

Table S1. Sensitive analysis for muscle strength outcomes at baseline, pre-surgery, 6 and 12-weeks post-surgery.

Outcome Variables	Baseline Mean $\pm$ SE	Pre-surgery Mean $\pm$ SE	6-weeks Mean $\pm$ SE	12-weeks Mean $\pm$ SE	Time	p-value Group x Time	Comparison between assessments*
Leg press, kg							
<i>Prehab</i>	116.7 $\pm$ 10.1	136.0 $\pm$ 11.7	126.0 $\pm$ 11.9	131.0 $\pm$ 12.1	< 0.001	0.796	a, c < b, d
<i>Rehab</i>	120.1 $\pm$ 7.5	126.6 $\pm$ 7.1	117.7 $\pm$ 6.5	131.8 $\pm$ 6.9			a, c < b, d
Chest press, kg							
<i>Prehab</i>	48.0 $\pm$ 4.4	51.0 $\pm$ 4.3	46.1 $\pm$ 4.1	46.9 $\pm$ 4.2	< 0.001	0.946	a, c, d < b
<i>Rehab</i>	49.6 $\pm$ 4.0	48.1 $\pm$ 3.7	44.5 $\pm$ 3.5	51.4 $\pm$ 3.8			a, b, d > c; b < d

*Within-group multiple comparisons for baseline, pre-surgery, 6 and 12-weeks post-surgery, with a Bonferroni-corrected $P < 0.05$, (a) Baseline, (b) pre-surgery, (c) 6-weeks post-surgery, (d) 12-weeks post-surgery.

Table S2. Sensitive analysis for physical function outcomes at baseline, pre-surgery, 6 and 12-weeks post-surgery.

Outcome Variables	Baseline Mean $\pm$ SE	Pre-surgery Mean $\pm$ SE	6-weeks Mean $\pm$ SE	12-weeks Mean $\pm$ SE	Time	p-value Group $\times$ Time	Comparison between assessments*
400-m walk, sec							
<i>Prehab</i>	223.0 $\pm$ 11.2	206.4 $\pm$ 10.7	211.5 $\pm$ 12.6	205.9 $\pm$ 14.1	< 0.001	0.325	a > b, c, d
<i>Rehab</i>	233.7 $\pm$ 6.7	223.2 $\pm$ 6.4	229.3 $\pm$ 8.2	217.3 $\pm$ 6.3			a > b, d; c > d
Chair Rise, sec							
<i>Prehab</i>	10.1 $\pm$ 0.9	8.7 $\pm$ 0.5	9.1 $\pm$ 0.5	8.6 $\pm$ 0.5	< 0.001	0.277	a > b, d; c > d
<i>Rehab</i>	10.4 $\pm$ 0.7	9.7 $\pm$ 0.6	10.0 $\pm$ 0.6	9.2 $\pm$ 0.4			a > b, d; c > d
Stair Climb, sec							
<i>Prehab</i>	4.0 $\pm$ 0.3	3.8 $\pm$ 0.3	3.8 $\pm$ 0.3	3.8 $\pm$ 0.3	0.002	0.699	-
<i>Rehab</i>	3.9 $\pm$ 0.2	3.8 $\pm$ 0.2	3.8 $\pm$ 0.2	3.6 $\pm$ 0.1			a > d
6-m usual walk, sec							
<i>Prehab</i>	4.2 $\pm$ 0.2	4.1 $\pm$ 0.1	3.9 $\pm$ 0.1	4.1 $\pm$ 0.1	< 0.001	0.012	a > c
<i>Rehab</i>	4.6 $\pm$ 0.2	4.2 $\pm$ 0.1	3.9 $\pm$ 0.1	4.1 $\pm$ 0.1			a > b, c, d; b > c
6-m fast walk, sec							
<i>Prehab</i>	3.0 $\pm$ 0.1	2.8 $\pm$ 0.1	2.8 $\pm$ 0.1	2.8 $\pm$ 0.1	< 0.001	0.590	a > b, c, d
<i>Rehab</i>	3.1 $\pm$ 0.1	2.8 $\pm$ 0.1	3.0 $\pm$ 0.1	2.9 $\pm$ 0.1			a > b
6-m backward walk, sec							
<i>Prehab</i>	15.6 $\pm$ 1.3	13.6 $\pm$ 1.1	13.2 $\pm$ 1.3	12.0 $\pm$ 0.9	< 0.001	0.372	a > b, c, d
<i>Rehab</i>	15.6 $\pm$ 1.2	13.1 $\pm$ 0.9	11.8 $\pm$ 0.8	12.0 $\pm$ 0.9			a > b, c, d; b > c

*, Within-group multiple comparisons for baseline, pre-surgery, 6 and 12-weeks post-surgery, with a Bonferroni-corrected $P < 0.05$, (a) Baseline, (b) pre-surgery, (c) 6-weeks post-surgery, (d) 12-weeks post-surgery.

Table S3. Sensitive analysis for body composition outcomes at baseline, pre-surgery, 6 and 12-weeks post-surgery.

Outcome Variables	Baseline Mean $\pm$ SE	Pre-surgery Mean $\pm$ SE	6-weeks Mean $\pm$ SE	12-weeks Mean $\pm$ SE	Time	p-value Group x Time	Comparison between assessments*
Whole-body fat mass, kg							
<i>Prehab</i>	24.8 $\pm$ 1.3	23.3 $\pm$ 1.3	24.5 $\pm$ 1.1	24.0 $\pm$ 1.1	0.051	0.077	-
<i>Rehab</i>	26.4 $\pm$ 1.6	26.1 $\pm$ 1.5	25.7 $\pm$ 1.6	25.3 $\pm$ 1.5			-
Whole-body Lean mass, kg							
<i>Prehab</i>	55.3 $\pm$ 0.9	55.1 $\pm$ 0.8	53.6 $\pm$ 1.1	54.3 $\pm$ 1.0	< 0.001	0.673	a, b > c
<i>Rehab</i>	58.8 $\pm$ 2.2	58.7 $\pm$ 2.2	57.6 $\pm$ 2.2	58.6 $\pm$ 2.4			a, b > c
Trunk fat mass, kg							
<i>Prehab</i>	13.2 $\pm$ 0.8	12.2 $\pm$ 0.8	12.8 $\pm$ 0.7	12.5 $\pm$ 0.7	0.040	0.175	-
<i>Rehab</i>	14.2 $\pm$ 1.0	13.9 $\pm$ 0.9	13.6 $\pm$ 0.9	13.4 $\pm$ 0.9			a > c, d
Body fat percentage, %							
<i>Prehab</i>	29.6 $\pm$ 1.0	28.5 $\pm$ 1.1	30.2 $\pm$ 0.9	29.4 $\pm$ 0.9	0.003	0.040	b < c
<i>Rehab</i>	29.8 $\pm$ 0.8	29.6 $\pm$ 0.7	29.6 $\pm$ 0.7	29.0 $\pm$ 0.7			-

*, Within-group multiple comparisons for baseline, pre-surgery, 6 and 12-weeks post-surgery, with a Bonferroni-corrected $P < 0.05$, (a) Baseline, (b) pre-surgery, (c) 6-weeks post-surgery, (d) 12-weeks post-surgery.

Table S4. Sensitive analysis for urinary incontinence, quality of life and fatigue at all assessment timepoint.

Outcome Variables	Baseline	Pre-surgery	2-weeks	6-weeks	12-weeks	p-value		Comparison between assessments*
	Mean $\pm$ SE	Mean $\pm$ SE	Mean $\pm$ SE	Mean $\pm$ SE	Mean $\pm$ SE	Time	Group x Time	
Urinary Incontinence, g								
<i>Prehab</i>	-	-	345.1 $\pm$ 113.7	124.8 $\pm$ 48.8	82.4 $\pm$ 47.2	< 0.001	0.884	-
<i>Rehab</i>	-	-	410.2 $\pm$ 148.7	104.9 $\pm$ 30.1	71.7 $\pm$ 42.7			c > e
Quality of life #								
<i>Prehab</i>	84.6 $\pm$ 4.4	82.0 $\pm$ 3.6	64.8 $\pm$ 5.5	75.0 $\pm$ 3.6	81.4 $\pm$ 4.6	< 0.001	0.886	a, b, e > c
<i>Rehab</i>	83.3 $\pm$ 4.4	77.3 $\pm$ 5.3	60.6 $\pm$ 5.8	74.3 $\pm$ 3.3	80.3 $\pm$ 3.3			a, d, e > c
Fatigue								
<i>Prehab</i>	12.0 $\pm$ 3.5	6.0 $\pm$ 2.3	44.5 $\pm$ 8.3	24.8 $\pm$ 5.9	18.8 $\pm$ 4.4	< 0.001	0.185	a, b, d, e < c; b < a, d
<i>Rehab</i>	12.1 $\pm$ 3.9	12.1 $\pm$ 4.4	30.3 $\pm$ 3.5	13.1 $\pm$ 4.5	9.1 $\pm$ 3.1			a, b, d, e < c

Global health domain. *Within-group multiple comparisons for baseline, pre-surgery, 2, 6 and 12-weeks post-surgery, with a Bonferroni-corrected $p < 0.05$, (a) Baseline, (b) pre-surgery, (c) 2-weeks post-surgery, (d) 6-weeks post-surgery, (e) 12-weeks post-surgery.

Figure S1. Study design

