

Online Resource 1. Procedure for Assessor Training

A single assessor who was blinded to group assignment completed the physical performance assessments throughout the study. The assessor was a doctoral student with a B.S. and M.S. in exercise science. The assessor was trained by the Principal Investigator (PI), a licensed physical therapist with over 20 years of clinical experience working with older adults. After reviewing the written documentation for conducting the assessments, training with the PI, and practicing with a community member, the assessor demonstrated competence by conducting the tests on the PI over Zoom. All of the assessment sessions with participants were video-recorded. The PI reviewed the initial 10 recordings for fidelity to the protocol and continued to review a subset of the assessment recordings over the course of the study. Given the 2-3 month lag in testing between recruitment and the 4 month follow-up, prior to follow-up testing and subsequent cohorts, the PI and assessor reviewed the protocol together along with key aspects of testing (e.g., adjust camera for full body view, no chairs on wheels).

Online Resource 2. Methods for Step Intensity

Step intensities were estimated using the step count (steps/minute) on the 1-minute epoch summary files. Peak 30-minute cadence was the highest 30 minutes cadence value, not necessarily consecutive, each day. We calculated the mean of peak 30 minute cadence over all valid days, after calculating the daily mean of peak 30-minute cadence. We categorized time spent and steps accumulated according to the cadence bands: incidental movement ($1 \leq \text{cadence} < 20$), sporadic movement ($20 \leq \text{cadence} < 40$), purposeful steps ($40 \leq \text{cadence} < 60$), slow speed walking ($60 \leq \text{cadence} < 80$), medium speed walking ($80 \leq \text{cadence} < 100$), brisk walking ($100 \leq \text{cadence} < 120$), and fast locomotor movements ($\text{cadence} \geq 120$) [1]

1. Tudor-Locke C, Camhi SM, Leonardi C, Johnson WD, Katzmarzyk PT, Earnest CP, et al. Patterns of adult stepping cadence in the 2005–2006 NHANES. *Prev Med.* 2011;53:178–81.

Online Resource 3. Changes in accelerometer-derived peak 30-minutes intensity and cadence outcomes

*SPM: Steps per Minutes

	Tele-EF Group				Control Group				Group x Time p-value
	Baseline	16 weeks	Change	<i>p</i>	Baseline	16 weeks	Change	<i>p</i>	
Peak 30-min intensity (cadence/min)	58.0±15.7	65.4±17.2	7.5±14.0	0.05	68.6±15.8	67.3±17.6	-1.3±15.2	0.73	0.08
Incidental: 1≤cadence<20 spm*	141.4±36.1	158.8±38.1	17.4±31.2	0.04	137.4±47.0	136.8±52.1	-0.5±36.4	0.9	0.07
Sporadic: 20≤cadence<40 spm	61.1±17.7	71.5±20.2	10.4±12.5	0.01	67.0±24.6	64.8±29.5	-2.2±17.3	0.61	0.01
Purposeful: 40≤cadence<60 spm	21.4±11.3	27.5±12.9	6.1±9.1	0.02	26.6±13.2	23.3±16.8	-3.2±11.2	0.25	0.01
Slow speed: 60≤cadence<80 spm	6.7±4.4	11.5±8.4	4.8±8.6	0.04	11.3±7.7	10.4±7.7	-0.9±6.3	0.56	0.03
Medium speed: 80≤cadence<100 spm	4.1±4.6	7.6±8.8	3.4±8.0	0.10	6.3±5.0	6.4±4.7	0.1±5.2	0.95	0.20

Online Resource 4. Changes in patient-reported outcomes and self-efficacy for exercise

PROMIS domains (0-100)	Tele-EF Group Mean (SD) N=19				Control Group Mean (SD) N=18				Group x Time p-value
	Baseline	16 weeks	Change	p	Baseline	16 weeks	Change	p	
Fatigue	54.1 (7.2)	50.7 (11.2)	-3.4	0.10	50.0 (9.8)	48.9 (8.9)	-1.2	0.40	0.37
Sleep disturbance	50.1 (7.4)	48.6 (9.8)	-1.4	0.50	48.2 (8.1)	48.4 (7.5)	0.2	0.88	0.52
Depression	50.2 (8.2)	50.4 (9.2)	0.2	0.86	44.2 (6.0)	47.5 (7.0)	3.2	0.04	0.06
Anxiety	50.8 (7.3)	49.3 (6.9)	-1.5	0.39	46.1 (6.0)	48.4 (8.0)	2.3	0.14	0.06
Satisfaction with participation in social roles	49.6 (8.3)	50.7 (11.1)	1.0	0.64	53.5 (8.9)	53.7 (8.4)	0.3	0.85	0.71
Pain interference	52.2 (9.7)	52.2 (9.2)	0.1	0.97	53.1 (8.7)	51.2 (8.1)	-1.8	0.28	0.45
Self-efficacy for exercise (0-100)	68.2 (14.1)	68.3 (11.3)	0.14	0.93	71.3 (14.9)	69.7 (15.6)	-1.6	0.25	0.41