

IMPACT



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StrongWomen™ Program Increases Arm and Leg Strength

The Situation

Strength training (also called resistance training) enables adults to improve their overall health and fitness by increasing muscular strength, endurance, and bone density. The American College of Sports Medicine recommends that adults include strength training as part of a comprehensive physical activity program. This will help prevent the decline in muscle mass that begins at the age of 30. The 2004 National Health Interview Survey revealed that only 21.9% of men and 17.5% of women reported strength training the recommended two or more times per week.

Our Response

The University of Idaho Extension addressed this situation by providing 10 strength-training classes using the StrongWomen™ curriculum developed by Tufts University. The 10 classes were conducted in Ada, Canyon, and Owyhee counties by a certified StrongWomen™ instructor (Marsha Lockard). Two classes were offered each week and the program lasted five weeks.

Each class lasted approximately 45 minutes and consisted of a warm-up, three arm exercises (biceps curl, overhead press, bent forward fly), three leg exercises (standing leg curl, knee extension, side hip raise) a cool-down, and a brief nutrition topic. Nutrition topics included the food groups within MyPyramid—grain, fruit, vegetable, milk, meat and beans, oils—and the importance of staying hydrated.

Three different evaluation tools were used to measure program outcomes. The first was a pre and post-lifestyle survey that contained questions on physical activity habits and eating habits. The second evaluation tool collected data on pre and post physical measurements, Body Mass Index (BMI) and Resting Heart Rate (RHR). The third evaluation tool was a Class 1-10 strength training log and participants recorded the weights they used for the three arm and three leg exercises in each class.

Program Outcomes

Demographics

40 participants completed the demographic information:

- participant age range was between 35-81 years-old
- 39 were Caucasian and 1 was Asian

Eating Habits

There were no major changes in eating habits over the five week period.

Table 1. Pre- and post-eating habits.

Food Group	Pre (average) N=57	Post (average) N=29
Grains	2.9 ounces/day	2.7 ounces/day
Whole grains	1.8 ounces/day	1.9 ounces/day
Vegetables	1.7 cups/day	1.7 cups/day
Fruit	1.6 cups/day	1.6 cups/day
Milk	1.4 cups/day	2.0 cups/day
Cheese	0.7 oz/day	0.9 oz/day
Meat & Beans	3.7 oz/day	3.7 oz/day
Soda	3.0 times/week	2.6 times/week
Fast food	2.6 times/week	2.5 times/week

Physical Activity Habits: There was an improvement in all physical activity habits.

Table 2. Pre/post physical activity habits.

Physical activity habit	Pre (N=57)	Post (N=29)
Get 30 minutes of physical activity /day	2.0 times/wk	2.9 times/wk
Stretching	1.5 times/wk	2.9 times/wk
Strength training	0.3 times/wk	2.3 times/wk

Physical Measurements: There was a slight decrease in BMI and RHR.

Table 3. Pre/post physical measurements.

Physical measurement	Pre (N=39)	Post(N=25)
BMI (kg/m ²)	29.6	29.1
RHR (beats per minute)	77.7	71.7

Strength Training Exercises: Between 16-20 participants completed the strength training class logs in each class. There was an approximately 80-140% increase in arm and leg strength.

Table 4. Pre/post arm and leg exercises.

Exercise	Pre (Mean wt)	Post (Mean wt)	% increase
Biceps Curl	2.3 lb	5.5 lb	139%
Overhead Press	2.3 lb	4.9 lb	113%
Bent Forward Fly	2.3 lb	4.1 lb	78%
Standing Leg Curl	2.4 lb	6.45 lb	168%
Knee Extension	2.4 lb	6.45 lb	169%
Side Hip Raise	2.4 lb	6.45 lb	169%

Participant Comments:

“I feel so much better; my legs are stronger so they are not aching and sore everyday.”

“The best thing about this class is I know I can keep it up—no special clothes—inexpensive equipment. I can do it at home.”

“Thanks to the class I can now lift the bags of dog food from the car and the water softener salt. I feel so proud of myself and so self-sufficient now.”



For More Information

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