Leucine and perindopril to improve physical performance in people over 70 years with sarcopenia: the LACE factorial RCT

Miles D Witham,[1,2*] Simon Adamson,[3] Alison Avenell,[4] Margaret M Band,[3] Tufail Bashir,[5] Peter T Donnan,[3] Jacob George,[2] Adrian Hapca,[3] Cheryl Hume,[3] Paul Kemp,[5] Emma McKenzie,[3] Kristina Pilvinyte,[3] Christos Rossios,[5] Karen Smith,[3] Allan D Struthers[2] and Deepa Sumukadas[6]

[1]AGE Research Group, NIHR Newcastle Biomedical Research Centre, Newcastle University and Newcastle upon Tyne Hospitals Trust, Newcastle upon Tyne, UK
[2]Molecular and Clinical Medicine, University of Dundee, Dundee, UK
[3]Tayside Clinical Trials Unit, University of Dundee, Dundee, UK
[4]Health Services Research Unit, University of Aberdeen, Aberdeen, UK
[5]Cardiovascular and Respiratory Interface Section, National Heart and Lung Institute, Imperial College London, London, UK
[6]Department of Medicine for the Elderly, NHS Tayside, Dundee, UK

*Corresponding author Miles.Witham@newcastle.ac.uk

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Plain English summary

LACE factorial RCT

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Plain English summary

Sarcopenia (the loss of muscle size and strength that is common as we age) causes falls, results in difficulty undertaking daily activities and can lead to longer hospital stays, a need for more care, and earlier death than for people without sarcopenia. Resistance exercise (weight training) can help, but no other medicines or nutritional supplements are proven to help prevent or treat sarcopenia. Earlier research suggested that leucine (a building block for proteins, found in the diet) or perindopril (a medicine used to treat high blood pressure and heart problems) might be able to improve muscle function. The aim of this trial was to test whether or not leucine and perindopril can improve physical performance and increase muscle size in older people with sarcopenia.

We recruited 145 people with sarcopenia aged 70 years or over from 14 hospitals across the UK. Participants were allocated at random to receive perindopril or a matching dummy tablet once per day, plus leucine powder or a matching dummy powder to be taken three times per day with meals. Both treatments were given for 1 year.

Neither leucine nor perindopril improved physical performance, muscle size, quality of life or activities of daily living. More patients taking perindopril had side effects than those taking the dummy tablet, but there was no difference in side effects between those taking leucine and those taking the dummy powder. The number of falls was not affected by perindopril or leucine. Although sarcopenia is common, it was difficult to find participants with sarcopenia, as the condition is not often recorded in hospitals or general practice. We created a more efficient way to find people with sarcopenia and screen them for entry into future clinical trials.

Neither perindopril nor leucine was effective in improving physical performance or muscle size in older people with sarcopenia and they are unlikely to be useful as treatments for this condition.

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