Obesity and Mobility: Outcomes From a Multidisciplinary Team Weight Management Program

Mary E. Sanders, Ph.D., FACSM, Katie B. Lyons, MS III, Quang T. Nguyen, D.O., FACE

Wellness and Weight Loss Clinic, School of Medicine, University of Nevada, Reno, NV

University of Nevada School of Medicine

Introduction

Traditional medical management of obesity patients may not address mobility issues in this population. Innovative interdisciplinary strategies to treat obesity should be examined. A multidisciplinary weight loss clinic taking an interdisciplinary approach developed a program called Energy BALANCE (Behavior And Lifestyle Assessment with Nutrition Centered Education) at the University of Nevada, Reno in 2010. This clinic utilizes a team approach to evaluate, motivate and effectively treat patients with obesity and mobility challenges.

Purpose

To determine the effect of a clinical weight loss program conducted by an integrated multidisciplinary team including physicians, registered dieticians, and clinical exercise physiologists on selected anthropometrics and mobility in obese patients.

Methods

Program evaluation of patients (n=66); 46.6±8.3 y; 114kg ± 22; BMI= 41.3 kg/m^2, enrolled in a 12 week weight loss program. Integrated team visits included medical, nutrition and physical activity assessments; weekly follow-ups included weight loss behavior education, lifestyle strategies, tracking and guidance. Physical activity visits included functional field assessments, pre-exercise screening, medical and current activity status. Patients received an *Accusplit 120-XLE* pedometer with step tracking instructions and a *First Step to Active Health*® kit. An individualized home/gym exercise program based on ACSM guidelines was designed and progressed over time. Dieticians reviewed patient's food and step log/activity records. Physicians reviewed patient's health status, with intervention as needed.

Mobility Assessments

Sit-to-stand : determines lower body muscular strength. Rise to a full standing position and sit as quickly as possible for 30 seconds (Rikli & Jones, 1999).

Arm Curls: measures upper body strength. The number of curls completed in 30 sec is recorded (Rikli & Jones, 1999).

One leg stand: balance indentifies vestibulocochlear problems, leg length problems, and instability with standing on one leg for 30 sec.

Back Scratch: measures flexibility of the shoulder and indentifies shoulder conditions that may limit range of motion important for activities of daily living (Rikli & Jones, 1999).

Pedometer: measures steps taken during the day providing general activity baseline.

Fitness Tool

First Step to Active Health ®

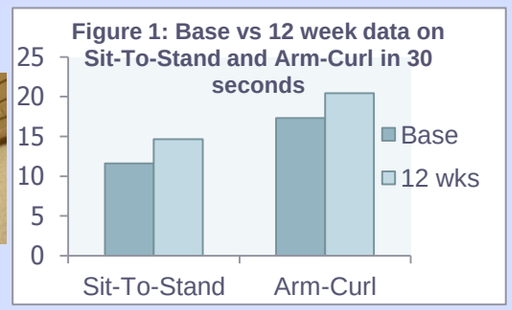
- Illustrated card addressing cardiovascular and muscular endurance, flexibility and balance
- Elastic band
- Guided practice is conducted in the office with the patient

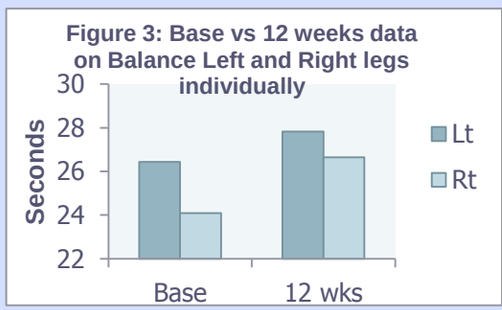
Results Table

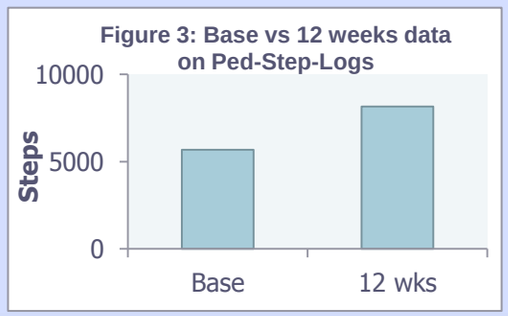
Assessment	Baseline	12 week	Change (%)
Weight (kg)	114±21.8	107± 18**	-6
BMI (kg/m²)	41.3±18.2	38.9±16**	-5.8
Percent body fat (%)	43.8±7.1	41.9±5.8**	-4.3
Muscle mass (kg)	58.8±5.1	57.8±5.6**	-1.62
Pedometer steps	5100±1574	8040±773**	57.6
Sit to stands	11.6±4.9	14.7±5.8**	26.7
Arm curls	17.3±4.6	20.4±5.2**	17.9
Balance (seconds)			
Left leg	26.4±9.3	27.8±5.8	5.3
Right leg	24.1±9.3	26.7±7.3*	10.7
Back Scratch (in)			
Right arm	-7.0±5.1	-5.1±4.6**	28
Left arm	-8.6±5.4	-6.6±4.6**	23

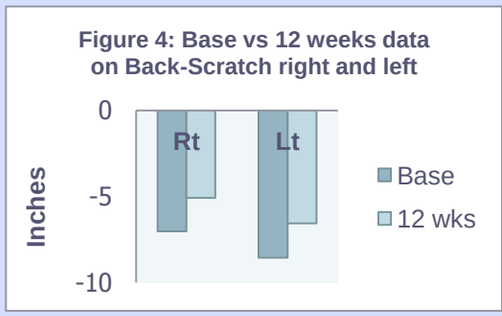
* $p<.05$, ** $p<0.0001$

Measures revealed significant improvement in most areas with a p-value of 0.0001 and with a p-value of 0.05 for right leg balance only (Table). The left leg revealed no significant change in balance.









Mobility Discussion

Although our patient's mean average age was 47 years old, they moved more like older adults. Their mobility scores were within the same range as normal weight older adults (60-64 years) (Rikli & Jones, 1999). Many were motivated by this knowledge to exceed older adult scores so they could "act their age". After 12 weeks, mobility improved significantly in all measures except in left leg balance which may be due to right leg dominance. However, their mobility scores still fell within older adult categories. Moreover, mobility scores improved despite significant muscle mass loss.

Conclusion

Within a clinical setting, an integrated multidisciplinary team including a clinical exercise physiologist, can help obese patients improve both their weight and mobility. Older adult mobility assessments may provide useful data for designing exercise prescriptions for younger obese adults and provide encouragement as patients experience changes related to their quality of life outside of weight measures. Without access to a fitness facility, The *First Step to Active Health* ® and Accusplit pedometers were effective tools for patients to achieve weight and mobility goals within an office or home-based setting.

Reference

Rikli, R & Jones, J. Functional fitness normative scores for community-residing older adults, ages 60-94. *Journal of Aging and Physical Activity*. 1999 (7); 162-181.

Acknowledgement:s

Thera-Band® Hygenic Corporation

Patient Model: Bill Zarker