

AEROPLATES EXERCISE PROGRAM IN OBESITY TREATMENT ¹

OBEZİTE TEDAVİSİNDE AEROPLATES EGZERSİZ PROGRAMI

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Öz: Günümüz sağlık anlayışı, bireyin sağlığını koruyacak, sürdüreceği ve geliştirecek davranışlar kazanması üzerine kurulmuştur. Egzersiz stres düzeyi ayarlanabilen en güçlü ilaçtır. Tanımlayıcı tipteki bu çalışmamız, 1 Ocak 2014 - 31 Aralık 2015 tarihleri arasında Afyonkarahisar Halk Sağlığı Müdürlüğü, Sağlıklı Yaşam Merkezi'ne başvuran 146 hasta üzerinde ve örneklem seçilmeden yapılmıştır. Hastaların sosyo-demografik özellikleri ve antropometrik ölçümleri anket formunda yer almıştır. Araştırmaya katılan bireyler her ay düzenli olarak telefonla kontrole çağırılmıştır. Hastaya verdiğimiz egzersiz reçetesi geri bildirim formları sayesinde hastaların düzenli egzersiz programını uyguladığını bize göstermeleri istenmiştir. Hastaların verdiği kilo ortalaması 12.44±7.58 olarak saptanmıştır. Kişinin fiziksel ve sosyal durumuna uygun, güvenli ve etkin bir egzersiz uygulandığında, multidisipliner yaklaşım kullanarak psikolojik destek sağlandığında hastanın uyumu ve egzersizin sürdürülebilirliği artar. Bu durum kilo kontrolü ve obeziteye bağlı hastalıkların tedavisini olumlu etkiler. Ayrıca, kişiselleştirilmiş, çok amaçlı, değiştirilmiş aero-pilates egzersiz programı, ağırlıklı olarak kilo kaybı, sağlıklı yaşam veya birçok hastalığın tedavisi için yapılan diğer egzersizler ve spor faaliyetlerine alternatif bir teknik olarak düşünülmüştür. Egzersiz bir ilaçtır. Bir egzersizin stres seviyesi düzenlenirse ve bir hastaya özgü reçete edilirse etkisi yüksek olur. Beklenmedik yaralanmalar ve hastalıklar önenebilir. Bu kişiselleştirilmiş, çok amaçlı, değiştirilmiş aero-pilates egzersiz programı kolaydır, herhangi bir araç gereç gerektirmez, bireylerin sosyal statülerine uygundur, eğlencelidir, yaralanmalar açısından düşük risk taşır ve modifiye edilebilir. Her bireyde etkili ve verimli sonuçlar elde edilebilir. Bu nedenle, bu program diğerlerinden üstündür.

Anahtar Kelimeler: Egzersiz, Obezite, Önleme

Abstract: Today's concept of health is based on individual's attitudes to protect, maintain, and develop the well-being. Exercise is the most potent medication with an adjustable stress level. This descriptive study was conducted with 146 patients who visited the Wellness Center of Afyonkarahisar Directorate of the Public Health between January 2014 and December 2015. Socio-demographic characteristics and anthropometric measurements of patients were obtained. Participants were regularly recruited to the center for monthly checkups. It was asked from patients to show that they exactly applied the exercise plan by filling feedback forms. Patients were not obese in the end of the study. The average weight loss of participants was 12.44±7.58 kg. When a safe and effective exercise appropriate to the physical and social condition of the person is applied, and when the psychological support is provided by using the multidisciplinary approach, participatory adaptation and sustainability increase and this positively affects the weight control and the treatment of obesity related diseases. Furthermore, personalized, multi-purpose, modified aero-pilates exercise program has been considered as an alternative technique to other exercises and sporting activities that are primarily performed for weight loss, healthy life, or treatment of many diseases. An exercise is a medication. When the stress level of an exercise is arranged and prescribed to an individual, it leads to high efficiency and unexpected injuries and diseases can be prevented. This personalized, multi-purpose, modified aero-pilates exercise program is easy, it does not require any tool, it is appropriate to the social status of individuals, it is enjoyable, there is a low risk for injuries, it can be modified according to each individual, and it is efficient. Therefore, this program is superior to others.

Key Words: Exercise, Obesity, Prevention

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INTRODUCTION

The aim of healthy lifestyle behaviors is not only preventing a disease but also improving individual's general health and well-being status (Edelman and Mandel, 1986; Arslan and Ceviz, 2007:213-217).

Various health problems are caused by immobile life-style and the lack of positive behaviors and attitudes towards the health concept (Arslan and Ceviz, 2007:213-217; Pender, 1987; Redland and Stuijbergen, 1993:427-441). Furthermore, studies report that immobile life-style leads to various chronic diseases (Arslan and Ceviz, 2007:213-217; Coștanzo, et, al., 2006:786-801; Lees and Booth, 2005:73-79).

Even though the most effective types of exercises are jogging, hiking, biking, boating, and swimming which can increase the aerobic capacity. These exercises may not be suitable for health, physical, social, economic statuses, and tastes of individuals. As it can be seen in Table 1, different types of exercises can lead to different contributions and nega-

tive effects. Therefore, it is required to individualize these exercises in an effective and safe way and maximize their positive effects on individual's health status (Faulkner, et, al., 2014:46-54).

Exercise is the most potent medication with adjustable stress level. Exercise has important effects particularly on today's most important health problems such as obesity, cancer, cardiovascular diseases, and osteoclasia (Pedersen and Saltin, 2015:1-72). Even though the type of the exercise and the duration of sporting activities are not certain, there is a general consensus about the safety and efficiency of an exercise which should be suitable to an individual and lead to the regular exercise of large joints and muscles as well as the heart (Franklin, et, al., 2000:30-2457).

1. The short-term effect of this program is the disappearance of muscle aches on the 3rd day. Furthermore, the life quality is enhanced with its long term effects on the 20th day and at the 6th month and these effects are more persistent.



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Table 1. The Most Frequently Used Exercises, Their Contribution to the Person, and Their Negative Effects (Franklin et al, 2000:30-2457)

EXERCISE	CONTRIBUTION	NEGATIVE EFFECT
1 Walking Exercise	Losing weight	Weak Exercise, Risky for Knee and Waist
2 Jogging	Losing weight and strength	Risky for Knee and Waist
3 Cycling	Losing weight	Weak Exercise
4 Weight Work	Strength	High risk for injury
5 Swimming	Losing weight	Risky in Diabetes patients
6 Water walking	Losing weight	Risky in Diabetes patients
7 Pilates	Stretching Exercise Provides Flexibility	Injury risk
8 Aero-Pilates Exercise	Losing weight	Safe and Effective

The aim of this study is to evaluate the health status of participants who regularly visit wellness centers with the help of nutritionist, exercise specialist, psychologist, and child development specialist. Furthermore, it is also aimed to show the effectiveness of the multi-purpose, personalized, modified, and aerobics exercise program.

This descriptive study was conducted with 146 patients who visited the Wellness Center of Afyonkarahisar Directorate of the Public Health between 1 January 2014 and 31 December 2015. No sampling method was used. Socio-demographic characteristics and anthropometric measurements of the patients were included in the survey. Multidisciplinary approach treatment was applied to obese individuals who were admitted to the wellness center.

METHODS

Multidisciplinary approach treatment

- Determination of the general health status (check-up)
- Identification of the person's obesity
- Determining the individual's obesity profile (weight, height, waist circumference, hip circumference, waist/hip circumference, body mass index (BMI))
- Determination of the exercise type to be recommended according to the target
- Determination of the purpose of the program to be implemented (losing weight, weight protection, flexibility vs.)



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- Implementation of multi-purpose, personalized, modified, aeroplates exercise program recommended to the individual
- Evaluation of the compliance of an individual to the multi-purpose, personalized, modified, aeroplates exercise program
- Prescribing the multi-purpose, personalized, modified, aeroplates exercise program (Type of exercise, number of sessions, severity and duration of exercise are adjusted according to an individual)

Multi-purpose, personalized, modified, aeroplates exercise program (Figure 1):

This program is composed of 15 movements which are performed on both horizontal and vertical axes. It takes 10 to 12 minutes and movements do not lead to increase in blood cortisol levels. This exercise program is performed by adjusting the stress level. This program is composed of horizontal and vertical movements in order to protect the joints from the negative effects of the gravity. For this reason, risky movements are excluded. There are 15 safe movements in the exercise program that allows the exercise of large joints and muscles. These movements are sequentially listed starting from easy to hard and re-

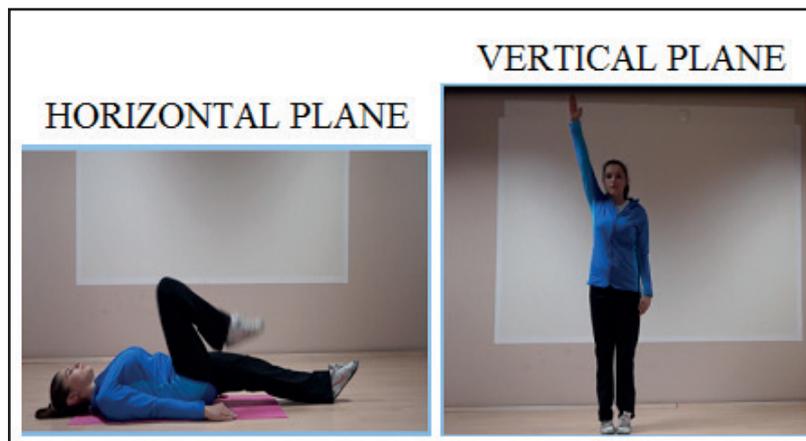
peated movements are numbered. Movement repeat number was recommended as 10 as it is in case of body building exercises.

It is possible to exclude some movements, decrease the number of movement repeats, and modify the movements according to the physical, social, and health conditions of individuals. Modifications improve the compliance and sustainability and thus it is possible to remove the risk of injury.

A feedback form was prepared and it was asked from patients to show us that they exactly applied the exercise plan by filling feedback forms and bringing them to us each month (Figure 2). The exercise program movements can be seen in Figure 3. The directions of each step in the exercise program can be seen below;

1. Move your legs as cycling while lying down on the ground. Please perform it primarily with right and then with the left leg.
2. While lying down on the ground, bend your leg and pull your knee onto your chest in 1 second and leave it back in 2 seconds. Please perform it primarily with right and then with the left leg.

Figure 1. In the Multipurpose, Personalized, Modified, Aeroplates Exercise Program, the Movements in the Horizontal Plane were Prioritized in order to Reduce the Adverse Effects of Gravity on the Joints.



3. While lying down on the ground, rapidly lift your leg up (1 second) and then slowly lower your leg down to the ground (2 seconds). Please perform it primarily with right and then with the left leg.
- 4-5. While lying down on the ground, circle your straight leg clockwise and then repeat the movement counterclockwise. Please perform it primarily with right and then with the left leg.
6. Lie on your side on the ground and raise your straight leg quickly towards your head (1 second) and lower your leg down on the ground (2 seconds). Please perform it primarily with right and then with the left leg.
7. Lie on your side on the ground and pull your leg to your stomach (1 second) and let it go back straightly (2 seconds). Please perform it primarily with right and then with the left leg.
- 8-9. Lie on your side on the ground and circle your straight leg clockwise and then repeat the movement counterclockwise. Please perform it primarily with right and then with the left leg.
10. Lie on your side on the ground and perform the cross walk movement. Please perform it primarily with right and then with the left leg.
11. Stand up, rise on your feet, and raise primarily your right arm up. Turn your arms forward. Afterwards, lower your arm and



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stand up again on your feet. (1 second up and 2 seconds down) Repeat the movement with the left arm.

12. Stand up, rise on your feet, and raise primarily your right arm up. Turn your arms backward. Afterwards, lower your arm and stand up again on your feet. (1 second up and 2 seconds down) Repeat the movement with the left arm.

13. Stand up, rise on your feet, and make circles with your shoulders by turning them from front to back. (1 second up and 2 seconds down)

14. Stand up, straighten your arms out sideways at shoulder height with your palms facing up and stretch backward. (1 second backward and 2 seconds turn to the straight standing up position)

15. Stand up, rise on your feet, lift your arms up, and turn back to standing position. (1 second lifting arms up and 2 seconds turn to the straight standing up position)

FINDINGS

There were 131 female and 15 male patients in the study ($N_{\text{total}}=146$). The mean age of patients was 40.00 ± 11.0 , the mean height of patients was 160.31 ± 7.12 , and the mean weight of patients was 83.65 ± 17.03 . Furthermore, their first BMI was 32.53 ± 6.25 and the final BMI was 27.68 ± 4.54 . BMI values of 146 patients reduced below 30 with the help of the exercise program and there was an improvement in their obesity level. The mean weight loss was detected as 12.44 ± 7.58 .



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Figure 2. The Feedback Form of the Multi-purpose, Personalized, Modified, Aeroplates Exercise Program Prepared for the Obesity Treatment

AFYONKARAHİSAR DEVLET HASTANESİ OBEZİTE MERKEZİ EGZERSİZ POLİKLİNİĞİ

1.AŞAMA VÜCUT AĞIRLIĞI KULLANILARAK YAPILAN AERO-PLATES HAREKET PROGRAMI ÖLÇÜM VE GERİBİLDİRİM TABLOSU

DOĞUMAN NO	YÜRÜRLÜK TARİHİ	REVİZYON NO	REVİZYON TARİHİ	PROGRAM NUMARASI
ADH-FR-1	22.12.2008	1	16.03.2010	

ADI SOYADI: Görs YAS: 55 AĞIRLIK: 100 BOY: 170 BMI: 34 istirahat Nb: 1 Hedef Nb: 1

1.Yerde yapılacak. 15... Hareket 1. aşama egzersizi... Programdır. Lütfen sabah kalkınca başlayın. Yatana kadar her seans arası 1 saatlik az olmayacak ve her bir hareketi... kaz tekrar edilecek şekilde ve lampolu (sıra önerilen hızda) yapacak, hedef kalp hızını yakalayınız. Aşam seansın önemli olup, en az 3 seans arası 18.00 dan sonra yapılmaz tercih ediniz. En az günde... seans başları için yeterlidir. Kortikosteroid kullanılmamalıdır. Ağrı ve bel çukuru için bir yardımcı destekleyerek hareketlerinizi yapınız. Gayretli olunuz ama kesinlikle zorlamayınız.

2.LÜTFEN ZORUNLU DURUMLAR DIŞINDA ZAYFLAMAK İÇİN YÜRÜYÜŞ YAPMAYINIZ.....Kg altında yürüyüş önerilecek. Lütfen aerobik ağırlık egzersizi olan 17 hareketi sıra ile yapmaya çalışınız. Hareketleri ara vermeden arka arkaya yaptığınızda kalp hızı yaklaşık 110-140 atım/dk olup, tempolu yürüyüşe karşı gelmiş için güvenli olan bu hareketlerdir. Seans yaptığınızda sağlıklı beslenme ile beraber aylık 4 kg ağırlık kaybı anlamına gelir. Size önerilen şekilde ve hızda yaptığınızda 1 seansın kalori karşılığı yaklaşık 400... Kcal'dir. Kilo vermek için günde 300-400 kcal'lik egzersiz yeterlidir. Lütfen Sabırlı Olunuz!!!

NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	NO	TARİH	KB	BŞ	KÇ	Uyum %	
1	16.03.2010	74	78	80	2	16.03.2010	74	78	80	3	16.03.2010	74	78	80	4	16.03.2010	74	78	80	5	16.03.2010	74	78	80	6	16.03.2010	74	78	80	7	16.03.2010	74	78	80	8	74
NOT: 1. Akşam 20:00		NOT: 2. Akşam 20:00		NOT: 3. Akşam 20:00		NOT: 4. Akşam 20:00		NOT: 5. Akşam 20:00		NOT: 6. Akşam 20:00		NOT: 7. Akşam 20:00		NOT: 8. Akşam 20:00		NOT: 9. Akşam 20:00		NOT: 10. Akşam 20:00		NOT: 11. Akşam 20:00		NOT: 12. Akşam 20:00		NOT: 13. Akşam 20:00		NOT: 14. Akşam 20:00		NOT: 15. Akşam 20:00		NOT: 16. Akşam 20:00		NOT: 17. Akşam 20:00				
1	16.03.2010	74	78	80	2	16.03.2010	74	78	80	3	16.03.2010	74	78	80	4	16.03.2010	74	78	80	5	16.03.2010	74	78	80	6	16.03.2010	74	78	80	7	16.03.2010	74	78	80	8	74
NOT: 1. Akşam 20:00		NOT: 2. Akşam 20:00		NOT: 3. Akşam 20:00		NOT: 4. Akşam 20:00		NOT: 5. Akşam 20:00		NOT: 6. Akşam 20:00		NOT: 7. Akşam 20:00		NOT: 8. Akşam 20:00		NOT: 9. Akşam 20:00		NOT: 10. Akşam 20:00		NOT: 11. Akşam 20:00		NOT: 12. Akşam 20:00		NOT: 13. Akşam 20:00		NOT: 14. Akşam 20:00		NOT: 15. Akşam 20:00		NOT: 16. Akşam 20:00		NOT: 17. Akşam 20:00				

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Uyum %
OCAK	6	5	7	7	4	7	8	7	7	8	8	8	6	5	7	8	7	8	6	7	8	7	8	6	5	4	7	7	8	8	7	
ŞUBAT	7	4	7	6	6	7	7	4	6	6	7	6	7	7	6	8	7	8	6	7	7	7	7	7	7	7	7	7	7	7	7	
MART	7	7	4	7	4	7	7	5	8	7	6	6	8	7	7	7	6	6	8	7	8	7	6	6	7	7	7	7	7	7		
NİSAN	6	7	7	7	5	6	7	6	7	7	6	7	8	7	5	7	8	8	7	8	7	8	7	6	6	7	7	7	7	7		
MAYIS	5	5	4	6	4	4	4	6	5	6	5	7	8	5	5	2	4	7	4	1	2	3	2	4	4	6	3	7	6	6		
HAZİRAN	6	6	7	6	5	4	4	5	4	6	5	6	6	6	5	8	6	6	7	6	6	6	6	6	6	6	6	6	6	6		
TEMMUZ	5	5	4	4	4	4	5	5	4	6	6	6	6	6	5	5	5	5	5	5	5	5	5	6	4	3	6	5	6	5		
AGUSTOS	5	5	4	4	4	4	5	5	4	6	6	6	6	6	5	5	5	5	5	5	5	5	5	6	4	3	6	5	6	5		
EYLÜL	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3	3		
EKİM	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
KASIM	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4	4		
ARALIK	6	5	6	5	5	7	6	7	6	7	6	5	4	6	8	8	7	8	8	8	8	8	8	8	8	8	8	8	8	8		

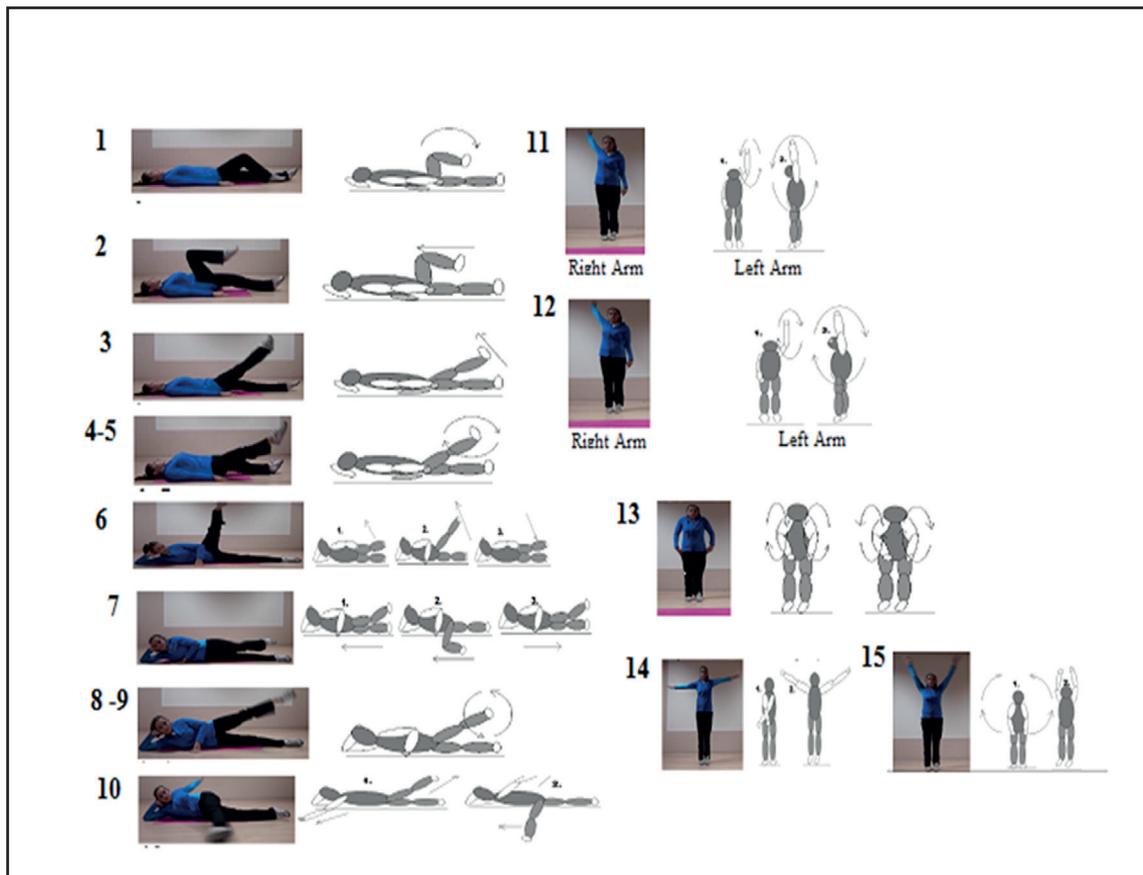
AKŞAM SEANSLARI KILO VERMEDE ÇOK ETKİLİ OLUP, MUTLAKA: 1. Akşam yemeğinden önce 1 seans (kan şekeri yükseltir, insülin salınımını azaltır ve tokluk hissi verir. Az yemeyi sağlar), 2. Yatmadan önce 1 seans (gece atıştırmalarını önler) yapınız.

TOPLAM GÜNLÜK SEANS SAYINIZ OLARAK PLANLANMIŞTIR.

Web sayfasına ziyaret ederek detaylı bilgi edinebilirsiniz: dr.lutfiargun.net Mail adresi: obezitepoliklinigi@hotmail.com

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Figure 3. The Multi-purpose, Personalized, Modified, Aeroplates Exercise Program (Franklin, et, al, 2000)



DISCUSSION

In this study, it was shown that when the multi-purpose, personalized, modified, aeroplates exercise program is performed as it is prescribed, it leads to positive health outcomes with a high efficiency. This exercise program was applied to more than two hundred thousand patients in 8 years and there was no negative feedback. In order to consider an ex-

ercise program as efficient, it should lead to successful weight loss and weight protection, it should facilitate the treatment of diseases (such as diabetes and hypertension) related to muscle mass loss, and it should prevent the knee and back issues due to weight loss.

Similar to studies of Montesi et al., De Miguel-Etayo et al., and Bocca et al., it has been shown that multidisciplinary approach



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and regular exercises in the treatment of obesity are successfully applied (Montesi, et al., 2016:37-46; De Miguel-Etayo et al., 2016:84-87; Sumithran, et al., 2016:101-107). Furthermore, it has recently been shown in meta-analysis of randomized controlled trials that obesity and related diseases can be treated and life quality can be improved by performing a regular and appropriate exercise in almost every period of life such as childhood, adolescence, and pregnancy (Freitas et al., 2016; Magro-Malosso, et al., 2016; García-Hermoso, et al., 2017). As it has been indicated in a study of Holzapfel et al., follow up of patients with phone calls is also very important in the obesity treatment (Holzapfel, et al., 2016:230-240).

Following the patient by phone calls increases the motivation of the patient. This is very important in the success of the exercise program. Therefore, regular follow ups in wellness centers with the help of phone calls or face-to-face interviews are very important in obtaining successful health outcomes in terms of obesity treatment (Holzapfel, et al., 2016:230-240). A recent clinical trial has been completed and it has been claimed that inpatient obesity can be prevented with the phone follow-up (Inpatient Obesity Intervention with Phone Follow-up).

Our study shows that when the obesity is regularly followed up with the multidisciplinary

approach, it can be successfully treated. When a safe and effective exercise appropriate to the physical and social condition of the person is applied, and when psychological support is provided by using the multidisciplinary approach, participatory adaptation and sustainability increase and this positively affects the weight control and the treatment of obesity related diseases.

Furthermore, personalized, multi-purpose, modified aero-pilates exercise program has been considered as an alternative technique to other exercises and sporting activities that are primarily for weight loss, healthy life, or treatment of many diseases. An exercise is a medication. When the stress level of an exercise is arranged and prescribed to an individual, it leads to high efficiency and unexpected injuries and diseases can be prevented.

This personalized, multi-purpose, modified aero-pilates exercise program is easy, it does not require any tool, it is appropriate to the social status of individuals, it is enjoyable, there is a low risk for injuries, it can be modified according to each individual and it is efficient. Therefore, this program is superior to others.

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INTERNET SOURCES

Effects of Nutrition Meal Replacement and Individualized Exercise Prescription on Type 2 Diabetes Available at: <https://clinicaltrials.gov/ct2/show/NCT02984605> [accessed 12.01.2017]

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