

**Exercise and the Prevention of Frailty – Evidence from a
Community-Based Medical Exercise Intervention**

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Dear Editor,

We were interested to read the paper by 'Moloney et al on Frailty, COVID-19 Disease Severity and Outcome Among Hospitalised Older Adults', in which frail patients were more likely to be admitted despite having mild Covid. We wish to describe some of our work in this area.

Frailty is a common syndrome of the elderly and is a predictor of mortality, falls, worsening disability and hospitalisation.¹ To date, there is no available pharmacotherapy that can be used to treat or prevent it. One treatment which has consistently proven to be effective in treating frailty is exercise.² We have developed a community-based medical exercise intervention that has positive effects on the physical fitness of older adults living with Non-Communicable Disease (NCD) and prevents the progression of frailty symptoms.

A pre-post quasi experimental pilot study carried out in the University of Limerick examined the effects of a community-based medical exercise intervention called 'ULMedX' on the physical health of individuals with established cardiovascular disease over 12 weeks. 'ULMedX' offered twice weekly supervised exercise classes to the participants and encouraged them to exercise outside of this with the aim of achieving the national physical activity guidelines. The exercise classes were multi-component in nature, each lasting 60 minutes, and consisted of a warmup, strength, and aerobic exercises and a cool down. The participants were 28 (18 male, 10 female) community-dwelling elderly adults with a mean age of 72 (65-82 range). Baseline and 3-month assessments of the 6-minute walk test (6MWT; meters), Sit to stand test (STS; number), Single leg balance test (SLBT; seconds) and Handgrip dynamometer test (HGDT) were conducted.

The participants between the ages of 65-75 years walked 73.4 meters ($p=0.002$) more in the 6MWT at the 12 week follow up, compared to baseline. Furthermore, participants over the age of 75 years improved on average 34.6 meters ($p=0.038$) over the same time period. Single leg balance improved by 3.7 seconds ($p=0.018$) on the right leg for participants over the age of 75 years. All other measures remained stable over the 12 weeks.

The findings of this study suggest that exercise interventions like 'ULMedX' can improve 6MWT test scores, which is an indicator of aerobic capacity, in older adults living with NCDs. This finding alone is important as higher 6MWT scores have a strong negative correlation with frailty scores and may indicate a reduced risk of mortality.³ The improvements in the over 75-year olds' 6MWT scores are particularly important as frailty is an age progressive syndrome characterised by declines in physiological reserve and function.² The lack of an observed reduction in scores on any of the outcome measures over the 12 weeks is therefore a positive finding.

This study demonstrates initial evidence of the preventability of the onset of frailty with the use of a community-based medical exercise intervention. This adds to the growing support for the use of Exercise as Medicine to treat and prevent chronic illnesses including frailty, thus improving this population's response to acute illness.

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