

Certain types of media consumption increase urine creatinine and blood uric acid concentrations in children independent of BMI

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Introduction: Increased BMI is discussed to lead to elevated levels of urine creatinine and blood uric acid concentrations. Here we hypothesize that certain types of media consumption by children contribute to this increase independent of BMI.

Methods: We analyzed the public data file of the German Health Interview and Examination Survey for Children and Adolescents (KiGGS). The present analyses were restricted to 6036 adolescents aged 11-17 years. The time of media consumption was assessed by a standardized questionnaire. The influence of media consumption on urine creatinine and blood uric acid was computed in a multifactorial analysis of variance adjusting for the influence of BMI, age, sex and blood pressure.

Results: Urine creatinine levels and blood uric acid were significant positively correlated with hours of computer/internet consumption ($p=0.0005$; $p=0.009$), moderately with hours of television ($p=0.04$; $p=0.04$), and not associated with listening to music or use of cellular phones. Blood uric acid concentrations above the upper-reference levels were found in 11% of the children with normal weight and 27% of the children with overweight when computer/internet consumption was about 30min/d. For >3h/d computer/internet consumption these proportions were 26% and 52%, respectively.

Conclusion: For the first time these results suggest that certain types of media consumption impair kidney function additional to and independent of a high BMI. Excessive computer/internet consumption might act as a chronic stressor compromising kidney function. Future research is needed to elucidate the effect of computer/internet consumption on kidney function.