Long-term effects of a sensory education in Austrian school children aged 11 - 14

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Background

A sensory based education in children seems to be a simple but effective tool as far as nutrition literacy is concerned. Although there are a number of studies, which reported a variety of positive effects (decrease in food neophobia[1], increase of food acceptance[2,3], increase of knowledge in nutrition and food[4] or sensory perception[5,6]) there is still a lack of data regarding the lasting effects of a sensory training without further stimulation.

Method

- Evaluation of gustatory (DIN 10961 and ISO 3972) and olfactory (Sniffin´ Sticks, Burghart company) perception (baseline, follow up 1°, 2°° & 3°°°)
  ° within 1 month, °°6 months and °°°12 months after the training
- Sensory training over a period of 6 months (education group)
- 277 Austrian school children (11 to 14 y)

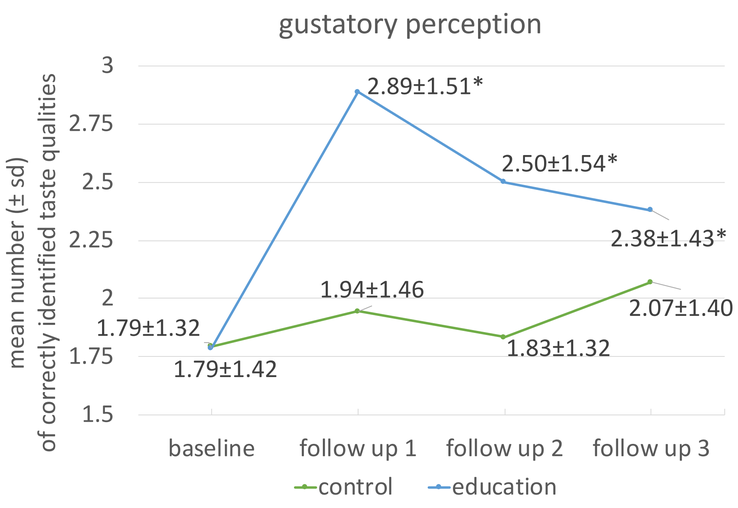
As the first part of the study[7] showed a short-term effect of a sensory training (significant differences between evaluated groups) it was interesting to continue the investigation in order to observe long term effects 6 and 12 months after the sensory education (Fig. 1).

Results

The data revealed differences between the investigated groups 6 months, as well as 12 months after the sensory training (Fig.1). A statistically significant increase ($p < 0.05$) could be found in the taste recognition for the education group (on average, as well as in individual taste qualities sour, bitter, salty and umami), but not for the control group (Fig. 2). In the recognition of odor qualities a slight enhance was visible in both investigated groups. A significant difference ($p < 0.05$) appeared for specific odorants, such as lemon and orange, in education as well as control group (Fig. 3).

Conclusion

The obtained results demonstrate that the impact of a sensory education is still persistent over a longer period of time (6 and 12 months after the training) without any further sensory stimuli. Consequently, the findings underline the effectiveness of a training on the sensory skills in school aged children. This may lead to further positive effects as far as nutrition and food choice are concerned and can contribute to a more conscious nutritional behaviour.



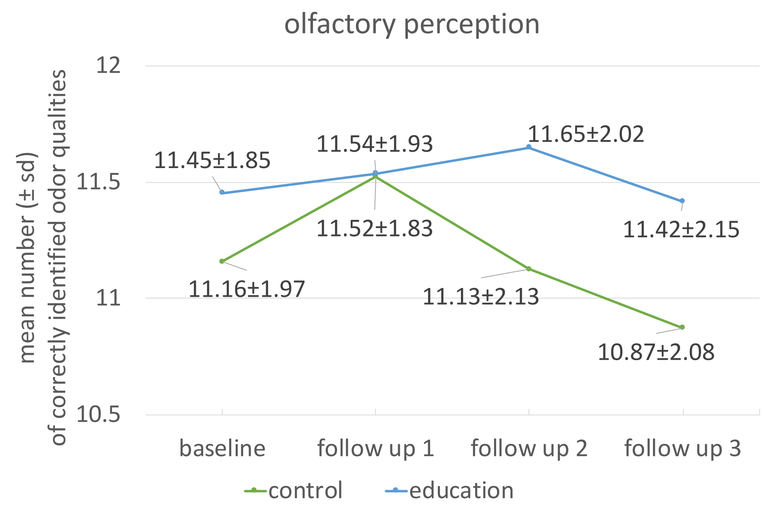


Figure 1: Trends in the overall recognition of taste and odor qualities during the entire evaluation period (baseline, follow up1, follow up2, follow up3) in control and education group (* significant change to baseline, $p < 0.05$)

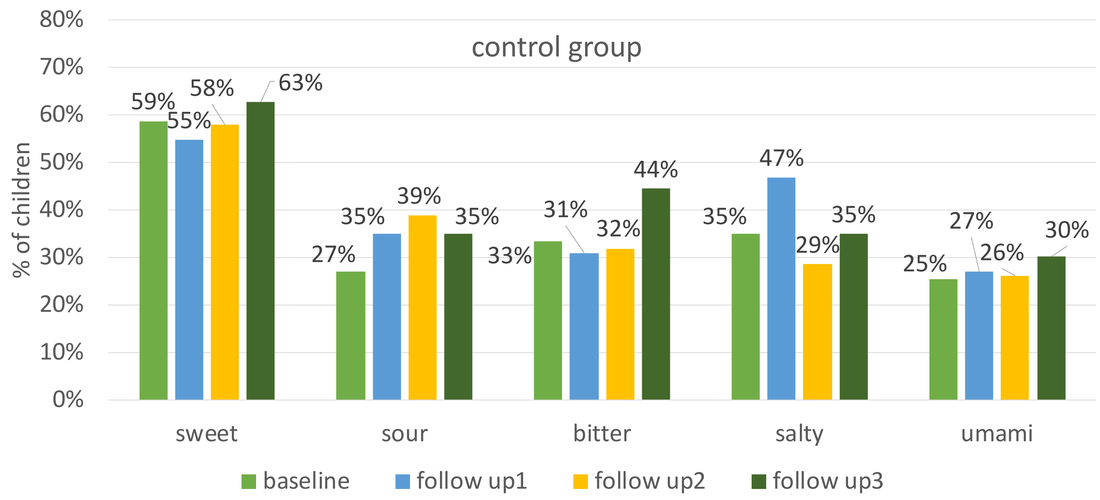
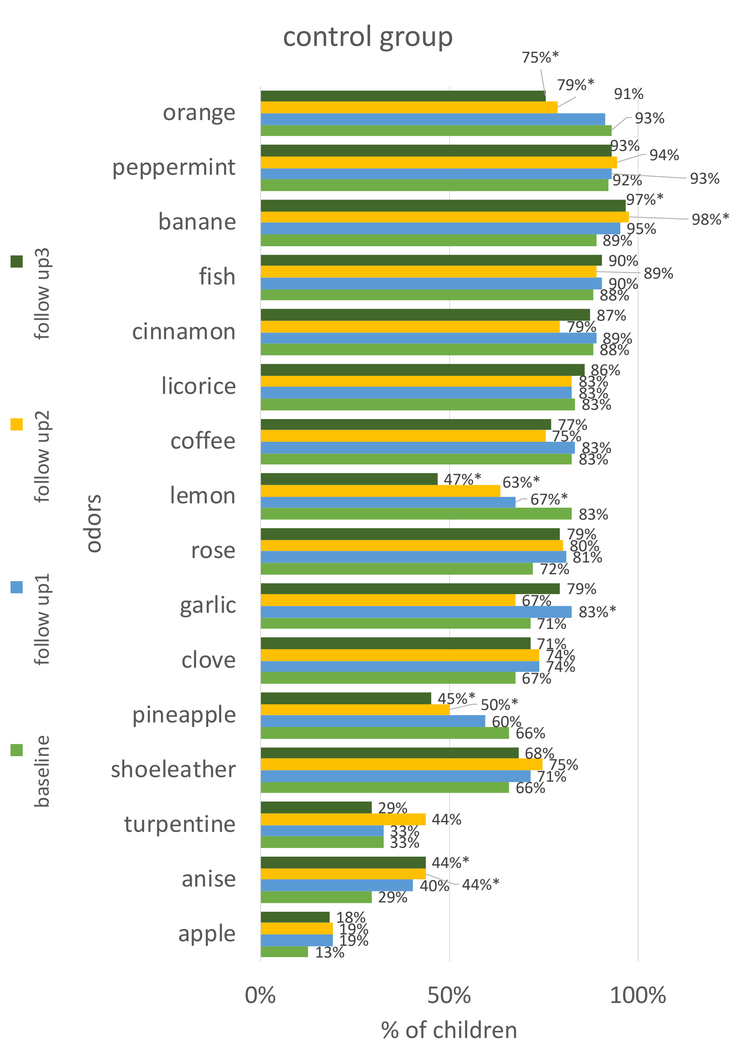


Figure 2: Percentage of correctly identified taste qualities by children per session (baseline, follow up1, follow up2, follow up3) in control and education group (* significant change to baseline, $p < 0.05$)



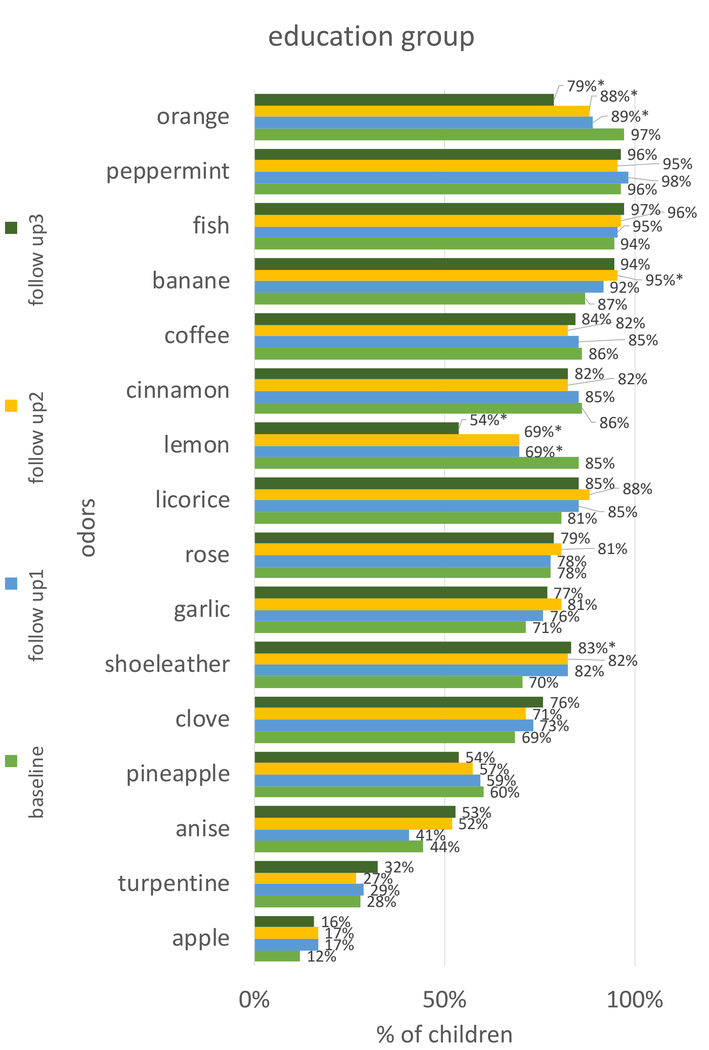


Figure 3: Percentage of correctly identified odor qualities by children per session (baseline, follow up1, follow up2, follow up3) in control and education group
(* significant change to baseline, $p < 0.05$)

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