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## ❖ KINETOTHERAPY

# THE EFFECT OF EXERCISE FOR EIGHT WEEKS ON POSTURAL DEFECTS İN FEMALE'S

**ARSLAN FATMA[1], YALÇIN KAYA[2]**
[1] Gazi University Physical Education and Sports High School, Health Sciences İnstitution, Ankara/TURKEY
[2]Selcuk University Physical Education and Sports High School, Konya/TURKEY

**ABSTRACT**

**Objective:** this research has been made to analyse the efect of exercise on postural physique in Konya. In this research; 35 women who are between 20 and 40 and have not been interested in sport and are chosen with random sampling method, are used.

**Method:** the hypertrophic measures of women has been taken by using accurate tape measure and glass plaque has been used to analyse posture. After analysing anomanies in anatomics of participans, the reformatory exercise protocol has been prepared and put into practise for 8 weeks. On the evaluation of data, SPSS (statistical package for social sciences) packet programme hes been used and by applying paried sample t test, the measures that are taken before and after exercise have been compared.

**Results:** while the average of sitlional width was 44,77≠3,65 before exercise , it has become 43,52≠3,47 after exercise. While the average of Bithorachonterik width was 29,3≠3,2 before exercise, it has become 26,67≠3,27 after exercise. While the average of abdominal width was 18,64≠4,14 before exercise, it has become 18,01≠6,27 after the exercise. While the average of the extensive hip area was 78,05≠6,01, it has become 94,29≠5,64. while the average of abdominal area was 93,97≠8,91 before exercise, it has become 90,82≠8,24 after the exercise. The results are expressive statistically.($p<0,05$)

**Discussions and Conclusion:** some differences which are apt to characteristic of exercises, in muscles have been seen.With the conscious and regular exercises, both adscititious weights are losen and also these anomalies are reduced at the result of the exercise protocol for eight weeks.Moreover, if they attempt more,the anomalies can disappear.

**Key Words:** exercise, posture, women.

**Introduction** Posture is the pose shape of body parts with each other.It is also component of all parts at any time (F. P. Kendall, E.K. Mc Ceary, P. G. Provance, 1993). Posture is related not only with normal or pathology but also with gravity (A. Livanelioğlu, S. Otman, 1994).

Genetic, Anatomical, Physiological, Cultural, Peripheral,Vocational, Technological and Emotional State affects posture.Furthermore, clothing,nutrition and gender can affect posture. The most important matter is postural mistake that occurs at the result of false habits and philistinism (B. Leveau, Berndehart, 1984, N. Teymori, 1992, R. Cailliet, 1992).

Ligaments and muscles must be in balance for correct posture.The imbalance in disordered posture causes pain with tiresome, assymmetry in skeleton and nociceptive alerts.(pressure on definite nevre fibres). Weight diffuses to all parts of the body,shock is absorbed,explicitness of action is kept ande necessary actions for stability and mobility are controlled independently with the correct posture (J. Seghers, A. Jochem, A. Shaepen, 2003).

The aim of this research is to search the local and total structural changes in women who go to gyms to lose weight, at the result of the exercise protocol that is perpared apt to their individual states.

**Method And Procedures**

Women,between 20-40 ages,participated to the research volunteerly in Konya.They have not been interested in sports before and they were chosen with sample method.The hypertrophic measures of women were taken by using accurate tape measure and glass plaque were used to analyse posture. In the light of the data, each participant put into practice the exercise for eight weeks that is prepared for their postural structure and according to intensity of structural anomaly. The eight weeks' exercise is three days in a week and it is from easy to hard.

In the evaluation of data SPSS (statistical package for social sciences) package programme is used and by applying paried sample t test measures taht are taken before and after the exercises have been compared.

## Results

**Table 1:**The Average of Women's Width and Height Measurements before and after Exercise and Statistical Values

| | N = 35 | SD | Before exercise X ±Ss | SD | After exercise X ±Ss | Difference | t | P |
|---|---|---|---|---|---|---|---|---|
| 1 | Height | 3 | 1,61±5,43 | 3 | 1,61±5,43 | 0,00 | 1,00 | 0,324 |
| 2 | Weight | 5 | 64,36±10,32 | 5 | 61,12±9,93 | 3,24 | 1,43 | 0,160 |
| 3 | Width of hip | 3 | 34,10±3,03 | 3 | 32,04±2,84 | 2,06 | 0,94 | 0,353 |
| 4 | Olecrenal width | 3 | 42,34±3,73 | 3 | 41,05±3,32 | 1,29 | 0,00 | 1,000 |
| 5 | Sıtlıonel width | 3 | 44,77±3,65 | 3 | 43,52±3,47 | 1,25 | 10,27 | 0,000* |
| 6 | Caput fibular width | 2 | 24,55±2,15 | 2 | 23,58±1,99 | 0,97 | 2,38 | 0,023* |
| 7 | Bıthorachanteric width | 3 | 29,3±3,12 | 3 | 26,67±3,27 | 2,63 | 4,01 | 0,000* |
| 8 | Abdominalwidth | 2 | 18,64±4,14 | 2 | 18,01±6,27 | 0,63 | 7,21 | 0,000* |
| 9 | Abdominal depth | 2 | 22,97±3,68 | 2 | 20,55±3,44 | 2,42 | 0,00 | 1,000 |
| 10 | Distancebetween malleols | 1 | 16,98±1,62 | 1 | 16,70±1,64 | 0,28 | 3,94 | 0,000* |
| 11 | Distancebetween first metatorcells | 2 | 15,80±1,54 | 2 | 15,62±1,58 | 0,18 | 2,095 | 0,044 |

**Table 2:** Women's Hypertrophic Measurements Values Before and after the Exercise

| N = 35 | | SD | Before exercise X ±Ss | SD | After exercise X ±Ss | Difference | t | P |
|---|---|---|---|---|---|---|---|---|
| 1 | Average of femur zone | 3 | 55,35±3,96 | 3 | 52,98±3,83 | 2,37 | -1,40 | 0,169 |
| 2 | Average of tibia zone left | 2 | 35,35±2,98 | 2 | 34,64±2,84 | 0,71 | -0,29 | 0,768 |
| 3 | Average of tibia zone right | 2 | 35,97±2,89 | 2 | 34,77±2,79 | 1,2 | 0,57 | 0,571 |
| 4 | Widest hip zone. | 3 | 98,05±6,06 | 3 | 94,92±5,64 | 3,13 | 5,56 | 0,000* |
| 5 | Crotch zone left | 3 | 62,22±5,15 | 3 | 60,11±4,85 | 2,11 | 1,07 | 0,292 |
| 6 | Crotch zone right | 3 | 62,21±5,52 | 3 | 60,27±4,80 | 1,94 | -4,36 | 0,000* |
| 7 | Knee zone left | 2 | 37,28±2,76 | 2 | 36,37±2,69 | 0,91 | -1,35 | 0,183 |
| 8 | Knee zone right | 2 | 37,45±3,11 | 2 | 36,47±2,65 | 0,98 | 2,91 | 0,006* |
| 9 | Abdominal zone | 3 | 93,97±8,91 | 3 | 90,82±8,24 | 3,15 | -7,93 | 0,000* |
| 10 | Intra mamills zone | 3 | 91,28±7,68 | 3 | 89,11±7,30 | 2,17 | -0,42 | 0,676 |
| 11 | Hip zone | 4 | 104,02±7,95 | 4 | 100,58±7,38 | 3,44 | 1,97 | 0,057 |
| 12 | Breast zone | 2 | 78,98±8,06 | 2 | 77,28±7,29 | 1,7 | 5,38 | 0,000* |

*P<0.005

**Discussion**

In this study, at the result of the exercise protocol, according to Table 1; while the average values of body weight before exercise was 48,00±92,00, after exercise it has become 46,00±88,00 and the odds is 3,24 kg.Although there is a definite difference between the averages, the result is found meaningless statistically.p>0.005. It is thought that the reduction of difference between the averages represents the reduction of the rate of lipid in the body and the lose of weight thanks to exercise.It is told that while the rate of lipid in the body is reducing with exercise, the mass of muscles that occurs as a result of hypertrophe, increases(Y. Kaya, 2003).

In Table 1, while the Sitlional width measures of subjects was 44,77±3,65 before the exercise,it has become 43,52±3,47 and the odds is 1.25 cm.It is seen that results are expressive (p<0,005). The difference between the findings is suitable with the study of Kaya (1991) and it is thought that the reductions result from the adductor's closing up to the upper extremite to the body (Y. Kaya, 2001).

When we look at the averages of Bithorachanteric width, while they were 29,3±3,12 before the exercise, they have become 26,67±3,27 and the odds is 2,63 (Table 1). The results look expressive statistically. (p<0,05).It is thought that the reduction of Bithorachanteric width results from the reduction of soft fibres like lipid on trochanter majors.

In Table 2, it is seen that while the average of the widest hip zone was 98,05±6,06 before practice, it has become 94,92±5,64 and the odds is 3,13. The results are important stastically. (p<0,05). It is defined that since the most convenient zone which lipid fibres maximal occurs in women,at the same time because of exercise, hypertrophe can ocur and lipid fibres can turn into muscle fibres and the practice increases effiency. Leon et all. (2007), have determined that at the researches on sedentary women and the ones who are not interested in sports there is an essential and statistical difference in hip width before and after exercise. It shows parallelism with the study.

InTable 2, the average of crotch zone,leg zone right before exercise was 62,21±5,52. After the exercise, it has become 60,27±4,80 and the odds is 1,94. It is expressive statistically(p<0,05). The hypertrophic difference in right legs is less than left legs because the right legs are used more in daily life. The hypertrophe in the study and hypodermic lipid fibres' reduction can be related to this.At the same time the right of crotch zone leg zone, is being practiced more, in comparison with the left ones and for this reason it is important statistically.

It is seen clearly that the average of abdominal zone and the breast zone before exercise differentiate with the one after exercise.It is also important statistically (Table 2), (p<0,05).It is thought that the clear difference between the averages and its being important statistically result from subjects' losing weight and slimming after the exercise programme. Melinda et all. (2003) have determined in a research on women that,after the exercise, there are essential differences in the average and the percentage of abdominal zone (L. I. Melinda,Y. Yutaka Y., M. U., Cornelia B. Deborah, E.R. Rebecca, S.S. Robert, A. Michi Erin, D. P. John., A. McTiernan, 2003). They show parallelism with ths study.

**Conclusions**

As a result, when we look at the characteristic structuring of daily actions and most of the hypertrophic findings in the exercise, we see a lot of changes.

It is seen that some differences in muscles ocur apt to charasteristics of each exercise.It is thought that with the exercises that are standardized consciously and done regularly,over weights are losen and in paralel with this ,anomalies can be reduced. As a result of eight weeks' exercise protocol and if it is practiced longer, the anomallies disappear.

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# NEW METHODS OF DATA AQUISITION AND WALKING ANALYSIS IN MULTIPLE SCLEROSIS AFTER FUNCTIONAL ELECTRICAL STIMULATION

**AVRAMESCU ELENA TAINA[1], Professor, MD, Ph.D, NEAMTU MARIUS CRISTIAN [2] Assistent MD, Ph.D student, RUSU LIGIA[1] Professor, MD. Ph.D, MANGRA GABRIEL [1] Lecturer, Ph.D**
[1]University of Craiova, Faculty of Physical Education and Sport, Department of Individual Sports and Medical Sciences
[2]University of Medicine and Pharmacy, Craiova

**ABSTRACT**

In multiple sclerosis the difficulty in walking represents one of the main patients concern. This difficulty is due to the instability of the muscles of the foot to lift it up during the swing phase of walking, known as dropped foot. Different alternatives in the rehabilitation treatment try to improve the walking, but at the present moment, in clinical medicine, scientific quantification and analysis of human walking mechanism is not highly accurate due to the lack of an objective analysis. Progress quantification in walking is essential in evaluation of the efficiency of reabilitation procedures, improvement of these procedures or elaboration of individual models for each patient..

**Purpose**

The purpose of the present research is represented by both the completion of a prospective study regarding efficiency of functional electrical stimulation in walking rehabilitation at patients with multiple sclerosis and the use of last generation non-invasive methods in analyzing and quantifying the results.

**Methods**

The present paper is a case report regarding the results obtained after application of functional electrical stimulation to a patient with multiple sclerosis. Functional electrical stimulation was applyed in order to stimulate muscular groups involved in walking by the use of a 2 channel neurostimulator (O2CHS II). The trigger points choosed for stimulation permitted to obtain dorsiflexion and eversion of the foot, associated with knee flexion. Acquisition and analysis of the data specific to walking (contact pressure, forces. moments) were made by using a pressure plate for static and dynamic measurements (RSSCAN) before and during stimulation.

**Results**

Registered by the pressure plate allowed identification and quantification of improvements of the patient`s walking problems by the use of electrical functional stimulation.

**Conclusions**

Functional electrical stimulation offers an alternative within the rehabilitation treatment in multiple sclerosis, by encouraging active movement of the food and by constantly taking the foot through the full range of movement with walking, and avoiding stiffening up of the ankle. Identification of certain analysis models in walking, will offer a viable instrument in evaluation and treatment of multiple sclerosis and sustainable results on national and international level.

**Key words**: multiple sclerosis, functional electrical stimulation, walking evaluation, plantar pressure

**Introduction**

Multiple sclerosis (MS) is a chronic neurological disease of unknown etiology which affects central nervous system, especially the brain, spine and optic nerves (A. Achiron and Y. Barak, 2000) and is characterised by demyelination of nerve fibers. Among clinical MS symptoms a common one is represented by motor and balance disorders: spasticity, muscular weakness and ataxia, decreased mobility (A.J..Lenman, F.M.Tulley, G. Vrbova et al, 1989). MS evolution is extremely variable and unforeseeable. In the absence of specific treatment, a percent of over 30% of MS patients will develop significant physical disability within 20-25 years since the onset of the disease. After 25 years only 1/3 of the patients are capable of working and 2/3 can walk (K.J. Aronson, 1996). But this prognosis is permanently changing due to the new therapies. Approaches nowadays focuse on the idea that MS treatment does not mean only drug administration, but also kinetotherapy, ergotherapy, consultance and psychological therapy.

MS rehabilitation treatment should focus on encouraging normal movements and functional activities, such as walking, which will facilitate and stimulate balance mechanisms. Unfortunately, as mentioned before, walking is affected in most of MS cases. Consequently, any procedure to improve motor