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## Changes in Dietary Patterns among German Adolescents between 2003–2006 and 2014–2017: Results of KiGGS

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### Abstract

Empirically derived dietary patterns are useful to describe food consumption habits within population groups. The aim of the study was to analyse dietary patterns as well as changes of these patterns within the last decade among German adolescents.

Dietary patterns were analyzed for 12 to 17 years old participants of two waves of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS Baseline (2003–2006) N = 5.197 and KiGGS Wave 2 (2014–2017) N = 5.199). KiGGS is part of the nationwide health monitoring in Germany. Food consumption was assessed by a semi-quantitative food frequency questionnaire. Based on this information, dietary patterns were derived using principal component analysis in a former analysis for KiGGS Baseline<sup>(1)</sup> and in this new analysis for KiGGS Wave 2. In KiGGS Baseline three major dietary patterns were identified ('western', 'traditional', and 'healthy') among boys and two among girls ('western/traditional', and 'healthy').

In KiGGS wave 2 the 'traditional' pattern could not be identified anymore among boys and a new pattern, the 'sandwich' pattern was identified among girls and boys. The 'sandwich' pattern was positively correlated with the intake of bread, processed meat, cheese, butter/margarine, jam, cake/cookies, and among boys also confectionary. Compared to the former 'traditional' dietary pattern among boys, the new 'sandwich' pattern shows similarities (bread, processed meat and butter/margarine) but the former warm meal components are missing (meat and potatoes). There were only slight differences in the food groups associated with the 'western', 'western/traditional' or 'healthy' pattern between both surveys.

Within the past decade dietary patterns changed among German adolescents. In 2014–2017 a new 'sandwich' pattern was identified among boys and girls, and the 'traditional' dietary pattern was not found any more among boys. This change could be associated with more frequent food consumption out of home among adolescents. Within the past decade, the school system in many German federal states was restructured from half-day schools towards whole-day schools and the utilization of meal supply within schools almost doubled among adolescents. These changes may have influenced the food consumption habits among adolescents.

### Conflict of Interest

There is no conflict of interest.

### References

1. Richter *et al.* (2017) Associations between dietary patterns and biomarkers of nutrient status and cardiovascular risk factors among adolescents in Germany: results of the German Health Interview and Examination Survey for Children and Adolescents in Germany (KiGGS). *BMC Nutrition* 3, 4.