



Short Communication

Health and quality of life in an aging population – Food and beyond[☆]

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ABSTRACT

In Europe the percentage of citizens aged 65 and over is increasing at an unprecedented rate, and is expected to account for over 30% of the population by 2050. Coupled with an increase in life expectancy, this massive demographic change calls for a major effort to ensure quality of life in our older population. A thorough understanding of the elderly as food consumers, their nutritional needs, their food perception and preferences is increasingly needed.

The role of food in healthy aging was a prominent theme at the 6th European Conference on Sensory and Consumer Research, which had quality of life across the life span as a focal point. This short paper is based on a workshop held at the EuroSense meeting, focusing on research from sensory and consumer scientists. The workshop featured contributions focusing on food-related perception, needs and behavior of the elderly, and aimed at demonstrating the relevance of sensory and consumer scientists in promoting food-related well-being in an aging population. The workshop contributions are here reviewed and summarized three main themes: nutritional needs, food perception and aging, and behavioral drivers of food consumption.

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1. Introduction

Population aging—the process by which older individuals become a proportionally larger share of the total population—is one of the most important demographic events of our time. Initially experienced by the more developed countries, the process has recently become apparent in much of the developing world as well (Figs. 1 and 2). In the near future, virtually all countries will face population aging, although at varying levels and time frames. In the EU, the share of people over 60 is presently around 15%, but that figure is expected to reach 30% by 2050.

There is clearly a need for societal strategies to increase the number of healthy years as we age, and adequate dietary intake

is one of the key factors in maintaining good health and in increasing the quality of life of the elderly. Population aging, coupled with a steady increase in life longevity also means an increasing demand for food and beverages targeted at older consumers, currently the fastest growing consumer segment worldwide (Goldman, McKay, Mojet, & Kremer, 2014). Therefore understanding of the elderly as food consumers, their nutritional needs, food perception and preferences are key areas for future research.

Accordingly, sensory research focusing on the elderly was featured prominently at the 6th European Conference on Sensory and Consumer Research (EuroSense) in Copenhagen. On September 8, 2014 a thematic workshop was held as part of the conference, bringing together researchers from several European countries. The objective of workshop was to highlight the contributions of sensory and consumer scientists to increasing food satisfaction among the elderly, ensure their nutritional needs are met, and generally help the elderly maintain their well-being as long as possible.

The workshop itself comprised seven oral presentations followed by a plenum discussion. Three important themes emerged

[☆] This paper is an executive summary of an eponymous workshop held September 8, 2014 at the 6th European Conference on Sensory and Consumer Research, Copenhagen, Denmark.

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from the contributions and the discussion throughout the workshop:

1. *Nutritional needs of the elderly.* Body weight and muscle mass tends to decrease in old people and this is associated with frailty and increased morbidity. There is a major need for health promoting foods ensuring adequate nutritional intake, and identification of feeding strategies that may be applicable at societal level.
2. *Changes in chemosensory function associated with the aging process.* Although it is well established that aging causes losses in sensory acuity, the degree to which different senses are affected, and its impact on liking and intake are far from understood. Understanding how aging changes food perception is an important question as it feeds into the increasing demand for food beverages targeting older consumers.
3. *Increasing awareness of specific food-related behavioral drivers in the elderly.* Physical barriers (e.g., tiredness) and socio-psychological factors (e.g., loneliness) related to aging affect the way people prepare and experience meals. Understanding behavioral drivers of food consumption among elderly is therefore necessary to develop not only good products, but also public health policies and innovative services that effectively promote food intake and healthy aging.

2. Nutrition, physical function and well-being

The nutritional needs of the elderly and their relations to several age-related morbidities were one of the most important topics in the workshop. Viktoria Olsson's presentation reviewed the nutritional status of elderly in the EU, as well as existing dietary recommendations. Her presentation highlighted that people defined as elderly (i.e., 65 years or over) are a heterogeneous group with large variations in functional abilities, physical and mental health. Although recent studies show that the share of healthy and active elderly in later cohorts has increased compared to the past (Falk et al., 2014), in very old ages many lose the ability to live

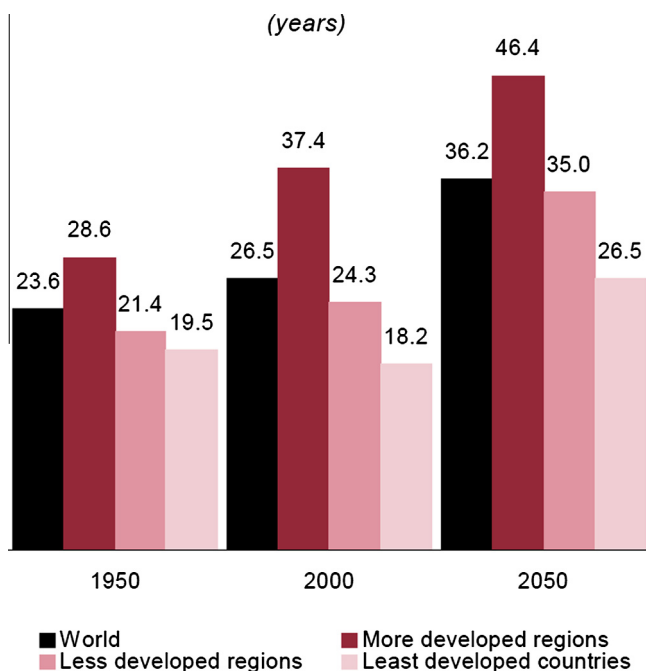


Fig. 1. Median age of the world population (world aggregate and breakdown by region). Source: United Nations, 2013.

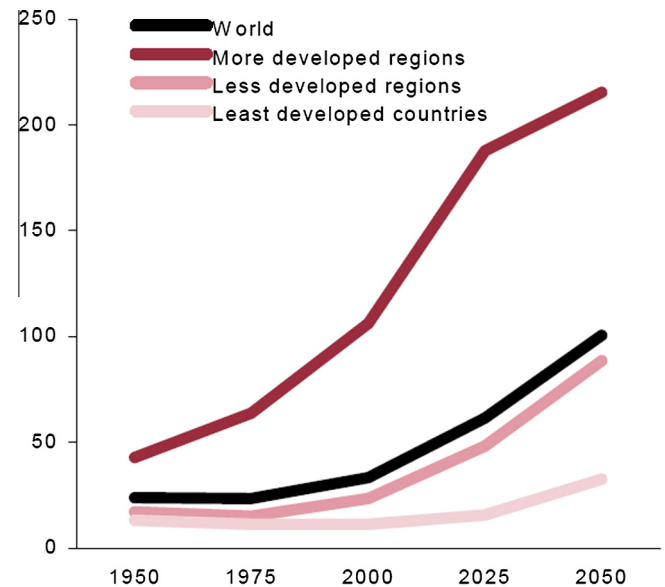


Fig. 2. Number of citizens aged 65+ per hundred children under 15 (world aggregate and breakdown by region). Source: United Nations, 2013.

independently because of impaired mobility, physical or mental health problems.

The healthy and active elderly often eat well but a recent study show that, overall, the diet quality among the EU elderly was both low on average and heterogeneous across individuals (Irz et al., 2014). In vulnerable groups malnutrition is an impending risk factor (Bauer et al., 2013), and eating difficulties adds on the threat (Maitre, Van Wymelbeke, Amand, & Vigneau, 2014).

In healthy elderly, requirements of energy decrease while the need for protein increases, owing to age-related changes in protein metabolism and declined anabolic response to ingested proteins (Bauer et al., 2013). The current recommended daily intake (RDI) is 1.0–1.2 g protein/kg body weight in healthy elderly, and 1.2–1.5 g/kg in individuals suffering from acute or chronic morbidities (Bauer et al., 2013). For vitamin D the RDI is 20 µg/d for individuals ≥75 years (Lamberg-Allardt, Brustad, Meyer, & Steingrimsdottir, 2013). However, for many other nutrients, there is no evidence for specific recommendations for elderly. Elderly with limited appetite often do not meet these dietary requirements (particularly with regards to protein intake) and thus have problems in maintaining their body weight. Malnourished elderly rate their well-being as lower in comparison with other groups (Ödlund Olin, Koochek, Ljungqvist, & Cederholm, 2005), and indeed dysfunction in mobility resulting from inadequate food intake is a strong predictor for need of help and low quality of life (Stenzelius, Westergren, Thorneman, & Hallberg, 2005). More attention should be placed on energy and nutrient density with regards to meals targeted at the elderly, as portion sizes are small and should be served more frequently.

The presentation by Davide Giacalone continued with the theme of nutritional strategies targeted at elderly, based on the ongoing Danish project “CALM – Counteracting Age-related loss of skeletal muscle mass through exercise and diet”. CALM is a broad interdisciplinary project from the University of Copenhagen which focuses on the role of protein intake and physical activity for countering *sarcopenia* – the age-related loss of skeletal muscle mass. Sarcopenia, which starts around age 50 in healthy individuals, reduces muscle strength and function, and often leads to a decrease in a person quality of life and independence. In the coming decades, the number of elderly citizens over age 60 in Denmark will increase by more than 50%, making sarcopenia a very

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