



## Supplementary Materials

**Table S1.** Results of subgroup analyses.

Subgroup	LBM <sup>a</sup> [kg] t0			LBM [kg] t1			Diff.	<i>p</i> -value (time) <sup>b</sup>	<i>p</i> -value (time x group) <sup>c</sup>
	Mean (SD)	Min.	Max.	Mean (SD)	Min.	Max.			
Men	CG (n = 47) 91.0 (14.4)	57.9	132	82.4 (13.9)	53.0	130	8.64 (9.49 %)	< 0.001	0.233
	PG (n = 35) 91.6 (15.0)	38.6	119	81.5 (12.6)	36.5	109	10.1 (11.0 %)		
Women	CG (n = 101) 61.4 (8.86)	33.1	90.4	57.1 (7.33)	43.1	86.1	4.30 (7.00 %)	< 0.001	0.555
	PG (n = 84) 60.7 (7.04)	43.9	86.3	56.7 (6.42)	40.1	79.0	3.99 (6.57 %)		
Older patients (age 56 years) <sup>d</sup>	CG (n = 39) 68.0 (15.2)	51.1	107	62.5 (12.9)	47.0	101	5.54 (8.15 %)	< 0.001	0.552
	PG (n = 30) 68.9 (14.6)	52.5	103	62.7 (12.0)	48.7	90.5	6.16 (8.94 %)		
Taller patients (height ≥ 1.74m) <sup>d</sup>	CG (n = 35) 91.6 (15.6)	61.1	132	82.7 (14.6)	56.0	130	8.92 (7.00 %)	< 0.001	0.577
	PG (n = 33) 85.5 (15.9)	56.5	115	77.4 (12.1)	54.6	102	8.13 (7.00 %)		
Higher BMI (≥ 51.6 kg/m <sup>2</sup> ) <sup>d</sup>	CG (n = 40) 78.2 (19.9)	33.1	132	72.0 (16.7)	52.9	119	6.28 (8.03 %)	< 0.001	0.485
	PG (n = 27) 79.4 (19.3)	54.6	119	72.0 (16.1)	51.3	109	7.39 (9.30 %)		
Lower LBM (≤ 57.7 kg) <sup>e</sup>	CG (n = 37) 53.4 (4.01)	33.1	57.2	51.2 (3.47)	43.1	63.2	2.22 (4.15 %)	< 0.001	0.598
	PG (n = 30) 53.3 (4.27)	38.6	57.7	50.5 (4.69)	36.5	59.1	2.80 (5.26 %)		
Higher LBM (≥ 83.0 kg) <sup>d</sup>	CG (n = 40) 95.3 (11.7)	83.9	132	85.8 (12.5)	68.5	130	9.44 (9.91 %)	< 0.001	0.163
	PG (n = 27) 97.0 (10.5)	83.0	119	85.7 (9.10)	67.6	109	11.3 (11.6 %)		
With gastric balloon	CG (n = 92) 68.3 (17.5)	33.1	132	63.3 (15.5)	43.1	130	5.02 (7.32 %)	< 0.001	0.523
	PG (n = 65) 71.2 (18.5)	43.9	119	65.7 (15.4)	40.1	109	5.55 (7.72 %)		
Without gastric balloon	CG (n = 56) 75.0 (17.0)	52.0	128	68.3 (14.7)	47.2	119	6.77 (8.93 %)	< 0.001	0.416
	PG (n = 54) 68.1 (15.8)	38.6	108	62.0 (12.6)	36.5	92.8	6.07 (8.96 %)		
Combined sub- group <sup>f</sup>	CG (n = 95) 68.2 (16.2)	33.1	128	63.0 (13.7)	43.1	119	5.28 (7.73 %)	< 0.001	0.830
	PG (n = 95) 67.4 (15.6)	43.9	119	62.2 (13.2)	40.1	109	5.14 (5.28 %)		

a: Lean body mass; b: differences between t0 at baseline and t1 at 12 weeks; c: differences between control group (CG) and protein group (PG); d: subgroup was formed based on a 75<sup>th</sup> percentile cutoff; e: subgroup was formed based on a 25<sup>th</sup> percentile cutoff; f: Combined group consisted of 95 case-control pairs that were individually matched for sex, age ( $\pm 3$  years) and height ( $\pm 0.05$  m). Differences were tested by using the two-factor ANOVA with repeated measures.