Cardiovascular Endurance Among College Students: How is it Related to Overall Fitness?

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PURPOSE: To determine the relationship between cardiovascular endurance and other fitness measures among college students. **METHODS:** A convenience sample of 364 college students (43% females, 57% males; average age 21.84 *SD= 4.22)* participated in a free fitness assessment between the 2012 and 2015 academic years. The students performed a battery of standardized physical fitness tests which included the Cooper 12-minute run/walk test, maximal volitional push-up and abdominal curl-up tests, YMCA sit-and-reach test, and gender-specific 3-site skinfold measurements. Pearson's correlation coefficient was used to examine correlations between cardiovascular endurance (VO_{2max}), percent body fat, muscular endurance, and flexibility. **RESULTS:** The analysis showed a slight negative correlation between VO_{2max} and percent body fat (r = -.208, p<.001). Additionally, the data revealed a positive correlation between VO_{2max} and muscular endurance for push-ups (r =.224, p<.001) and curl-ups (r =.208, p<.001) performed. However, no correlation was found between VO_{2max} and flexibility (r = -.045, p =.395). Percent body fat was found to have a significant inverse relationship with muscular endurance (r =-.504, p<.001; push-ups) (r =-.258, p<.001; curl-ups), as well as with flexibility (r = .138, p=.009). **CONCLUSION:** The results of this study emphasize the role of overall muscular fitness and a healthy body fat percentage related to cardiovascular endurance. By including exercises to increase overall muscular fitness and decrease body fat percentage, cardiovascular endurance can be improved, thus decreasing morbidity and mortality.

Correlations				
	Push-ups	**Curl-ups**	**YMCA sit-and-reach (inches)**	**% Body Fat**
VO_{2max} (ml/kg/min)	**r = .224** p < .001**	**r =.208** p < .001**	**r = - .045** p = 0.395	**r = -.208** p < .001**