



Physical function, quality of life and energy expenditure during activities of daily living in post-bariatric surgery patients and obese individuals

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OBJECTIVES

Bariatric surgery (BS) is an effective method to weight loss, however, some patients experience persistence of physical inactivity. Furthermore, It is not clear if some surgical techniques, mainly those with some disabsorptive components, could be involved in the low physical performance through interfering with nutritional status. This study aimed to evaluate physical function (PF), quality of life (QOL) and energy expenditure (EE) during activities of daily living (ADL) in post-BS patients and compare with severely obese individuals not submitted to BS.

METHODS

Forty two subjects were included in the study: 21 post-BS patients (3 to 4 years post Roux-en-Y gastric bypass technique) with stable weight for at least 6 months (group PO); and 21 obese individuals without BS (group OB). PF was estimated by the Glittre ADL-test (1), a standardized test which uses ADL. These activities involve rising from a chair, lifting, carrying and bending. EE was assessed by the multisensor sensewear armband activity monitor during ADL, the body composition was determined by bioelectrical impedance and QOL by the SF-36 questionnaire (2). In order to access PF and EE in each circuit activity, subjects were submitted to a modified version of the Glittre ADL-test (3). It included the same five activities described above, but performed during 2 minutes each: walking on the level, walking on the level carrying a backpack (10% of their body weight), rising from a chair and sitting in another chair positioned 1 meter across, walking up/downstairs (2 steps) and moving an object weighting 1 kg from shelves.

RESULTS

Table 1. Patients characteristics and anthropometric profile of obesity (OB) and post-operative (PO) groups.

Characteristics	OB (n = 21)	PO (n=21)	P
Age	44 ± 9	41 ± 11	0.48
Gender (F/M)	16/5	16/5	1
Weight (Kg)	113 ± 21	75 ± 14	<0.01
BMI (Kg.m ⁻²)	44 ± 6	28 ± 4	<0.01
Fat mass (%)	44 ± 7	31 ± 6	<0.01
Fat mass (Kg)	50 ± 13	23 ± 7	<0.01
Fat free mass (Kg)	62 ± 15	52 ± 10	<0.01
Metabolic rate (Kcal)	1936 ± 434	1565 ± 318	<0.01

Data are expressed as mean ± standard deviation. Student T test
F = female, M = male, BMI = body mass index.

Table 2. Comparison of energy expenditure (in average) during the 5 activities of the Modified Glittre ADL-Test between obesity (OB) and post-operative (PO) groups.

Activities	OB (n=21)	PO (n=21)	P
Walking	28 ± 7	32 ± 6	0.06
Walking with a backpack (cal)	29 ± 6	31 ± 6	0.08
Up/Downstairs (cal)	21 ± 5	30 ± 6	<0.01
Rising/Sitting in chair (cal)	30 ± 7	40 ± 7	<0.01
Moving objects in shelves (cal)	22 ± 8	30 ± 7	<0.01

Data are expressed as mean ± standard deviation. Student T test

Table 3. Differences in quality of life scores (SF-36) between obesity (OB) and post-operative (PO) groups.

SF-36 Domains	OB	PO	P
Physical Functioning	52 ± 23	80 ± 23	< 0.01
Role-Physical	54 ± 32	88 ± 22	< 0.01
Body Pain	47 ± 26	70 ± 25	< 0.01
General Health	54 ± 19	84 ± 15	< 0.01
Vitality	48 ± 19	72 ± 21	< 0.01
Social Functioning	55 ± 28	110 ± 21	< 0.01
Role-Emotional	48 ± 42	84 ± 33	< 0.01
Mental Health	55 ± 28	78 ± 19	< 0.01

Data are expressed as mean ± standard deviation. Student T test

CONCLUSIONS

Post-bariatric surgery patients have better physical function, quality of life and perform activities under lower total EE than obese subjects. In these subjects, better physical function is associated with better body composition and lower EE during activities of daily living.

References

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