

Effects of different resistance exercises on serum cholesterol among college students

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■ ABSTRACT

Different resistance exercise is gaining broad acceptance as a complement to prevention of cardiovascular risk factors. This article reviews the most current and reliable literature regarding the biological mechanisms for college women subjects. Forty bachelor of physical education female students ($n=40$) were randomly selected as subjects and their age ranged between 20 and 24 years. The selected subjects were randomly assigned into two equal groups such as experimental group (EG) and control group (CG) with twenty subjects each ($n=20$). The experimental groups underwent their respective experimental treatment for twelve weeks three days per week and a session on each day. Control group was not exposed to any specific training apart from their curriculum. Serum cholesterol was taken as variable for this investigation. Analysis of covariance (ANCOVA) was used to analyze the collected data. The results revealed that the experimental group (EG) produced significant improvement ($p = 0.05$) due to resistance training on serum cholesterol when compared to control group (CG).

■ **Key Words** : Resistance exercise, Total cholesterol

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Resistance training has become the most widely accepted method for improving muscular strength and power (Kraemer, 1994). The adaptational changes and health implications of resistance exercise are very dynamic and variable to each individual. Youth sports have become more popular and in many ways, more competitive. Many young athletes and parents are seeking way to achieve a competitive edge. Many precious studies have explored the effect of different resistance training frequencies on developing muscle strength and size of adolescents (American College of Sports Medicine, 2000). Resistance training may be isotonic in design. This means that some part of the body is moving against some type of force. Heart rate is acutely elevated immediately following a workout and affected by the amount of resistance, the number of repetitions and the muscle mass involved in the contraction (Fleck, 1988).

Serum cholesterol is the sum of all the cholesterol in the

blood. It is used to produce hormones and cell membranes and is transported in the blood plasma of all mammals (Emma, 2009). It is a waxy steroid of fat that is produced in the liver or intestines. In addition, cholesterol is an important component for the manufacture of bile acids, steroid hormones, and vitamin D. Cholesterol is an important and necessary for mammals, high levels of cholesterol in the blood can damage arteries and are potentially linked to diseases such as those associated with the cardiovascular system (Pearson *et al.*, 2003). The liver is the major production factory for cholesterol (about 70%). High cholesterol levels are strong indicators of those individuals that are prone to coronary heart disease (Olson, 1998). Elevated total cholesterol is a risk factor for coronary heart disease. The build-up of plaque in the artery may lead to narrowing (high blood pressure) or complete blockage (heart attack) of the vessel (Tymoczko *et al.*, 2002). As levels rise above 180 mg/dl, the risk for developing coronary