How the smell of food affects how much you eat

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Bite size depends on the familiarly and texture of food. Smaller bite sizes are taken for foods which need more chewing and smaller bite sizes are often linked to a sensation of feeling fuller sooner. New research published in BioMed Central's open access journal *Flavour*, launched today, shows that strong aromas lead to smaller bite sizes and suggests that aroma may be used as a means to control portion size.

The aroma experience of food is linked to its constituents and texture, but also to bite size. Smaller bites sizes are linked towards a lower flavour release which may explain why we take smaller bites of unfamiliar or disliked foods. In order to separate the effect of aroma on bite size from other food-related sensations researchers from the Netherlands developed a system where a custard-like dessert was eaten while different scents were simultaneously presented directly to the participants nose.

The results showed that the stronger the smell the smaller the bite. Dr Rene A de Wijk, who led the study, explained, "Our human test subjects were able to control how much dessert was fed to them by pushing a button. Bite size was associated with the aroma presented for that bite and also for subsequent bites (especially for the second to last bite). Perhaps, in keeping with the idea that smaller bites are associated with lower flavour sensations from the food and that, there is an unconscious feedback loop using bite size to regulate the amount of flavour experienced."

This study suggests that manipulating the odour of food could result in a 5-10% decrease in intake per bite. Combining aroma control with portion control could fool the body into thinking it was full with a smaller amount of food and aid weight loss.

BioMed Central's open access journal *Flavour*, launched today is a peer-reviewed, open access, online journal that publishes interdisciplinary articles on flavour, its generation, perception, and influence on behaviour and nutrition. *Flavour* aims to understand the psychophysical, psychological and chemical aspects of flavour, which include not only taste and aroma, but also chemesthesis, texture, and all the senses.

More information: Food aroma affects bite size, Rene A de Wijk, Ilse A Polet, Wilbert Boek, Saskia Conraad and Johannes HF Bult, *Flavour* (in press)

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