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The Effects of a Six-Week Weight Loss Program on Muscular Strength and Endurance

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Increased muscular strength and endurance are positively correlated with regular exercise training. A local gym recruits individuals to participate in a six-week twenty pound weight loss challenge and provides participants with a structured diet and exercise plan. **PURPOSE:** The purpose of this study was to determine if a primarily weight loss driven program would result in substantial increases in muscular strength and muscular endurance. **METHODS:** To test muscular strength, two upper body, shoulder press and bicep curls, and two lower body, squats and Romanian dead lifts (RDL), were assessed in pounds using the 6 repetition maximum (6RM) analysis. To analyze core endurance, forearm plank and six inches were performed for maximum time in seconds. Lastly, whole body muscular endurance was determined by measuring time to fatigue for high knees and wall taps. All of these variables were assessed before and after the six-week training program in thirty four sedentary adults ($M_{age}=38.24$, $SD=9.93$). Subjects were required to participate in a vigorous boot camp program a minimum of five days per week for fifty minutes, follow a given and structured diet plan, and drink a gallon of water daily. **RESULTS:** There was a significant increase in squat strength (61 ± 8 lbs pre vs. 81 ± 9 lbs post, $P < 0.001$) and RDL strength (75 ± 8 lbs pre vs. 90 ± 9 lbs post, $P < 0.01$) following the six-week program. Similarly, upper body strength increased in both the shoulder press (40 ± 3 lbs pre vs. 44 ± 3 lbs post, $P < 0.01$ and bicep curls (35 ± 2 lbs pre vs. 40 ± 2 lbs post, $P < 0.01$). Core muscular endurance time only improved in the forearm plank ($P = 0.004$) and whole body endurance time improved with just wall taps ($P = 0.02$). **CONCLUSIONS:** These data suggest that this six-week weight loss program is effective in increasing both muscular strength and muscular endurance. Although these strength and endurance gains may clearly be the result of participating in an exercise program after previously living a sedentary lifestyle, further research can contribute to training specificity and the impact both cardiovascular and weight training have in junction with a highly structured weight loss program.

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