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# Adherence and feasibility of a high impact exercise intervention in post-menopausal women [Abstract]

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**Adherence and feasibility of a high impact exercise intervention in post-menopausal women**

Hartley C, Folland J, Kerslake R and Brooke-Wavell K.

Brief, high impact exercise increased femoral neck bone mineral density (BMD) in premenopausal women and older men. The aim of this study was to investigate if high impact exercise is feasible and effective in increasing BMD in post-menopausal women.

Participants were healthy postmenopausal women aged 55-70 y. The six month intervention involved high impact unilateral (hopping) exercise on one randomly selected leg. The first eleven weeks of the intervention were progressive whilst all women we were asked to complete 50 multidirectional hops each day in the final 15 weeks. BMD was measured for both femora using DXA pre and post intervention. Participants completed a diary detailing the number of hops completed each day, any pain or discomfort any reasons they couldn't exercise. Repeated measures ANOVA was used to detect any significant difference in response between legs (leg*time interaction).

Thirty-six women (age 61.0±4.2years; BMI 23.9±3.5kg/$m^2$) were recruited. Three participants were lost to follow up, four withdrew prior to week 11 (knee pain n=3; Achilles tendinopathy n=1). The remaining participants completed 74.8±22.9% of prescribed sessions in the final 15 weeks. Intention to treat analysis showed no significant difference in response between legs. In the 24 participants who exercised ≥4 times per week, femoral neck BMD increased significantly in the exercise leg (+0.4%) relative to the control leg (-1.1%; P+0.026). x women reported pain or discomfort on a total of 74 occasions (53% related to knee or ankle soreness) Twelve episodes prevented exercise for over a week but only one injury (achilles tendinopathy) persisted on cessation of exercise.

The majority of postmenopausal women who started the intervention (69%) exercised at least four times per week, and high impact exercise improved femoral neck BMD. The adherence was a little lower, and incidence of exercise related pain or discomfort a little higher than in previous studies in younger women and older men. Whilst this type of exercise may be effective and feasible for the majority, the intervention may need modification for some postmenopausal women.