

## The Effects of Gender and Health Related Fitness Components on Body Mass Index, Body Fat and Blood Pressure in Kinesiology Students

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### ABSTRACT

**BACKGROUND AND PURPOSE:** Many Americans do not meet the minimum standards of physical activity required to maintain a healthy lifestyle. The purpose of this study was to determine the prevalence of poor health related fitness outcomes among college age kinesiology majors.

**METHODS:** Health related fitness (HRF) measurements were taken on 93 undergraduate Tarleton kinesiology majors. These measures included body composition, blood pressure, cardiorespiratory endurance (1.5 mile time), flexibility (sit-n-reach), and muscular strength and endurance. One and half mile run, sit ups, bench press, leg press, and the sit and reach were administered and ranked according to ACSM Guidelines (8<sup>th</sup> ed). Body composition was measured with a three-site skinfold measurement (females: tricep, suprailiac, thigh; males: chest, abdomen, thigh) using a Lange caliper. Height and weight were measured using a medical grade Detecto<sup>®</sup> scale (Webb City, MO). Blood Pressure was measured using a standard sphygmomanometer and stethoscope. Differences in HRF outcomes were analyzed using independent t-tests with significance set at  $p < 0.05$ .

**RESULTS:** Resulting HRF scores separated by gender are displayed in the attached table. No significant differences in fitness ranking existed for 1.5 mile run, flexibility, or upper body strength. According to the ACSM's percentile rankings for percent body fat, males ranked significantly higher than females ( $M=48.0 \pm 36.7\%$ ;  $F=31.4 \pm 25.3\%$ ;  $p=0.0001$ ). However, females ranked significantly higher in lower body strength ( $F=61.4 \pm 28.6\%$ ;  $M=51.1 \pm 33.3\%$ ;  $p=0.04$ ) and sit ups ( $F=66.3 \pm 30.0\%$ ;  $M=54.7 \pm 37.6\%$ ;  $p=0.007$ ).

Health Related Fitness Scores Among Undergraduate Kinesiology Majors

Student Characteristics	Males	Females
Gender (N)	42	51
Age (years)	20.6 ± 20.6	19.9 ± 1.5
BMI (kg/m <sup>2</sup> )	27.3 ± 5.7	23.9 ± 4.3
% Body Fat	13.7 ± 1.2	25.1 ± 1.0
1.5 Mile Run (min:sec)	11:25 ± 1:11	13:23 ± 1:34
Sit & Reach (in)	18.7 ± 2.3	21.0 ± 2.1
Bench Press Ratio (lift/wt)	0.9 ± 0.5	0.5 ± 0.3
Leg Press Ratio (lift/wt)	1.6 ± 0.9	1.5 ± 0.4
Sit ups (1 min)	48.5 ± 8.5	44.6 ± 9.4

**DISCUSSION:** Overall females ranked higher than males on the health related fitness outcomes. The extent to which these results were based on gender differences in exercise training or central motivation is

unknown. Future investigations will focus on health and physical activity habits between genders, as well as differences in internal motivation.

