

Online supporting information Table S2. Effects of exercise and protein on outcome in older adults - per protocol analysis

Article title: Blended home-based exercise and dietary protein in community dwelling older adults: a cluster RCT

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Table S2 Effects of exercise and protein on outcome in older adults - per protocol analysis (adherent participants).

		Randomized groups						Mixed Models with interaction effects*					
Outcome variable ^a		CON		HBex		HBex-Pro				Exercise effects (HBex vs CON)		Exercise + protein effects (HBex-Pro vs CON)	
		n	Mean (SE)	n	Mean (SE)	n	Mean (SE)		Difference (95%CI)	P	Difference (95%CI)	P	
Physical functioning													
m-PPT [†] (score)	0m	91	34.0 (0.2)	47	34.4 (0.2)	33	34.1 (0.3)						
	6m	81	33.8 (0.2)	46	34.3 (0.3)	28	33.7 (0.3)	Intervention effect	+0.04 (-0.74;.82)	0.920	-0.21 (-1.13;.72)	0.659	
	12m	77	34.1 (0.3)	39	34.1 (0.3)	26	33.8 (0.4)	Follow-up effect	-0.46 (-1.41;.50)	0.347	-0.53 (-1.64;.58)	0.352	
SPPB (score)	0m	91	11.3 (0.1)	47	11.6 (0.1)	33	11.3 (0.1)						
	6m	81	11.3 (0.1)	45	11.6 (0.1)	28	11.4 (0.1)	Intervention effect	+0.01 (-.29;.30)	0.953	+0.05 (-.30;.40)	0.772	
	12m	77	11.3 (0.1)	39	11.4 (0.1)	25	11.5 (0.1)	Follow-up effect	-0.18 (-.49;.13)	0.264	+0.13 (-.23;.49)	0.479	
TUG (sec)	0m	91	7.4 (0.2)	47	6.9 (0.2)	33	7.5 (0.3)						
	6m	81	7.8 (0.2)	45	7.5 (0.2)	28	7.7 (0.3)	Intervention effect	+0.12 (-.17;.40)	0.421	-0.18 (-.51;.15)	0.293	
	12m	77	7.4 (0.2)	38	7.1 (0.2)	26	7.5 (0.3)	Follow-up effect	+0.17 (-.13;.46)	0.267	+0.00 (-.34;.35)	0.985	
6MWT (m)	0m	91	517 (9)	47	527 (10)	32	506 (14)						
	6m	81	531 (9)	45	541 (10)	28	518 (14)	Intervention effect	-0.20 (-14.0;13.7)	0.978	-2.13 (-18.6;14.4)	0.800	
	12m	77	528 (9)	38	543 (10)	25	523 (14)	Follow-up effect	+4.60 (-10.0;19.2)	0.537	+6.08 (-11.1;23.2)	0.487	
Gait speed (m/s)	0m	91	1.37 (0.0)	47	1.37 (0.0)	33	1.33 (0.0)						
	6m	81	1.16 (0.0)	45	1.24 (0.0)	28	1.19 (0.0)	Intervention effect	+0.9 (-.02;.20)	0.125	+0.07 (-.06;.20)	0.292	
	12m	77	1.21 (0.0)	38	1.23 (0.0)	26	1.18 (0.0)	Follow-up effect	+0.2 (-.10;.13)	0.756	+0.00 (-.13;.13)	0.959	
PAL (avMETs/day)	0m	86	1.52 (0.0)	47	1.52 (0.0)	32	1.50 (0.0)						
	6m	80	1.49 (0.0)	46	1.53 (0.0)	27	1.53 (0.0)	Intervention effect	+0.03 (-.01;.07)	0.194	+0.06 (.01;.11)	0.031	
	12m	77	1.52 (0.0)	39	1.54 (0.0)	24	1.47 (0.0)	Follow-up effect	+0.01 (-.03;.06)	0.578	-0.03 (-.08;.02)	0.265	
HGS-av (kg)	0m	91	29.9 (1.1)	47	30.1 (1.3)	33	28.5 (2.0)						
	6m	81	29.5 (1.1)	46	29.7 (1.3)	28	30.7 (2.0)	Intervention effect	+0.03 (-1.32;1.38)	0.966	+2.62 (1.02;4.22)	0.001	
	12m	77	30.0 (1.1)	40	29.9 (1.3)	26	30.3 (2.0)	Follow-up effect	-0.21 (-1.61;1.20)	0.774	+1.81 (.16;3.45)	0.031	
Nutrition and body composition													
Protein intake ^b (g/kg/day)	0m	84	1.09 (0.0)	46	1.10 (0.0)	32	1.05 (0.0)						
	6m	81	1.13 (0.0)	46	1.12 (0.0)	28	1.46 (0.0)	Intervention effect	-0.01 (-.10;.08)	0.828	+0.38 (.27;.49)	<0.001	
	12m	77	1.05 (0.0)	40	1.07 (0.0)	26	1.29 (0.0)	Follow-up effect	+0.02 (-.08;.11)	0.717	+0.28 (.17;.40)	<0.001	
SMM (kg)	0m	89	20.6 (0.5)	47	20.6 (0.7)	32	21.2 (0.8)						
	6m	80	20.3 (0.5)	46	20.4 (0.7)	27	21.2 (0.8)	Intervention effect	+0.18 (-.09;.46)	0.191	<i>+0.30 (-.04;.63)</i>	<i>0.081</i>	
	12m	77	20.1 (0.5)	39	20.4 (0.7)	25	21.2 (0.8)	Follow-up effect	+0.31 (.02;.60)	0.038	+0.41 (.07;.75)	0.020	
Health status													
RAND-36 PF [†]	0m	91	83.6 (1.6)	47	88.1 (1.7)	33	82.9 (2.4)						
	6m	79	83.2 (1.6)	45	89.1 (1.7)	28	86.2 (2.4)	Intervention effect	+1.27 (-2.67;5.20)	0.528	+3.58 (-1.06;8.22)	0.130	
	12m	77	84.1 (1.7)	40	88.0 (1.7)	26	85.0 (2.5)	Follow-up effect	-0.83 (-5.07;3.42)	0.703	+1.49 (-3.46;6.45)	0.555	
RAND-36 SF	0m	91	88.8 (1.0)	47	91.0 (1.0)	32	88.4 (1.2)						
	6m	79	88.4 (1.0)	45	89.7 (1.0)	28	89.2 (1.2)	Intervention effect	-0.93 (-6.43;4.56)	0.739	+1.25 (-5.18;7.69)	0.703	
	12m	77	87.4 (1.0)	40	88.0 (1.0)	26	87.8 (1.2)	Follow-up effect	-1.65 (-7.35;4.05)	0.570	+0.80 (-5.81;7.40)	0.813	
RAND-36 Fprob	0m	91	78.5 (1.7)	47	83.7 (1.9)	33	78.4 (2.1)						
	6m	79	77.5 (1.7)	45	79.3 (1.9)	28	75.5 (2.1)	Intervention effect	-3.41 (-10.2;3.36)	0.323	-1.95 (-9.90;5.99)	0.630	
	12m	77	75.9 (1.7)	40	81.2 (1.9)	25	81.3 (2.1)	Follow-up effect	+0.10 (-6.93;7.12)	0.979	+5.49 (-2.75;13.7)	0.192	
RAND-36 Eprob	0m	88	87.5 (1.2)	47	87.5 (1.5)	32	85.0 (1.6)						
	6m	79	84.0 (1.2)	45	85.1 (1.5)	28	81.4 (1.6)	Intervention effect	+1.16 (-4.71;7.03)	0.698	-0.08 (-7.05;6.89)	0.982	
	12m	77	84.3 (1.2)	40	88.4 (1.5)	26	84.5 (1.6)	Follow-up effect	+4.10 (-2.00;10.2)	0.188	+2.72 (-4.45;9.89)	0.457	

RAND-36 Mental	0m	91	81.5 (1.1)	47	80.9 (1.2)	32	79.3 (1.5)	Intervention effect Follow-up effect	-1.25 (-5.07;2.57) -0.29 (-4.27;3.68)	0.522 0.885	-4.06 (-8.60;48) -4.22 (-8.88;45)	0.080 0.076
	6m	79	82.2 (1.1)	45	80.4 (1.2)	28	75.9 (1.5)					
	12m	76	83.4 (1.1)	40	82.6 (1.2)	26	77.0 (1.5)					
RAND-36 Pain	0m	91	80.8 (1.3)	47	83.7 (1.4)	32	77.8 (2.0)	Intervention effect Follow-up effect	-2.43 (-8.65;3.80) -3.12 (-9.59;3.35)	0.445 0.344	+2.86 (-4.50;10.2) -0.85 (-8.41;6.70)	0.446 0.825
	6m	79	82.5 (1.3)	45	83.0 (1.4)	28	82.3 (2.0)					
	12m	77	81.4 (1.3)	40	81.1 (1.4)	26	77.5 (2.0)					
RAND-36 Vitality	0m	91	72.7 (1.3)	47	73.8 (1.4)	32	69.9 (1.8)	Intervention effect Follow-up effect	-1.77 (-6.04;2.49) -1.36 (-5.79;3.07)	0.415 0.547	-2.56 (-8.60;1.48) -0.74 (-5.91;4.43)	0.166 0.779
	6m	79	74.5 (1.3)	45	73.9 (1.4)	28	68.2 (1.8)					
	12m	76	73.8 (1.3)	40	73.6 (1.4)	26	70.3 (1.8)					
RAND-36 Health	0m	91	70.8 (1.2)	47	70.4 (1.5)	32	67.6 (2.2)	Intervention effect Follow-up effect	-1.70 (-6.04;2.64) +4.28 (-.23;8.79)	0.443 0.063	+2.78 (-2.37;7.94) +3.61 (-1.76;8.97)	0.289 0.187
	6m	79	71.2 (1.2)	45	69.1 (1.5)	28	70.9 (2.2)					
	12m	76	68.9 (1.2)	40	72.8 (1.5)	26	69.4 (2.2)					
RAND-36 Health Change ^t	0m	90	53.4 (1.3)	47	55.6 (1.7)	33	53.2 (2.0)	Intervention effect Follow-up effect	+2.13 (-2.85;7.11) +1.79 (-4.70;8.29)	0.401 0.588	+5.93 (.01;11.8) +3.27 (-4.37;10.9)	0.049 0.401
	6m	79	49.5 (1.0)	45	53.1 (1.1)	28	55.7 (1.9)					
	12m	77	48.6 (1.1)	40	51.3 (1.6)	26	52.7 (2.1)					
GDS	0m	85	2.7 (0.3)	45	2.6 (0.4)	32	3.1 (0.6)	Intervention effect Follow-up effect	+0.04 (-.63;.70) -0.46 (-1.30;.38)	0.917 0.280	-0.43 (-1.25;.40) +0.90 (-.08;1.89)	0.310 0.072
	6m	81	2.8 (0.3)	46	2.7 (0.4)	24	2.8 (0.6)					
	12m	74	2.7 (0.3)	40	2.1 (0.4)	26	3.9 (0.7)					
Executive functioning												
TMT part A ^t (sec)	0m	91	34.6 (0.8)	47	32.4 (1.0)	33	33.8 (1.4)	Intervention effect Follow-up effect	-2.14 (-5.33;1.05) +0.30 (-3.61;4.20)	0.189 0.881	-4.15 (-7.95;-.34) -3.67 (-8.21;.86)	0.033 0.112
	6m	81	34.3 (0.8)	46	30.2 (1.1)	28	28.5 (1.2)					
	12m	77	31.9 (0.8)	39	30.5 (1.2)	26	26.7 (1.1)					
TMT part B ^t (sec)	0m	90	73.5 (2.6)	46	68.2 (3.1)	33	69.2 (4.4)	Intervention effect Follow-up effect	+1.15 (-6.11;8.41) -3.99 (-11.4;3.39)	0.756 0.428	-3.49 (-12.1;5.14) -0.84 (-9.40;7.73)	0.428 0.289
	6m	78	71.6 (2.4)	46	67.8 (2.9)	28	64.1 (4.1)					
	12m	76	70.4 (2.2)	39	61.8 (2.7)	26	65.7 (3.7)					
SCW part I (sec)	0m	91	50.9 (0.8)	46	49.2 (0.9)	33	51.6 (1.4)	Intervention effect Follow-up effect	-1.86 (-3.55;-.17) -2.37 (-4.14;-.60)	0.031 0.009	-3.27 (-5.27;-1.28) -3.84 (-5.89;-1.78)	0.001 <0.001
	6m	81	50.9 (0.8)	45	48.2 (0.9)	28	49.2 (1.4)					
	12m	76	50.6 (0.8)	39	47.3 (0.9)	26	48.3 (1.4)					
SCW part II (sec)	0m	91	61.8 (1.1)	46	61.2 (1.5)	33	64.4 (2.0)	Intervention effect Follow-up effect	-2.35 (-4.25;-.46) -1.74 (-.3.72;.24)	0.015 0.084	-2.55 (-4.78;-.31) -2.53 (-4.83;-.24)	0.026 0.031
	6m	81	61.9 (1.1)	45	59.0 (1.5)	28	62.0 (2.0)					
	12m	77	60.7 (1.1)	39	58.3 (1.5)	26	60.7 (2.0)					
SCW part III (sec)	0m	91	104 (2.7)	46	99.8 (3.1)	33	105 (3.8)	Intervention effect Follow-up effect	-0.42 (-5.35;4.50) -2.76 (-7.91;2.39)	0.869 0.293	-4.90 (-10.7;.91) -3.89 (-9.86;2.08)	0.099 0.202
	6m	81	101 (2.7)	45	96.2 (3.1)	28	96.6 (3.8)					
	12m	77	102 (2.7)	39	95.3 (3.1)	26	99.0 (3.8)					
SIS ^t (score)	0m	91	47.8 (2.1)	46	44.8 (2.1)	33	46.6 (2.2)	Intervention effect Follow-up effect	+0.93 (-5.12;6.99) -0.47 (-10.3;9.33)	0.762 0.925	-2.63 (-9.73;4.47) -0.80 (-12.2;10.6)	0.467 0.891
	6m	81	44.5 (2.0)	45	42.7 (2.3)	28	40.7 (2.5)					
	12m	76	46.1 (2.2)	39	43.1 (2.6)	26	44.2 (2.9)					
Letter-fluency Test (number)	0m	91	42.9 (1.0)	47	42.7 (1.6)	33	38.7 (2.7)	Intervention effect Follow-up effect	+1.71 (-.96;4.39) +3.07 (-.25;5.89)	0.210 0.033	+2.07 (-1.11;5.26) +3.39 (-.11;6.67)	0.202 0.042
	6m	81	42.9 (1.0)	46	44.5 (1.6)	28	40.8 (2.7)					
	12m	77	44.5 (1.0)	39	47.5 (1.6)	26	43.7 (2.7)					

BMI, body mass index (calculated as weight in kilograms divided by height in meters squared); GDS, geriatric depression scale; HGS, hand grip strength; m-PPT, modified physical performance test; 6MWT, 6 minute walk test; PAL, physical activity level (calculated as average metabolic equivalent of tasks per day); RAND-36 PF, RAND-36 health survey physical functioning summary component score; RAND-36 SF, RAND-36 health survey social functioning summary component score; SMM, skeletal muscle mass (calculated as lean mass in kilograms of the four limbs); SCW, troop color-word test; SIS, stroop interference score; SPPB, short performance battery; TMT, trail making test; TUG, timed up-and-go test.

* P values for the comparison among the groups from baseline to 6 months and 12 months were calculated with the use of mixed-model analysis of repeated measures. ^a Unless otherwise noted; values are estimated marginal means (SE), covariates Age, BMI, MMSE and Sex were added. ^b Covariate BMI was added. ^t time was added as random slope, 3 level model, covariance exchangeable or unstructured.