Alterations in Physical Fitness of Medical Students during Their First 2 Years

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Background: Medical school is a very stressful pursuit that may cause considerable alteration in personal lifestyle choices. Previous investigations have shown unsatisfactory changes in various physical and psychological performances of medical students. Noteworthy among these changes may be losses in fitness, which could impact their health in later life.

Purpose: To evaluate the changes in physical fitness parameters before and after the first 2 years of medical school course work.

Methods: Male (n = 30, age = 23.8 ± 1.8 y) and female (n = 22, age = 23.5 ± 2.5 y) medical students enrolled at an osteopathic medical school performed selected physical fitness tests during their first quarter of enrollment and at completion of the first 2 years. The tests included aerobic (predicted VO₂max), strength (grip strengths), body composition (skinfold testing, weight, waist:hip ratio and BMI), and muscular endurance (YMCA bench press test and abdominal curls.) Throughout their didactic work students had access to a fully equipped training facility 18 hrs/day with unlimited access to instructor-lead classes and personal fitness tutors.

Results: Men had a significant increase in waist:hip ratio (2.0 ± 3.0%) and decrease in grip strength (2.4 ± 6.6%). Nonsignificant changes in other variables ranged from -1.0% to 6.6%. Women had a significant decreases in body mass (-2.0 ± 4.7%), BMI (-2.9 ± 4.6%), waist:hip ratio (-3.6 ± 7.3%), %fat (-1.2 ± 2.7%), and bench press repetitions (-9.0 ± 8.7%). Significant variable x gender interactions indicated that men increased in body mass, BMI, waist:hip ratio, and bench press repetitions, while women decreased in each of those variables.

Conclusion: Medical school appears to reduce fitness parameters more in men than in women. Negative trends in body composition would suggest that men entering the medical profession are more likely to encounter reductions in healthy lifestyles to a greater extent than women. Further study may need to focus on the intensity, frequency, duration, and mode of exercise utilized by medical students as well as dietary habits that might accompany the intense academic demands.

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Key words: