



3.7 Exercise Systolic Blood Pressure Response and Incident Depressive Symptoms – The Maastricht Study

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ABSTRACT

Background: Exaggerated exercise systolic blood pressure (SBP) is a modifiable risk factor associated with vascular dysfunction. Vascular dysfunction may contribute to the development of late-life depression, but the association between exercise SBP and incident depressive symptoms is unknown. Therefore, we investigated whether an exaggerated exercise SBP is associated with a higher risk of depressive symptoms over time.

Methods: Longitudinal data from the population-based Maastricht Study, with only individuals free of depressive symptoms at baseline included ($n = 2,121$; 51.3% men; age 59.5 ± 8.5 years). Exercise SBP was measured at baseline with a submaximal exercise cycle test. We calculated a composite score of exercise SBP based on 4 standardized exercise SBP measures: SBP at moderate workload, SBP at peak exercise, SBP change per minute during exercise and SBP 4 minutes after exercise. Clinically relevant depressive symptoms were determined annually at follow-up and defined as a Patient Health Questionnaire score of $> = 10$.

Results: After a mean follow-up of 3.9 years, 175 participants (8.3%) had incident clinically relevant depressive symptoms. A 1 standard deviation higher exercise SBP composite score was associated with a higher incidence of clinically relevant depressive symptoms (hazard ratio: 1.27 [95% confidence interval: 1.04–1.54]). Results were adjusted for age, sex, education level, glucose metabolism status, lifestyle, cardiovascular risk factors, resting SBP and cardiorespiratory fitness.

Conclusion: A higher exercise SBP response is associated with a higher incidence of clinically relevant depressive symptoms.

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