

The effect of hula-hoop exercise in decreasing serum cholesterol and serum triglyceride level in Damnoensaduak hospital personnel

Juntima Sintoppan^a. Dr. Werner Kurochaka MD.^b

^aMaster degree's student. ^bLecturer

School of Anti Aging and Regenerative Medicine, Mae Fah Laung University

Abstract

To study the effects of 12 weeks Hula-hoop programme on lipid profile in healthy person. Fifty persons women (90%) took part in the study. Subjects were randomly assigned to either a non-exercising control group or Hula-hoop exercise group. The Hula-hoop exercise group took part in 5 times a week, 30 minutes each section in 3 to 5 pm. in Monday to Friday for 12 weeks long. The control group did not take part in any structured physical activity. The same group, before & after the Experiment used Pair T-test for analyze and the comparison between each group at week 0,6,12 used Independent T-test. The serum Lipid Profile was changed in Experiment group. There were significant ($p < 0.05$) decreases in serum Total Cholesterol, Triglyceride and LDL Cholesterol as well as a significant ($p < 0.05$) increase in serum HDL Cholesterol. No changes were found in any of the measured variables in the Control group. These findings suggest that The Hula-hoop exercise has a favourable effect on lipid profile in healthy person.

Objective : To study the effect of 12 weeks Hula-hooping exercise programme on lipid profile in health person.

Method : Researcher randomize the sample from Damnoensaduak hospital personnel 50 persons into 2 groups. Conduct a meeting to describe the research and explain how to exercise with hula-hoop and lifestyle modification. Then conduct the exercise in experiment group with Hula-hoop 5 times a week, 30 minutes each section in 3 to 5 pm. in Monday to Friday for 12 weeks long. Collected serum Lipid Profile in every subjects at week 0, 6 and 12.

Result : The serum Lipid Profile was changed in Experiment group. There were significant ($p < 0.05$) decreases in serum Total Cholesterol, Triglyceride and LDL Cholesterol as well as a significant ($p < 0.05$) increase in serum HDL Cholesterol. No changes were found in any of the measured variables in the Control group.

Conclusion : These findings suggest that the Hula-hoop exercise has a favourable effect on lipid profile in healthy persons.

Keywords : Hula-hooping exercise, Total Cholesterol, Triglyceride, LDL Cholesterol, HDL Cholesterol

Introduction

Research Background

Exercise situation in Thai Population age 15 and above, which were introduced by department of public health, division of exercise promotion and Abac-Ksc internet poll institute., Assumption University in B.E. 2547 to 2550 and B.E. 2552 for year 2551 , public health research bureau was demonstrated the population health survey by general health examination by using a WHO GPAQ (Global Physical Activity Questionnaires) interview reported that the exercise of Thai population still in low level.

Physical Activity means moving action of the parts of a body from action of skeletal muscle which will increase energy consumption from the resting state. The exercise and be categorized into 4 categories as occupational activity, household activity, transportation and leisure time activity ; recreational activity, competitive sports, exercise/exercise training.

Hyperlipidemia is a well documented risk factor for cardiovascular disease and is the leading cause of death in men and women. The perspective of Anti Aging and regenerative medicine, exercise is one of the most importantly factors in Anti Aging procedure , stimulated hormonal system, blood circulation, nervous and bone systems . We are intended to study the way of exercise that easy for application for ever gender and ages with low cost. That will make the major population can be able to exercise for changing their lipid profile, which was the marker of inflammation that induce to cardiovascular disease. Researcher found that Hula-hoop exercise can be the exercise that could decrease serum lipid profile efficiently.

Research objective

To study of Hula-hooping exercise in decreasing serum Total Cholesterol, Triglyceride, LDL Cholesterol and increasing the HDL Cholesterol.

Materials and Methods

Research Population

We randomize the sample from Damnoensaduak hospital personnel 50 male and female age between 20-55 years old and lipid profile level are Total Cholesterol = 200-239 mg/dl, LDL Cholesterol = 100-159 mg /dl, HDL Cholesterol < 40 mg/dl in women and < 50 mg/dl in men and Triglyceride = 150-199 mg/dl. Healthy individual without any clinical sign of any disease that could not exercise. The subjects understand in protocol and sign in the acceptance form.

Material

The Hula- hoop and questionnaire.

Method

Subject will be divide into two groups, 25 for control group and 25 for experiment group. Conduct a meeting to describe the research and explain how to exercise with hula-hoop and lifestyle modification. Then conduct the exercise in experiment group with Hula-hoop

5 times a week, 30 minutes each section in 3 to 5 pm. in Monday to Friday for 12 weeks long. Collected serum Lipid Profile in every subjects at week 0, 6 and 12.

Data analysis

The data will be statistically analysis by SPSS version 20 with Pair T-test in each group and the comparison between experiment and control group used Independent T-test.

Result

Table 1 Effect 12 weeks of Hula-hoop exercise on Lipid Profile. Results are shown as Mean (SD)

Variable	Week 0	Week 12	% change	p-value
Total Cholesterol (mg/dl)				
Experiment group	227.60(15.74)	203.36(14.06)	11↓	<0.05
Control group	235.76(27.79)	237.60(27.12)	0.78↑	
Triglyceride (mg/dl)				
Experiment group	187.68(31.93)	170.20(31.37)	9↓	<0.05
Control group	174.40(36.79)	175.96(35.97)	0.89↑	
LDL Cholesterol (mg/dl)				
Experiment group	146.72(17.41)	135.92(18.45)	7↓	<0.05
Control group	157.48(24.07)	157.68(22.74)	0.13↑	
HDL Cholesterol (mg/dl)				
Experiment group	39.28(4.62)	43.16(4.82)	10↑	<0.05
Control group	38.16(5.65)	38.32(5.56)	0.42↑	

Discussion

The key finding of this study was that 12 weeks of Hula-hoop exercise significantly decreases serum Total Cholesterol, Triglyceride and LDL Cholesterol as well as a significantly increase in serum HDL Cholesterol. No changes were found in any of the measured variables in the Control group. This finding is in agreement with report of Aerobic exercise and the lipid profile in type 1 diabetic men : a randomized controlled trial, (LAAKSONEN David E. ; ATALAY Mustafa ; NISKANEN Leo K. ; MUSTONEN Juha ; SEN Chandan K. ; LAKKA Timo A. ; UUSITUPA Matti I. J.) The Hula-hoop exercise is exercise that “easy” for gender, ages, low cost and can change lipid profile that are the marker of inflammation.

References

1. <http://www.madehow.com/Volume-6/Hula-Hoop.html>
2. <http://lifestyle.iloveindia.com/lounge/hula-hoop-benefits-12738.html>
3. <http://weighted-hula-hoop.com/benefits-of-hula-hooping/>
4. <http://www.hookedonhooping.com/hookedonhooping/benefits+of+hooping/default.asp>
5. <http://www.acefitness.org/certifiednewsarticle/1094/>
6. <http://www.livestrong.com/article/16471-use-hula-hoops-exercise/#ixzz1XLjDRzIV>
7. <http://www.wikihow.com/Hula-Hoop>
8. <http://www.eufic.org/article/en/expid/Types-of-exercise/>
9. <http://www.betterhealth.vic.gov.au>
10. <http://cat.inist.fr/?aModele=afficheN&cpsidt=1523540>
11. <http://www.msscenershop.info/content/33/3/190.abstract>
12. http://journals.lww.com/acsm-msse/abstract/1993/06000/relationship_of_physical_activity,_body_fat,_diet,.16.aspx