



HabEat

Determining factors and critical periods in food habit formation and breaking in early childhood: a multidisciplinary approach

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**Medium-scale Collaborative Project
SEVENTH FRAMEWORK PROGRAMME**

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The impact of early exposure to a variety of fruit and vegetables on their further acceptance

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Concerned workpackage leader: ULeeds

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Dissemination level: CO (confidential)

As some of the data contained in this report has not yet been submitted for publication, we changed the dissemination level from Public to confidential until the publications will be accepted. The summary is Public. The present version will remain confidential after publication. However, a public version will be prepared containing the abstracts and the links to the related papers.

Summary

Recent research suggests that repeatedly offering infants a variety of single vegetables early in the weaning process, increases intake and liking of these vegetables. Furthermore, the effect may extend to novel foods and result in a longer-term increase in vegetable consumption. The TASTE study aims to investigate the effectiveness of an intervention providing guidance to parents in early repeated exposure to a variety of vegetables on infants' short-term and longer-term intake and liking of vegetables and fruits.

A community sample of mothers of 4-6 month old infants in the UK (n=98), Portugal (n=101) and Greece (n=92)¹ were randomised to either an intervention group, who were given guidance on introducing a variety of vegetables as first weaning foods, or a control group who did not receive such guidance. The intervention was delivered shortly before mothers planned to start complementary feeding. The infants' liking and consumption (g) of an unfamiliar vegetable followed by an unfamiliar fruit was assessed at 'taste tests' 1 month and 6 months post-intervention (in a randomly selected subgroup of 50% of the infants). Additional questionnaire measures were collected at 1, 6 and 9 month follow-ups².

Results show the TASTE study was successful in increasing intake and liking of an unfamiliar vegetable in the short term in the UK but not in Portugal. The findings from Greece indicated a positive trend towards an increased intake (and possibly liking) of the unfamiliar vegetable at the first taste test in the intervention group, but the findings were non-significant. No effect of the intervention was found for either intake or liking of a novel vegetable at the second taste test in any of the three countries and vegetable intake was reduced compared to the first taste test.

In Greece the TASTE intervention successfully increased the variety of vegetables eaten by infants in the early stage of complementary feeding and at the two later follow-ups but this finding was not replicated in the UK or Portugal. In the Portuguese sample, this finding may be explained by their typical weaning practices in which vegetables are frequently the first foods introduced. Another potential interpretation of this finding is the relatively high maternal vegetable consumption reported by both UK and Portuguese participants and the high socioeconomic status (SES) of the UK sample as indicated by maternal educational level. These high levels of vegetable intake and variety in the control group are likely to have minimised group differences and diluted the effect of the TASTE intervention. On the other hand, the fact that vegetables are less often given as first foods in the UK,

¹ Deviation: The original Protocol stated that a total of 240 participants would be recruited; 120 from the UK and 60 each from Greece and Portugal. The delays in obtaining NHS ethical approval in the UK (detailed elsewhere in this document) resulted in less time for recruitment and ultimately fewer participants in this country. However, both Greece and Portugal succeeded in over-reaching their recruitment targets and therefore the overall sample size for the study (283) remains larger than originally proposed.

² Deviation: In the original protocol taste test 2 was intended to take place at the final follow-up, 12 months post-intervention. However, because of the unavoidable delays experienced in the UK, this was moved forwards to the 6 month follow-up (originally intended as a telephone interview). The final follow-up was moved to 9 months post-intervention and completed by telephone interview.

particularly as single flavours may have enhanced the effect of the TASTE intervention in the short term. However, the wide variety of vegetables tried by all the UK infants at the 2nd and 3rd follow-ups appears to have diminished longer-term effects of the intervention.

The TASTE intervention was well received by parents. Infants in the Intervention groups showed increased vegetable consumption and liking in the short term, but only in countries where vegetables are not already amongst the common first foods offered to infants. Beneficial effects of the intervention were not maintained at the 6 month follow-up, although results from the Greek sample suggest that there may be a positive effect of the intervention on vegetable variety and general vegetable acceptance. It is possible that the outcome of the TASTE intervention would be different in lower SES groups and future research should aim to target this neglected population. If successful, this type of low intensity intervention could be economically rolled out on a larger scale. Given that interactions with health professionals are relatively frequent at this stage of infant development, the intervention would be reasonably straightforward to administer on a public health level.