

Interval workouts for older women may improve health of blood vessels

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Credit: University of Leeds

Short bouts of interval exercise may be most beneficial for older women at increased risk of heart-related illness, according to new University of Leeds research.

The study of 15 women, published in the *BMJ Open Sport and Exercise Medicine* journal, looked into the effects of both continuous and interval [exercise](#) on important [angiogenic cells](#) in the body which support [blood vessel growth](#).

It focused on post-menopausal women because the risk of cardiovascular disease increases as oestrogen levels drop, which lead to the body's natural repair mechanisms becoming less sensitive.

The drop in hormones, coupled with rising age, also reduces the number of angiogenic cells, so finding ways to encourage the efficient operation of those remaining is key to giving women a chance of good heart and blood vessel health.

The research found while neither continuous or interval exercise increased the number of angiogenic cells in the blood, interval exercise encouraged greater function of those cells already in circulation, and stimulated their ability to form

colonies which can improve blood vessel growth and repair.

The findings showed that one session of interval exercise was more effective than 30 minutes of moderate intensity continuous exercise – one of the key Government-recommended guidelines - when it comes to increasing angiogenic cell activity in post-menopausal women.

Exercise has long been recommended for [postmenopausal women](#), but this is the first study to link certain types of exercise to the activities of angiogenic cells. It measured the response of the women in a trial to produce the current findings. The research group's report said further studies should be an imperative and more research was required to understand exactly how the process operates.

Dr Karen Birch from the University of Leeds' Multidisciplinary Cardiovascular Research Centre, who led the research project, said: "We believe the body's greater exertion at the higher work rates during interval exercise stimulates the cells in circulation, so when they gather they become a powerful force in the body's ability to decrease the risk of vascular disease.

"This is the first study to link interval type exercise and angiogenic cell activity, but our findings suggest health professionals could advise postmenopausal women to try exercise in short bursts of activity followed by periods of rest, if they need to concentrate on improving their heart and blood vessels.

"We would like to see greater use of individualised exercise prescriptions for women needing to improve this area of their health."

Dr Birch added: "We have to be realistic that not all older women are likely to launch into a high-intensity interval exercise regime. Our advice to

women is try to adapt existing ways of exercising to become more intense, but still at a level they feel comfortable with. Remember intervals can be short bursts of fast walking or [short bursts](#) of a jog. In other words a bit harder than a person usually undertakes. "

Previous research has shown that low levels of angiogenic cells and a reduction in their function has been associated with an increased risk of cardiovascular disease. A drop in their ability to form colonies has been associated with increased risk of developing coronary artery disease.

The research team, including academics from Thompson Rivers University, Canada and the University of Huddersfield, it was funded by the British Heart Foundation.

The full paper Interval exercise increases angiogenic cell function in postmenopausal [women](#) is published in *BMJ Open Sport and Exercise Medicine* journal.

More information: Emma Harris et al. Interval exercise increases angiogenic cell function in postmenopausal women, *BMJ Open Sport & Exercise Medicine* (2017). [DOI: 10.1136/bmjsem-2017-000248](#)

Provided by University of Leeds

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