

Remote delivery of a resistance exercise and protein intervention to improve muscle parameters in 40–65-year-olds: a feasibility study. The REMEND trial

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Sarcopenia is the reduction of muscle mass and strength associated with ageing⁽¹⁾. Resistance exercise alone and in combination with protein is thought to lead to increased muscle protein synthesis and may help combat sarcopenia⁽²⁾. Resistance exercise is traditionally undertaken in a gym setting, using fixed-machines and free weights, however, this environment can be unappealing to middle-older age adults. Access to gyms was also prohibited during COVID-19 UK lockdowns leading us to explore alternative approaches to delivering nutrition and exercise intervention trials. The aim of this study was to evaluate the feasibility of remote delivery of a home-based resistance exercise and protein intervention. This was a six week, 3-arm parallel intervention trial. Participants aged between 40–65 years were recruited via a social media advertising campaign and randomised to one of 3 treatment arms: i) resistance exercise, ii) resistance exercise and 15 g of protein/day (taken alongside lunch) or iii) resistance exercise and 30 g of protein/day (15 g taken alongside breakfast and 15 g taken alongside lunch.) The home-based resistance exercise intervention was conducted using resistance bands and consisted of 50-minute exercise sessions delivered live via videoconferencing. Participants were asked to participate in two exercise sessions per week. Protein was consumed as a gel supplement (Pro-source Plus) supplied by Nutrinovo (www.nutrinovo.com). Participants were asked to record their engagement and experience in a trial logbook and took part in semi-structured interviews at the end of the intervention period. In-person assessments of muscle strength and function, physical activity and diet were made at baseline and end of the intervention. Thirty-two individuals responded to the recruitment campaign within a three-week timeframe and a final total of eleven volunteers were eligible to participate and gave informed consent (all female, age range 40–61). No participants dropped out of the trial; however, one participant engaged in only 3 out of the 12 exercise classes and the same participant consumed only 14% of the protein supplement supplied. The remaining 10 participants had good compliance with both the exercise and protein intervention, and overall, there was 87% adherence to exercise sessions (2 or more classes a week) and adherence of 68% and 88% to the protein supplement in the 15 g and 30 g protein intervention arms respectively.

Acceptability and adherence were in line with the study requirements for most participants. These findings are encouraging and support the feasibility of a remote exercise and protein intervention trial. Qualitative analysis of the semi-structured interviews will provide further information to inform the design of a larger intervention trial.

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References

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