Universität Basel

Research Project

Hypertension and retinal microvascular dysfunction: A cross-sectional and randomized controlled exercise trial

Third-party funded project

Project title Hypertension and retinal microvascular dysfunction: A cross-sectional and randomized controlled exercise trial
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Hypertension is a worldwide health care burden that affects the structure and function of the macro- and microcirculation. Non-invasive vascular biomarkers are essential to timely diagnose end-organ damage to improve CV risk stratification and medical decision making. The “Hypertension and retinal microvascular dysfunction” (*HyperVasc*) trial will investigate macro- and microvascular impairments in hypertensive patients and healthy controls to investigate hypertension-induced end-organ damage by using gold-standard methods as well as newly developed and unique retinal microvascular biomarkers. Additionally, this trial will investigate the reversible effects of an eight weeks supervised and walking based high-intensity exercise intervention on blood pressure as well as macro- and microvascular health, compared to a control group with standard physical activity recommendations. Secondary outcomes will be cardiorespiratory fitness, physical activity, microalbuminuria, hypertensive retinopathy, and classical cardiovascular risk marker. The results of the *HyperVasc* trial will improve the understanding of hypertension-induced vascular impairments and will push the development of non-invasive vascular biomarker to screen end-organ damage in general CV risk stratification.

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