



Universität  
Basel

## Research Project

### ExAMIN YOUTH

#### Project funded by own resources

**Project title** ExAMIN YOUTH

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#### **Organisation / Research unit**

Faculty of Medicine

Departement Sport, Bewegung und Gesundheit

Departement Sport, Bewegung und Gesundheit / Präventive Sportmedizin (Hanssen)

**Project start** 01.01.2016

**Probable end** 01.09.2018

**Status** Completed

**Background:** Cardiovascular disease (CVD) remains to be one of the most frequent causes of death worldwide. Cardiovascular (CV) risk factors such as hypertension and obesity often manifest in childhood. The study examines the associations of blood pressure, body mass index and physical activity with cardiopulmonary, metabolic, and psychosocial health of children in a systems physiology approach.

**Methods/Design:** This cross-sectional study will be performed in a cohort of 6 to 8 year old school children ( $n = 1000$ ). As a measure of vascular health, retinal microvascular diameters and large artery pulse wave velocity will be examined. Anthropometric parameters, such as weight, height, body mass index, and blood pressure will be assessed according to standardized protocols for children. Physical fitness and activity will be measured by a 20 m shuttle run, a 20 m sprint and a proxy-reported questionnaire on lifestyle behavior. Spirometry, assessment of heart rate variability and skin advanced glycation end products as well as a flanker test will be performed to determine systemic end organ alterations. **Discussion:** The study offers a unique integrative primary prevention concept that aims to set the grounds for a healthy and active lifestyle approach during childhood. It will help optimize CV risk stratification to identify children at risk of disease progression later in life. The study will demonstrate the importance of specific CV screening programs in children to reduce the growing burden of CV disease in adulthood. Prospective follow-up studies will have to prove the efficacy of primary prevention programs in children to achieve healthier aging as a long-term goal.

#### **Financed by**

Other funds

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