The root of the problem: increasing root vegetable intake in preschool children by repeated exposure and flavour–flavour learning

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Abstract:

Children's vegetable consumption falls below current recommendations, highlighting the need to identify strategies that can successfully promote intake. The current study aimed to investigate the effectiveness of flavour–flavour learning as one such strategy for increasing vegetable intake in preschool children. Children (N = 29) aged 15 to 56 months were recruited through participating nurseries. Each received a minimum of six and maximum eight exposures to a root vegetable puree with added apple puree (flavour–flavour learning) alternating with six to eight exposures to another with nothing added (repeated exposure). A third puree acted as a control. Pre- and post-intervention intake measures of the three purees with nothing added were taken to assess change in intake. Follow-up measures took place 1 month (n = 28) and 6 months (n = 10) post-intervention. Intake increased significantly from pre- to post-intervention for all purees (~36 g), with no effect of condition. Magnitude of change was smaller in the control condition. Analysis of follow-up data showed that intake remained significantly higher than baseline 1 month (p < 0.001) and 6 months (p < 0.001) post-intervention for all conditions. Children under 24 months ate consistently more across the intervention than the older children (≥24 m) with no differences found in response to condition. This study confirms previous observations that repeated exposure increases intake of a novel vegetable in young children. Results also suggest that mere exposure (to the food, the experimenters, the procedure) can generalise to other, similar vegetables but the addition of a familiar flavour confers no added advantage above mere exposure.

Keywords:

- Vegetable intake;
- Preschool children;
- Repeated exposure;
- Learning