompanied by more years of ill-health due to both physical and mental deterioration with its associated escalating costs for health and social care. Although good nutrition is fundamental for good health, the specific dietary interventions and/or nutrients that can enhance individual healthspan remain poorly understood. As discussed, there is growing evidence that (1) access to better nutrition, (2) improved immunity and response to disease/inflammation, (3) functioning senses (i.e., sight, taste, smell) and mobility, and (4) the ability to maintain homeostasis or regain homeostasis in response to stress/stressors, may enhance how individuals age. This emphasizes the need for innovative studies on dietary interventions to improve healthy ageing, especially utilizing validated, and widely accepted, quantitative physiological biomarkers that measure key functions and are responsive to lifestyle-based interventions.