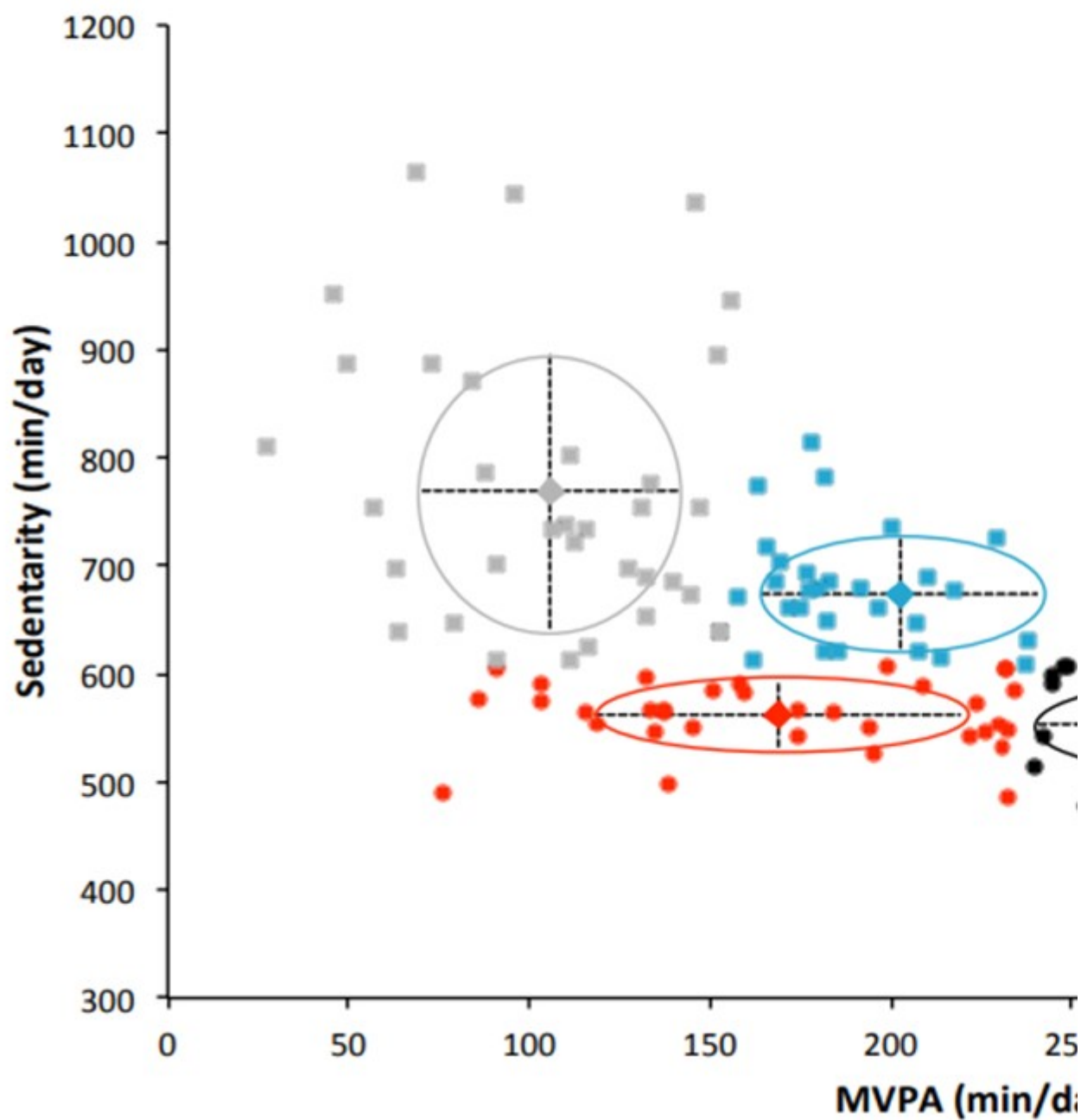


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Nouvelle publication Internationale de Valerie Julian,

Bruno Pereira (CHU Clermont-Ferrand) et David Thivel
(Programme A): "Sedentary time has a stronger impact on
metabolic health than moderate to vigorous physical
activity in adolescents with obesity: a cross-sectional
analysis of the Beta-JUDO study" Pediatric Obesity, 2022

BACKGROUND

Relationships between movement-related behaviours and metabolic health remain underexplored in adolescents with obesity.

OBJECTIVES

To compare profiles of sedentary time (more sedentary, SED+ vs. less sedentary, SED), moderate to vigorous physical activity (MVPA) time (more active, MVPA+ vs. less active, MVPA) and combinations of behaviours (SED/MVPA+, SED/MVPA, SED+/MVPA+, SED+/MVPA) in regard to metabolic health.

METHODS

One hundred and thirty-four subjects (mean age 13.4 ± 2.2 yrs, mean body mass index [BMI] 98.9 ± 0.7 percentile, 48.5% females) underwent 24h/7day accelerometry, anthropometric, body composition, blood pressure (BP), lipid profile and insulin resistance (IR) assessments.

RESULTS

Metabolic health was better in SED [lower fat mass (FM) percentage ($p < 0.05$), blood pressure (BP) ($p < 0.05$), homeostasis model assessment of insulin resistance (HOMA-IR) ($p < 0.001$) and metabolic syndrome risk score (MetScore) ($p < 0.001$), higher high-density lipoprotein-cholesterol (HDL-c) ($p = 0.001$)] vs. SED+ group and in MVPA+ [lower triglyceridemia (TG), ($p < 0.05$), HOMA-IR ($p < 0.01$) and MetScore ($p < 0.001$), higher HDL-c ($p < 0.01$)] vs. MVPA group after adjustment with age, gender, maturation and BMI. SED /MVPA+ group had the best metabolic health. While sedentary ($p < 0.001$) but also MVPA times ($p < 0.001$) were lower in SED/MVPA vs. SED+/MVPA+, SED/MVPA had lower FM percentage ($p < 0.05$), HOMA-IR ($p < 0.01$) and MetScore ($p < 0.05$) and higher HDL-c ($p < 0.05$), independently of BMI. Sedentary time was positively correlated with HOMA-IR and MetScore and negatively correlated with HDL-c after adjustment with MVPA ($p < 0.05$). MVPA was negatively correlated with HOMA-IR, BP and MetScore and positively correlated with HDL-c after adjustment with sedentary time ($p < 0.05$).

CONCLUSION

Lower sedentary time is associated with a better metabolic health independently of MVPA and might be a first step in the management of pediatric obesity when increasing MVPA is not possible.

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