**Differentiation of the plasma metabolite profile detected with \(^1\text{H}-\text{NMR spectroscopy of obese and normal-weight children and adolescents****

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**Introduction**

Childhood obesity is a major health problem worldwide.\(^1\) Obese children are at high risk to develop co-morbidities such as cardiovascular dysfunction, type 2 diabetes, pulmonary, hepatic and renal complications.\(^2\) To improve current treatment strategies for childhood obesity, a proper understanding of obesity-related pathophysiological mechanisms is required. Metabolomics is increasingly used as a tool for the study of obesity, since the plasma metabolite profile is reflective of metabolic processes.\(^3\)

**Aim**

To investigate and compare the metabolite profile of obese and normal-weight children detected with \(^1\text{H}-\text{NMR spectroscopy.**

**Methods**

- Fasting plasma
- Centrifugation
- \(^1\text{H}-\text{NMR spectroscopy}
- 110 variables

**Results**

After correction for multiple testing, 19 spectral regions were significantly different in obese compared with normal-weight children (p value < 4.545 x 10^{-4}).

**Conclusion**

Our findings show a clear differentiation between the plasma metabolite profile of obese and normal-weight children. However, additional research is needed in a larger sample population in order to translate current findings into a clinically meaningful outcome.

**References**


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