

## Publication

### Adiposity, fitness and metabolic risk in children : a cross-sectional and longitudinal study

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**Author(s)** Puder, J. J.; Schindler, C.; Zahner, L.; Kriemler, S.

**Author(s) at UniBasel** [Schindler, Christian](#) ; [Kriemler, Susi](#) ; [Puder, Jardenä](#) ; [Zahner, Lukas](#) ;

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**Abstract** Objective. To better understand the early development of cardiovascular disease, we examined the association of adiposity measures and cardiorespiratory fitness (CRF) with baseline values and changes in low-grade chronic inflammation and insulin resistance (IR) in school children. Methods. Eighty-three 1(st) and 5(th) grade children from a randomly selected control group of a physical activity intervention study (KISS) were prospectively studied during one academic year. Outcome variables included highly sensitive C-reactive protein (hs-CRP) and homeostasis assessment of IR (HOMA-IR). Adiposity measures included body mass index (BMI), waist circumference and the sum of skinfold thickness at four sites. CRF was assessed by the 20 m shuttle run test. All models were adjusted for age group, sex and pubertal group and included children who had a complete valid dataset for all variables. Results. Baseline metabolic markers correlated positively with measures of adiposity and inversely with CRF (all p

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