



The acceptance of protein enriched drinks by hyposmic and normosmic, independently living older persons

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Background

Food products that specifically target an elderly population are not only required to taste good but also to be nutritious, healthy and ideally to deliver a functional benefit. For example, an increased protein consumption in the elderly population is thought to be beneficial in promoting health and independence (Wolfe, Miller, & Miller, 2008) as it may counteract loss of muscle mass. However, protein fortification of foods can alter the sensorial characteristics which may lead to the so called "taste challenge" (i.e. reduced palatability). Interestingly, Mattes (2012) has recently argued that an olfactory loss in the elderly may also diminish their neophobic responses and their detection of undesirable flavour notes. This could be potentially beneficial as frail elderly may have a need to consume heavily fortified foods.

Objective

To explore the influence of various types of flavourings on initial acceptance of protein enrichment in yoghurt based drinks, and whether or not these influences are different for normosmic and hyposmic older persons.

Methods

The current study explored the liking/acceptance of protein enriched (Fonterra NZMP WPC515, 6% vs 8%) yoghurt drinks in a combination of three different flavours (A, B & C). 59 hyposmic older persons (age $69.1y \pm 6.9$) and 66 normosmic older persons (age $66.3y \pm 5.5$) assessed liking on a 100mm visual analogue scale. The older persons belonged to a panel of healthy, independently living individuals over 55 years of age, called SenTo (Senioren van de Toekomst: Seniors of the future). The SenTo panel consists currently of 850 members (42.0% male and 58.0% female). Roughly half of the SenTo members have been extensively tested for olfactory function by means of Sniffin' Sticks, which measure the detection threshold, discrimination and identification of odours (Burghart, Wedel, Germany). The scores of these tests (possible range for each 0–16) are presented as a composite TDI score – i.e. the sum of results obtained for threshold (T), discrimination (D) and identification (I) measures. A TDI score of 30.3 or lower is thought to indicate hyposmia (impaired olfactory functioning) (Hummel, Kobal, Gudziol, & Mackay-Sim, 2007).

Results

Normosmic and hyposmic older persons differed significantly in their acceptance of the protein enrichment. When the yoghurt drinks were flavoured with flavour A, the increase in protein content significantly decreased the liking of the drink for the hyposmic older persons, whereas this was not the case for the normosmic older persons. Interestingly, the opposite observation was made for both flavour B and flavour C.

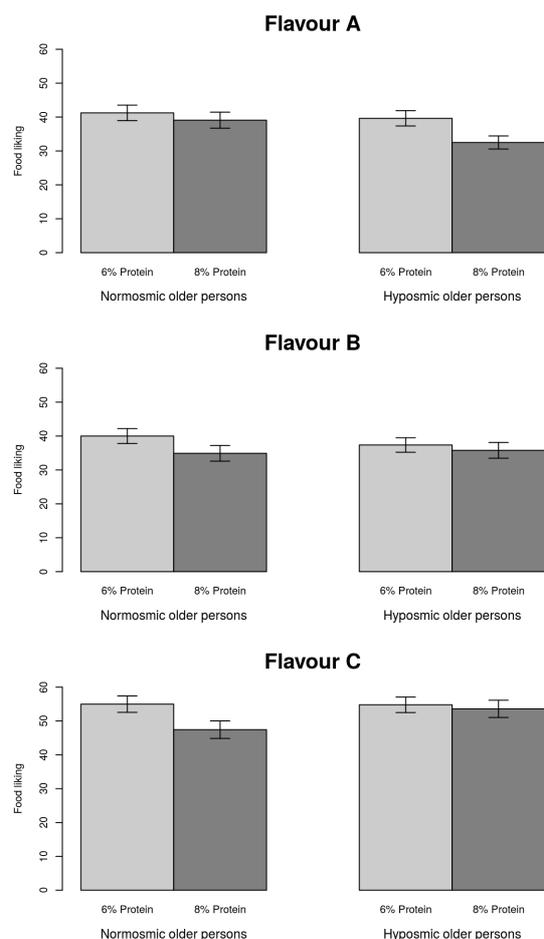


Figure 1. Mean liking of protein enriched drinks in combination with one of three different types of flavourings (A, B, C) for the older normosmics (n = 66) and the older hyposmics (n=59).

Conclusions

It is concluded that hyposmic and normosmic older persons may differ in their initial acceptance of protein enrichment in yoghurt drinks and that their acceptance is modulated by the type of flavour used. Consequently, in order to ensure acceptance of protein enrichment in foods, hyposmic and normosmic older persons may require the use of different types of flavourings rather than different concentrations of the same flavour.

Acknowledgements

This research was supported by Fonterra Europe Cooperatie U.A. and the Dutch Ministry of Economic Affairs.