Ann Nutr Metab 2015; 67(suppl 1)
12th European Nutrition Conference 2015

149/1319. Could a smoothie, rich in nutrients and bioactive substances, improve school performance?

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**Introduction:** Fruits and vegetables contain vitamins, minerals and other bioactive substances, which are important for intellectual performance. In a previous study it was shown that approximately two third of the pupils were hungry the last lesson before lunch. The average fruit and vegetable intake at lunch was much lower than the recommendations.

**Objectives:** The purpose of this pilot study was to investigate effect on attention and school performance of a vegetable smoothie, rich in berries, fruits and vegetables, served at the mid-morning brake.

**Method / Design:** In total 250 Swedish children aged 10-12 years participated. The study was designed as a cross-over trial with two study periods of ten schooldays. The children were randomly divided into two groups and were administered either an active smoothie (smoothie 1; group A) or a fruit-based placebo with the same energy content (smoothie 2; group B). Both smoothies were designed to provide 5% of the daily energy. After a three week wash-out period, group A was administered smoothie 2 and group B, smoothie 1. Statistical tests were performed using SPSS package, version 22.0, using Independent-Samples T test. Analysis included processing speed (PTO), concentration performance (CP) and percentages of error (Ep) as assessed by the D2-test

**Results:** Preliminary analyses indicate that PTO and CP increased during the intervention period, whilst Ep decreased, for both groups. The effect was stronger in the group drinking the active smoothie, than in the group drinking the placebo. The effect might partly be caused by the addition of water and energy

**Conclusions:** Attention, and thereby also school performance, may be improved by mid-morning consumption of a smoothie containing water, energy and preferably nutrients and other bioactive substances.

**Keywords:** (maximum 5): School performance, fruit and berries