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Effects of a long-term university exercise program on physical activity in previously sedentary individuals

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Purpose: To explore the health-related and physical effects (via an accelerometer) of a 16-month group exercise program among previously sedentary individuals.

Methods: 150 individuals were engaged in a faculty staff exercise program, however complete data is only available for the purpose of this analysis on 18 individuals. Therefore, we analyzed the data of 18 faculties and staff aged 52.9±6.2 years who participated in 16 months of supervised group exercise. These individuals participated in group exercise three times per week for 60 min. Participants self-selected into supervised exercise classes offered with an emphasis on aerobic fitness. Pre and post-testing variables measures included body weight, body fat percent, resting heart rate, curl-ups and sit-and-reach.

Results: There was a significant decrease ($p<0.001$) in body weight from pre (89.4±19.4 kg) to post testing (87.4±1705 kg). Percent body fat revealed a significant decrease ($p<0.001$) from pre (37.5±6.8) to post (30.3±6.5). Resting heart rate demonstrated a significant decrease ($p=0.011$) from pre (76±11bpm) to post (71±8 bpm). There was a significant improvement in the amount of curl-ups in one min ($p=0.039$) from pre (32.8±10.9) to post (44.8±20.5) test. There was a significant gain in flexibility measured by the sit-and-reach ($p<0.001$) from pre (24.0±9.8) to post (28.5±9.0) test. Of the 11 individuals that regularly wore the MOVband an average of 36.12 miles per week were recorded over the 16 month exercise program (n=11).

Conclusion: Participation in the 16 month university group exercise program reduced body weight, percent body fat, and resting heart rate and improved the number of curl-ups and flexibility in previously sedentary individuals. Physical activity levels met the American College of Sports Medicine recommendations of 35 miles per week in the individuals that wore the MOVband. This investigation demonstrates that an on-site supervised exercise program among previously sedentary individuals is beneficial. Future research is needed to evaluate the long term effects of increasing the exercise duration and compliance in this population.

Biography

Ellen L Glickman is a recognized expert in the area of environmental physiology with ~76 original, full-length papers in scientific journals, 3 technical reports and 1 book chapter. She is a Fellow of the American College of Sports Medicine, a reviewer for many of the top journals in her field, including Medicine in Science and Sport and Exercise, European Journal of Applied Physiology and Occupational Physiology and Aviation Space and Environmental Medicine. She has been an invited lecturer at numerous national and international conferences and universities. In 2001, The Wilderness Medical Society felicitated her with a Research Award as an outstanding scientist. Most recently, she has partnered with Orbital Research Inc., (Cleveland, OH) a STEM initiative, to enhance knowledge in the area of environmental physiology with technology to better understand human physiology. She started at USARIEM as a National Research Council Scientist and continues to serve as a contract employee with USARIEM as part of the Military Nutrition Division. Finally, she has been Principal Investigator or Co-Investigator on numerous externally funded projects during her time at Kent State University. She has served as Interim Associate Dean of Graduate Studies, at Kent State University.

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