



THE EFFECT OF CRYOLIPOLYSIS IN BACK LORDOSIS AND WHR IN OVERWEIGHT WOMEN

Marzieh Soleimani¹ and Bijan Goodarzi²

¹Department of Physical Education and Sports Science, Borujerd branch, Islamic Azad University, Borujerd.Iran

²Assistant Professor and faculty member, Department of Physical Education and Sports Science, Borujerd branch, Islamic Azad University, Borujerd.Iran.

ABSTRACT

The present study aimed to reduce back lordosis and WHR in overweight women with Cryolipolysis device. 20 woman with high back lordosis randomly divided into two groups of controls and experimental groups. The study population number of women have abdominal fat above referred to the center of the Iranian Cryolipolysis who were the possible application of the non-voluntary sampling, the questionnaire and WHR test and lordosis angle collected in two groups as pretest. Cryolipolysis was applied for experimental group after 8 weeks data collected as post test and using independent t-test and SPSS for data analysis. the results of this study showed that the use of Cryolipolysis devices leads to reduced lordosis and WHR in women have abdominal fat.



KEYWORDS: Cryolipolysis, WHR, lordosis, abdominal fat, overweight women.

INTRODUCTION :

The prevalence of overweight has been increasing steadily in most human societies, and it gradually becomes an epidemic. Modern urban communities, especially communities have a significant impact on the behavior of our food. Today, more food available than in the past and the people can eat a variety of prepared foods in most stores. This causes more people become overweight and obese and also the weight of abdomen fat and high degree waist to hip ratio causes back lordosis. In our new world knowledge help us to solve problem such as extra fat in our body. Cryolipolysis is a non-invasive method uses cold to destroy fat cells without damage to other tissues of the body (Shahrjerdi et al., 1393).waist-to-hip ratio (WHR) confirming normal abdominal fat (Kelishadi et al., 1392).also research shows that abdomen fat could be able to increase back lordosis (Castillo, 2015).

RESEARCH METHODOLOGY:

This quasi-experimental study with pre-test and post-test analysis cryolipolysis effect in reducing back lordosis in women with abdominal fat. After complete description of the study to the subjects participating in the study, personal information including weight, age, abdominal fat mass, waist-to-hip ratio and body mass index back lordosis angle was collected. Cryolipolysis group once apply in abdomen area and after 8

weeks once again collecting data in both groups.

RESULTS:

After used Cryolipolysis machine in women with abdominal fat and high lordosis angle significant reducing in whr was seen.

Table1:Whr and Lordosis angle change during pre to post test in both group

standard error	Standard deviation	Number	Average WHR	Test	
0.007	0.02	10	0.843	pre-test	Experiment
0.012	0.04	10	0.791	Post-test	
0.009	0.028	10	0.844	pre-test	Control
0.008	0.025	10	0.845	Post-test	

standard error	Standard deviation	Number	Average Lordosis	Test	
1.59	5.03	10	36.3	pre-test	Experiment
1.28	4.06	10	34.4	Post-test	
1.40	4.44	10	35.67	pre-test	Control
1.26	4.00	10	35.68	Post-test	

According to the table1, we can see that the average whr after pre to post test has decreased significantly as well as change in lordosis angle (0.005).

Table2: Whr and Lordosis angle correlation test an experimental group:

The significance level (p)	Correlation ®	Whr
0.002	0/848	Experiment
The significance level (p)	Correlation ®	Lordosis
0.000	0/917	Experiment

Pearson correlation test between pre-test and post-test measurements (whr) (R = 0.848) and Lordosis angle change (R = 0.917) was (almost a perfect correlation) and significant level of less than 0.05. The results show the positive impact of cryolipolysis on the reduction of (WHR) and lordosis angle in the experimental group.

CONCLUSIONS:

According to the findings ,significant change in the level of the lordosis angle in experimental group. It can be concluded that the average reduction in the experimental could be due to the use of the Cryolipolysis device. Lordosis related with body mass index and abdominal obesity and weight, and cryolipolysis in this research leads to a reduction of lordosis in women with abdominal fat. the results of the study Shrjisy ,Bahrami et al. (2009) that reduced abdominal fat has an impact on the reduction of lordosis,also Askndyr (2007) showed a relationship between the reduction of lordosis and body fat, and

also Shahrjerdi (2012) conducted physical exercises reduce fat as well as the lordosis.

According to the most significant level of 0.05 ,As a result between the use of Cryolipolysis devices and reduce abdominal whr in overweight women (WHR) , we could say Cryolipolysis devices was significant effect in reducing WHR in overweight women . According to the resalts, cryolipolysis reduced fat under the skin in the abdomen, and no damage to the skin and liver function so the results of the Zlykson (2009) that showed cryolipolysis procedure without harm to the skin during the two months using this device decrease abdominal fat in obese women with peripheral sensory nerve function was irreversible, Also Coleman (2009) in his study conducted cryolipolysis method significantly reduces subcutaneous fat, without damaging to the blood fat levels And Klein (2009) shows the use of cryolipolysis for intra-abdominal fat loss and changes in serum lipid to reduce abdominal fat to be consistent

SOURCES :

- 1.Baum, J. I., Gray, M., Binns, A. (2015). Breakfasts Higher in Protein Increase Postprandial Energy Expenditure, Increase Fat Oxidation, and Reduce Hunger in Overweight Children from 8 to 12 Years of Age. *The Journal of nutrition*, jn214551.
- 2.Castillo, E. R., Sang, M., Sigei, T., Ojiambo, R., Pitsiladis, Y., Lieberman, D. E. (2014, March). Effects of physical activity on sex differences in lumbar lordosis development in rural and urban Kenyan populations. In *AMERICAN JOURNAL OF PHYSICAL ANTHROPOLOGY* (Vol. 153, pp. 92-92). 111 RIVER ST, HOBOKEN 07030-5774, NJ USA: WILEY-BLACKWELL.
- 3.Celli BR, Cote CG, Marin JM, et al. The body-mass index, airflow obstruction, dyspnea, and exercise capacity index in chronic obstructive pulmonary disease. *NEngl J Med* 2004; 350: 1005-1112.
- 4.Cserjesi R, Luminet O, Poncelet AS, Lenard L. Altered executive function in obesity. Exploration of the role of affective states on cognitive abilities. *Appetite*. 2009; 52: 535-539.
- 5.Herman, K. M., Carver, T. E., Christou, N. V., Andersen, R. E. (2014). Keeping the Weight Off: Physical Activity, Sitting Time, and Weight Loss Maintenance in Bariatric Surgery Patients 2 to 16 Years Postsurgery. *Obesity surgery*, 24(7), 1064-1072.
- 6.Hirshleifer, D. (2014). Editorial: Cosmetic Surgery in the Academic Review Process. *Review of Financial Studies*, hhu093.
- 7.Jaacks, L. M., Slining, M. M., Popkin, B. M. (2015). Recent trends in the prevalence of under-and overweight among adolescent girls in low-and middle-income countries. *Pediatric obesity*.
- 8.Kelishadi, Roya; Hashemipoor, Mahin; Ziaee, Mozhde; Ghatrehsamani, Shohreh; Poursafa, Parinaz; Khavarian, Nooshin (9213) "Comparison of dietary and physical activity patterns among obese children and adolescents with and without metabolic syndrome" *scientific Journal of Kurdistan University of Medical Sciences*, Volume 15, Issue 1, pp. 36-45.
- 9.Lazzeri, G., Rossi, F., Pammolli, A., Pilato, V., Pozzi, T., Giacchi, M. V. (2015). Underweight and overweight among children and adolescents in Tuscany (Italy). Prevalence and short-term trends. *Journal of preventive medicine and hygiene*, 49(1).
- 10.Lonner, B. S., Toombs, C. S., Husain, Q. M., Sponseller, P., Shufflebarger, H., Shah, S. A., Newton, P. O. (2015). Body Mass Index in Adolescent Spinal Deformity: Comparison of Scheuermann's Kyphosis, Adolescent Idiopathic Scoliosis, and Normal Controls. *Spine Deformity*, 3(4), 318-326.
- 11.Malin, S. K., Samat, A., Wolski, K., Abood, B., Pothier, C. E., Bhatt, D. L., Kashyap, S. R. (2014). Improved acylated ghrelin suppression at 2 years in obese patients with type 2 diabetes: effects of bariatric surgery vs standard medical therapy. *International Journal of Obesity*, 38(3), 364-370.
- 12.Parker, K., Mitchell, S., O'Brien, P., Brennan, L. (2015). Psychometric Evaluation of Disordered Eating Measures in Bariatric Surgery Candidates. *Obesity surgery*, 1-13.

13. Sekendiz B, Altunm O, Korkusuz F, Akin S. Effect of Pilates exercise on trunk strength, endurance and flexibility in sedentary adult females. *J Body Mov Therapies*. 2007; 84(1):209-38.
14. Sharp, G., Tiggemann, M., Mattiske, J. (2014). The role of media and peer influences in Australian women's attitudes towards cosmetic surgery. *Body image*, 11(4), 482-487.
15. Shahrjerdi, Shahnaz; Golpaegani, Masoud; Daghighzadeh Abbas, Karami, Asieh (2012) "Effects of Pilates exercise on pain, function and angle of back lordosis in women with nonspecific chronic low back pain and hyper-lordosis" *Journal of University medical sciences*. 22 (94): 120-131
16. Wang, J. C. (2015). The Evolution of the Global Spine Journal. *Global spine journal*, 5(1), 1.
17. Zelickson, B. D., Burns, A. J., Kilmer, S. L. (2015). Cryolipolysis for safe and effective inner thigh fat reduction. *Lasers in surgery and medicine*, 47(2), 120-127.