

## Different food choice motives predict the consumption of a high quantity and a high variety of vegetables in European older adults

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For a range of health benefits, consumption of a high quantity and a high variety of vegetables is recommended<sup>(1)</sup>. While many studies have investigated quantity consumed<sup>(2,3)</sup>, fewer studies have investigated variety, and in some population groups, dietary variety can be low. Older adults can consume restricted diets, but while restrictions tend to result from changes in abilities and circumstances<sup>(4)</sup>, affective factors are likely to remain more stable and could provide avenues for intervention. This study investigated the affective factors associated with a high quantity and variety of vegetables consumed by older adults from three European countries.

Data were collected as part of the VeggiEAT project, an EU funded project aiming to understand and increase vegetable intakes in Denmark (DK), France (FR), Italy (IT) and the UK. Self-reported vegetable intake, liking for vegetables, attitudes towards intake (from the Food Choice Questionnaire, the Dutch Eating Behavior Questionnaire and the Food Neophobia Scale) and some demographic variables were requested by questionnaire. Quantity, variety and quantity and variety of vegetable consumption combined were subsequently investigated.

Complete data sets were gained from 497 older adults (65 years or over) (FR: N = 187, IT: N = 152, UK: N = 158). Quantity of vegetables consumed was low (mean 2.1–2.7 portions/day), a mean of 6.1–6.7 different vegetables were consumed on a regular basis, and scores for quantity and variety combined were low (mean 0.19–0.36, from a possible 0–1). Using regression, higher quantities of vegetable consumption were associated with a higher age, affluence score, and liking for vegetables and a lower importance in consumption for familiarity (smallest  $\beta = 0.11$ ,  $p = 0.03$ ). Greater variety of vegetables consumed was associated with a higher liking for vegetables and importance of health benefits, and a lower importance for familiarity (smallest  $\beta = -0.11$ ,  $p < 0.01$ ). Higher quantities and varieties combined were associated with a higher age, liking for vegetables, and importance of health benefits, and a lower importance for familiarity (smallest  $\beta = 0.14$ ,  $p = 0.02$ ). Country-specific effects were also found (smallest  $\beta = 0.20$ ,  $p < 0.01$ ).

These findings demonstrate a role for a higher liking and a lower concern for eating familiar foods in increased vegetable consumption (quantity, variety and quantity and variety combined), and demonstrate a particular role for a greater concern for health benefits in the consumption of a greater variety of vegetables (variety and quantity and variety combined). These findings suggest that interventions to improve vegetable consumption in this age group should focus on improving liking, increasing willingness to consume unfamiliar foods and dishes, and increasing knowledge of the health benefits of vegetables.

1. World Health Organisation (2005) Fruit and Vegetables for Health Report of a Joint FAO/WHO Workshop, 1–3 September 2004, Kobe, Japan. Geneva: WHO.
2. Glasson C, Chapman K, James E (2011) Fruit and vegetables should be targeted separately in health promotion programmes. *Public Health Nutrition* **14**, 694–701.
3. Kamphuis CBM, Giskes K, de Bruijn GJ *et al.* (2006) Environmental determinants of fruit and vegetable determinants among adults: a systematic review. *Brit J Nutr* **96**, 620–35.
4. Nicklett EJ, Kadell AR Fruit and vegetable consumption among older adults a scoping review. *Maturitas* 2–13, 75, 305–312.