

Abstract

The Association of Oral Processing and Salivary Flow Rate on Food Intake and Appetite in Older Adults (Aged ≥ 65 Years) [†]

Dimitra Zannidi ^{1,*}, Lisa Methven ¹, Gerry McKenna ², Jayne Woodside ², Ciarán Forde ³, Martin Schimmel ⁴ and Miriam E. Clegg ^{1,5}

¹ Department of Food and Nutritional Sciences, University of Reading, Reading RG6 6AP, UK; l.methven@reading.ac.uk (L.M.); mclegg@ucc.ie (M.E.C.)

² Centre for Public Health, Institute for Global Food Security, School of Medicine, Dentistry and Biomedical Sciences, Queen's University Belfast, Belfast BT12 6BJ, UK; g.mckenna@qub.ac.uk (G.M.); j.woodside@qub.ac.uk (J.W.)

³ Division of Human Nutrition and Health, Wageningen University & Research, NL-6708 WE Wageningen, The Netherlands; ciaran.forde@wur.nl

⁴ Department for Reconstructive Dentistry and Gerodontology, University of Bern, CH-3010 Bern, Switzerland; martin.schimmel@unibe.ch

⁵ School of Food and Nutritional Sciences, University College Cork, T12 K8AF Cork, Ireland

* Correspondence: d.zannidi@pgr.reading.ac.uk

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Abstract: Loss of appetite in older adults is common and can lead to reduced food intake, increasing the risk of malnutrition, frailty, and mortality. In addition, older adults often experience age-related deterioration in oral processing ability, saliva flow and chewing efficiency, which can further reduce food intake. This observational study investigated individual variations in these factors and their relative influence on food intake and appetite in healthy adults aged ≥ 65 years. After overnight fast, stimulated and unstimulated saliva samples were collected. A breakfast meal was provided, which was video recorded to enable a subsequent behavioural annotation of bites, chews and swallows using the software “ELAN”. Fasting and postprandial blood glucose were measured. Chewing efficiency was assessed using a two-colour chewing gum mixing ability test and the opto-electronic software ViewGum[®] (version 4.1.2.1). Saliva uptake was assessed using standard test food, and questionnaire data were collected to assess oral health, lifestyle and sensory preferences. Appetite was assessed subjectively using visual analogue scales for three hours after breakfast and objectively through an ad libitum lunch. Preliminary results from 44 participants (median age 72.5 years, BMI 25.6 kg/m², 22 males) are presented (target sample size of the study is 86 participants). Males were observed to be faster eaters, with larger average bite size and higher saliva uptake values. Faster eaters had a larger ad libitum meal intake and consumed their meal with a larger average bite size, fewer chews per gram, and shorter total oral exposure time. Individuals with a faster eating rate consumed more food and these differences were associated with differences in subjective satiety ratings, postprandial blood glucose and stimulated saliva flow. No differences in chewing performance were observed. This study is the first to explore the association between oral processing and salivary factors with food intake and appetite in older adults. The preliminary results show that variability between individuals can influence food intake, glucose metabolism and post-meal satiety. This study will provide a foundation for better understanding the food needs of older adults and assist in designing appropriate food products for them.



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