



Impacts of Reducing Sitting Time or Increasing Sit-to-Stand Transitions on Blood Pressure and Glucose Regulation in Postmenopausal Women: Three-Arm Randomized Controlled Trial

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JOURNAL: CIRCULATION 2025;152(8):492-504



Sedentary behaviour is a significant risk factor for cardiovascular disease, particularly in postmenopausal women, who often spend more time sitting and experience an increased cardiovascular risk after menopause. Strategies such as reducing overall sitting time and increasing sit to stand transitions have emerged as practical approaches to help minimise sedentary behaviour and support cardiovascular health.

This 3-month randomised control trial of 407 overweight and obese postmenopausal women aimed to determine the behavioural and physiological impacts of two different approaches to changing sedentary behaviour; increasing sit to stand transitions and reducing total sitting time.

The results showed that increasing sit to stand transitions improved systolic blood pressure compared to control.

However, increasing sit to stand transitions was not associated with improvements to diastolic blood pressure or blood sugar control.

Sitting less was not associated with improvements to blood pressure or blood sugar control.

It was concluded that increasing sit to stand transitions improved blood pressure in overweight and obese postmenopausal women. ■

The effects of 6 wk of resistance training on the gut microbiome and cardiometabolic health in young adults with overweight and obesity.

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JOURNAL: JOURNAL OF APPLIED PHYSIOLOGY (BETHESDA, MD. : 1985) 2024;136(2):349-361

The gut microbiome is increasingly recognised as being involved in the development of obesity and cardiometabolic disease. Greater microbial diversity has been observed following bariatric surgery-induced weight loss, while disrupted gut microbial patterns are associated with obesity, insulin resistance, and poor metabolic health. Although exercise appears to positively influence the gut microbiome in both lean and obese individuals, research remains limited.

This was a 6-week randomised control trial of 32 obese individuals assigned to either a resistance training programme three times per week or control, which consisted of exercise recommendations but no training programme. The study aimed to examine the impact of resistance training on gut microbial diversity and how this was associated with cardiometabolic outcomes.

The results showed that Roseburia, a short chain fatty acid producer, increased in abundance. Changes in microbial metabolic pathways associated with carbohydrate metabolism and cell motility pathways were also observed. Resistance training was also associated with improvements to diastolic blood pressure and insulin sensitivity. However, no differences in microbial diversity were apparent. It was concluded that resistance training increased Roseburia and induced changes in microbial pathways, which may impact cardiometabolic health. ■



Optimal exercise modalities and doses for improving pro-atherogenic lipid profiles in patients with metabolic syndrome: a systematic review with pairwise, network, and dose-response meta-analyses

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JOURNAL: BMC MEDICINE 2025;23(1):691

A hallmark feature of metabolic syndrome (MetS) is dyslipidaemia, which has been associated with the development of atherosclerosis through elevated low density lipoprotein cholesterol, triglycerides, and total cholesterol. Exercise has previously been shown to alter lipid profiles, however its effects on pro-atherogenic lipid profiles is less well understood.

This was a systematic review and network meta-analysis of 49 randomised control trials involving 4144 participants to evaluate the effects of multiple exercises on atherogenic lipid profiles. High-intensity interval training, aerobic exercise, resistance training, combined aerobic and resistance training and mind-body exercise were all evaluated.

The results showed that mind-body exercise was the most effective at improving atherogenic lipid profiles. Combined aerobic and resistance training reported clinically meaningful reductions in non-high density lipoprotein cholesterol, triglycerides, and total cholesterol. Separately aerobic and resistance training improved low-density lipoprotein cholesterol and triglycerides. It was concluded that structured exercise may improve pro-atherogenic lipid profiles in individuals with MetS. ■