IV. Ulusal Spor Fizyoterapistleri Kongresi
Sözel Sunum ve Poster Özetleri

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Tracy Spigelman, Tim UNI, USA
University of Kentucky, Lexington, KY, USA
Amaç: Kuru-yüzey atletleri serbest stil yüzmeye taktik eder gibi
görünmektedir ama henüz olayı içe sağalı almadan hareket ve üst
yuvanın usemını engellemektedir ve bu doğru yüzüş teknigini içine
Carthy. Bu çalışmamız, yüzüş geliştirimi belirli hedef geleneksel ve
rotasyonel yüzme bençeleri üzerine serbest stil yüzüşünün
kentnetikleri ve EMG'lerini karşılayacaktır. Gerçek ve yöntem: Kökçey
yüzüşçilerinin (n=22, 23±3.9 yaş, 177±8.8 cm, 72±12 kg) sağ üst
ekstremitesi yüzü, iyi telli ve 3D-kinematik işaretleyicilerleydı.
Dinamik denemeler 3 benchli 4 seri 15 sn devamlı serbest stil
yüzümü içerir; bir Vasa Eğitimi (düz), rotasyonel bench (RB),
tekne komponentli yüzme işi (SW). Vuruş ölçümü potansiyel ortama
almalı ve erken (EPT), geç (LPT) eğik ve topoların (REC)
fazaları ayrıldı. Sonuçlar: Dise SW bench ile düz ve RB
aralımdaki kinematik ortalamaları karşılaştırılmasında eğilimli test
kullanıldı. EPT'de onuz horizontal abduksiyon alanı RB'de
(19.45±25) (p=0.038) düz benchen (8.15±40) daha büyük bulundu,
ama LPT arasında horizontal abduksiyon alanı düz benchete
(20.27±39) (p=0.003) RB'den (3.03±24) daha yüksekti. Gövde
rostası oyunu için farklı bulunmadı. SW bench şu şekilde yüzme en
yüksek puanı seçildi. Sürücü boyunu subkapulaside düz amplitüde
idam (% 8.7-37 MVIC). Infraspinatus amplitüde geniş bir puanı seçti ve
eğerkinlikle karşılaştırılması Tartışma: Rotasyonel benchler serbest
stil yüzme hareketleri boyunca daha düşük olan/% ın verilenin doğru
vuruş teknigini içine gerekli tutulmaktadır. Esneklik ve

Dry-land freestyle swimming: comparison of a traditional and two multiple-planar benches.
Purpose: Dry-land swimming devices are purported to mimic freestyle swimming, but move primarily in sagittal plane preventing
body roll, crucial for proper stroke technique. Our research compares
kinematics and EMG of freestyle stroke on traditional and rotational
swim benches to determine stroke specificity. Materials and methods: Collegiate swimmers (n=22, 23±3.9 year, 177±8.8 cm,
72±12 kg) right upper extremity was with surface, fine wired and 3D
kinematic sensors. Dynamic tests consisted of 4 uses of 15 seconds of
continuous freestyle swimming on 3 benches: a Vasa Trainer (flat),
rotational bench (RB), Swim Works (SW) with a kicking component.
Stroke cycles were ensemble averaged and divided into early (EPT),
late pull through (LPT) and recovery (REC) phase. Results: Paired T-
tests were used to compare kinematic means between flat and SW
bench and between flat and RB. A greater range of shoulder horizontal
abduction in EPT was found on the RB (19.45±25) (p=0.038) than flat
bench (8.15±40), but during LPT range of horizontal abduction was
greater on the flat bench (20.27±39) than RB (3.03±24). No
differences were found for trunk rotation. The SW bench displayed the
closest muscle pattern to in water swimming. Subcapularis was
on at low amplitudes throughout (8.7-37% MVIC). Infraspinatus
amplitudes were comparable to in water swimming as were muscle
patterns. Conclusion: While rotational benches allow for greater
ranges throughout the freestyle swimming motions, they do not mimic
the body roll needed for correct stroke technique.
Investigation into the effects of previous hamstring injury or posterior thigh pain on muscle firing order during active prone hip extension

**Purpose:** Injury to the hamstrings or posterior thigh accounts for 12% of all soccer injuries, and studies have demonstrated that 34% of all hamstring strains or posterior thigh pain are described as recurrences of a previous injury. It has been suggested that there can be alterations in motor control of the hip extension movement commonly examined in physiotherapy practice as a result of injury and dysfunction.

**Materials and methods:** This study used repeated measures of measures under the same conditions. Means and standard deviations of the onset times for four muscle groups were calculated for each subject from 12 healthy professional footballers, and recorded by surface EMG for 3 sets of ten active hip extensions at 30 degrees per second. Results: The hamstrings demonstrated a peak value of 0.24 for the left biceps onset compared to the gluteus maximus, indicating that there is no significance in initiation of muscle activation. The right femur was marginally better at a peak value of 0.30, therefore there cannot be any significance attached to the results for hamstrings and gluteus.

**Conclusion:** There is no relationship shown to this data to suggest that there is any significance in the presence of previous hamstring or posterior thigh pain for the onset of muscle activation in hip extension from prone lying.

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**Pilates egzersizin diz eklem pozisyonu üzerinde etkisi**

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**Amaç:** Pilates egzersizinin ağız kinetik zincir pozisyonunda aktiv ve pasif olarak ölçilen diz eklen pozisyon duyusuna etkisi.

**Gereç ve yöntem:** Çalışma marketing alınan 20,91±0,99 yıldır, ortalaması BK1'si 22,40±3,51 kg/m2 olan toplam 31 genç ve sağlıklı birey (Pilates grubu=15 olgu, Kontrol grubu=16 olgu) dahil edildi. Egzersiz grubundaki olgulara alt eklemler Pilates egzersizleri 8 hafta boyunca haftada 3 gün olacak şekilde uygulandı. Kontrol ve egzersiz grubundaki olguların başlangıçta ve 8 hafta sonunda eklemler pozisyon duyuşunu değerlendirildi. Diz eklen pozisyonu 'diz pozisyonu' eklemleri 30 ve 60 derece fiksiyon aşıltara açık kinetik zincir pozisyonunda aktif ve pasif olarak yapıldı. Sonuçlar: Başlangıçta her iki grup demografik özellikler ve diz pozisyonu duyusunun açılışında kârısıklıklar arasında sınıflandırıldıkları grupların homojen olduğu görülür. Kontrol grubunda başlangıç ve 8 hafta sonunda ölçüm pozisyonları kârısıklıklar arasında istatistiksel olarak anlamlı bir fark yoktu (p>0.05). Egzersiz grubunda 8 hafta sonunda, %30 dél eklem pozisyonu hem aktif hem de pasif ölçümlerde anlamlı bir fark bulunmadı, dışında tüm ölçüm değerleri anlamlı şekilde değişti (p<0.05). 8 hafta sonunda iki grubunda diz eklem pozisyonu duyuşu ölçümü kârısıklıklarında egzersiz grubunda eklemler pozisyonunu kontrol grubuna göre geliştiği ve aradaki farkın anlamlı olduğu belirlendi (p<0.05).

**Tartışma:** Pilates egzersizinin diz eklen pozisyonu duyuşuna olumu etkisi olduğu belirlendi.

**The effect of Pilates exercises on knee joint position sense-pilot study**

**Purpose:** To determine the effects of pilates exercise training on knee joint position sense measured in active and passive open kinematic chain position. **Materials and methods:** 31 healthy young individuals (Exercise group=15 subjects, Control group=16 subjects) mean aged 20.91±0.99 years and had mean BMI 22.40±3.51 kg/m2 were included in the present study. A program composed of lower extremity Pilates exercises were done to exercise group, three times a week during 8 weeks. Joint position sense was measured in the beginning of the study and at the end of the 8 weeks in exercise and control groups. Measurements of knee joint position sense were done in active and passive positions at both 30° and 60° of knee flexion in open chain position. Results: When two groups were compared it was observed that demographic information and position sense were homogenous between groups (p>0.05) in the initial measurements. In control group there was no significant difference for measurements between first and 8 weeks after (p>0.05). In exercise group, a significant difference was not found for right knee joint position sense at 30° flexion in both active and passive positions, whereas other values of the measurements significantly improved (p<0.05). After 8 weeks, it was determined that the joint position sense in exercise group improved compared to control group and the difference was significant between them (p<0.05). **Conclusion:** It was determined that the pilates exercise training had positive effect on knee joint position sense.
Ankara Polis Koleji öğrencilerinin vücut kompozisyonlarının değerlendirilmesi

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Assessment of Ankara Police College students’ body composition

Purpose: Since law enforcement duty is a high risk profession, personnel have to bear with the adverse conditions that these risks might arise, and have to spend very high effort to encounter crimes. Consequently, policemans have to be healthy, fit and at high physical level. The aim of this study was to determine the Ankara Police College Students’ body composition levels and to investigate the relation between body composition level and age and Sports participation. Materials and methods: In this study, 713 volunteers, studying at Ankara Police College with in the range of 15-18 years old were investigated. From nine different anatomic region; Skinfold thickness were measured with Holtain skinfold caliper at the dominant side of the body. Results: Although significant relations (p < 0.05) has been set on height, weight, body mass index, fat mass ratio (%), abdominal, calf, subscapular, suprailiac, midaxillar skinfold measurements between the groups from the comparison of the body composition levels of the students according to age groups, any obvious relation (p > 0.05) has been set on pectoral, thigh, triceps, biceps skinfold measurements. From the comparison of the body composition levels of the students according to sports participation, significant relations (p < 0.05) has been set on height, weight, body mass index, fat mass ratio (%), abdominal, subscapular, suprailiac, midaxillar, pectoral, thigh, triceps, skinfold measurements; any obvious relation (p > 0.05) has been set on biceps and calf skinfold measurements. Conclusion: It was assessed that, sports participation increases fat free body weight and decreases especially trunk skinfold thicknesses.
The effects of ankle flexibility and isokinetic muscle strength to the running speed of elite sprinters

Purpose: The aim of this study is to understand the effects of ankle flexibility and isokinetic muscle strength on the running time of the elite sprinters. Materials and methods: Eleven sprinters (5 female / 6 male) (age: 21.36+.34 years, mass: 62.71+.12.68 kg, height: 170.43+.06 cm) participated in this study. Their normal range of motion (ROM)-Lafayette Electronic Goniometer), flexibility (Flexibility tests), isokinetic muscle strength (Cybex 6000 isokinetic dynamometer) (30-120°/sec speed) and running time (sec) in 100m (NewTest Photocell System) were evaluated. Results: There was a significant relationship between peak torque (PT), total work (TW) and average power (AP) values at 30-120°/sec with the running time of the athletes. It was found that running time is especially affected by the PT of plantar flexor muscles at the speed of 30°/sec in both legs (p<0.01 right; p<0.05 left). Additionally, it was found that the flexibility of the gastrocnemius muscles was affecting 100m running time of the athletes (p<0.001). Conclusion: We concluded that ankle joint isokinetic performance is effective on running time of the sprinters. Especially the isokinetic strength of plantar flexor muscles seems to be effective in this result. The range of motion of the ankle joint and the flexibility of the gastrocnemius muscles in both sides are also considered as important factors effecting the sprint time.
Effect of passive stretching exercises on delayed muscle soreness formed on sedentaries

Purpose: The aim of this study was to detect the effects of passive stretching exercises on delayed muscle soreness. Materials and methods: Following the physical examinations of the subjects, the study was conducted with the participation of 26 sedentary (13 volunteers for study group & 13 volunteers for control group) male, randomly, voluntary university students whose ages ranged between 18 and 25 (21.26±4.3 years). In order to form delayed muscle soreness on the volunteers, eccentric exercise including 5 sets of 10 repeats was required for the hamstring muscle of the right leg by using Leg Curl machine (Jimsa CL110). Stretching group done 30s and 3 sets as passive stretching exercises and control group was rested 20s between sets. Blood samples were provided from both groups prior to the exercise and in the 6th, 24th and 48th hours after the exercise in order to measure the percentages of serum creatine kinase (CK) enzyme and neutrophils, both of which increase as a result of muscle damage and delayed muscle soreness. Results: The CK values of the group on which passive stretching technique on the 6th (t = 4.377, p<0.05), 24th (t = 5.140, p<0.05) and 48th (t = 4.455, p<0.05) hours after the training session were significantly less than those of the group on which the passive stretching technique was not. Conclusion: In our study, the CK of the stretching and control groups on the 6th, 24th and 48th hours after the training session differed significantly. These results indicated that passive stretching exercises provided the optimal effect on the 48th hour.
Reliability of Cincinnati knee rating system and 3 different functional tests long term outcome of the following anterior cruciate ligament reconstruction

Purpose: Evaluate the intraobserver reliability of the Cincinnati Knee Rating System and the single leg hop for distance, triple hop test, crossover hop test in subjects following anterior cruciate (ACL) reconstruction on two testing occasions, performed one week apart.

Materials and methods: Sixteen patients, who had undergone ACL reconstruction six months before the tests and followed orthopaedic rehabilitation participated in this study. Examine the test-retest reliability of the a single leg hop test, triple hop test, crossover hop test and CKRS, Cincinnati Sports Activity Scale (CSAS) performed one week apart.

Results: Sixteen patients, who had undergone ACL reconstruction six months before the tests and followed orthopaedic rehabilitation participated in this study. Examine the test-retest reliability of the a single leg hop test, triple hop test, crossover hop test and CKRS, Cincinnati Sports Activity Scale (CSAS) performed one week apart.

Conclusion: The results showed that CKRS, CSAS and a single leg hop tests, triple hops, crossover hop tests provide higher reliability for patients undergoing rehabilitation following ACL reconstruction. Future research should be determined the validity of these tests and, if isokinetic tests can not do, we think about these tests may use in orthopaedic rehabilitation after ACL reconstruction based on evidence based data.

Functional outcomes of the adolescents with Osgood-Schlatter

Purpose: Osgood-Schlatter disease is a common cause of pain and tenderness at the tibial tuberosity in functional abilities of active adolescents. The aim of this study was to evaluate the functional abilities between the subjects who had diagnosed as having Osgood-Schlatter and age matched controls. Materials and methods: 10 cases (age: 15±4.12 years, height: 172±9.12, cm; weight: 62.0±15.21, kg, body mass index: 20.57±4.1) and 3 controls who had no ultrasound findings (age: 16.3±4.07, years, height: 183.3±5.68, cm; weight: 72.93±20.7, kg, body mass index: 22.76±4.8) underwent a couple of assessment on Functional Squat System (Monitored Rehabilitation Systems, Harlem, The Netherlands) for coordination strength and vertical jump test. Results: There was no difference at broad jump test between the groups of non-involved side (p>0.05) but no difference for the coordination test (p>0.05). In the strength test total work (Nm) and average power (W) for concentric muscles both for involved and non-involved sides and total eccentric work, total eccentric peak force (N) were significantly different between involved and non-involved sides of the subjects (p<0.05), no significant difference between broad and vertical jumps in groups (p>0.05). Conclusion: Strength related to concentric and eccentric loading in a closed kinetic chain seems to be highly affected with Osgood-Schlatter disease. It might be important to prescribe specific training exercises with optimal loading.
Is ankle taping effective on lower extremity proprioception?

Purpose: Proprioception is a term which explains the sensations related with muscle strength, joint movements and positions. Any injury including ankle joint affects joint position and movement sense. This hypothesis is based on decreased proprioceptive input provided by joint ligaments and capsule resulting from diminished conduction capacity of the mechanoreceptors after injury. The purpose of this study was to investigate if ankle taping is effective on lower extremity proprioception.

Materials and methods: 26 voluntary female subjects (21,461,63 years) took place in our study. Proprioception evaluations were applied to all subjects before and after taping using the "Winstead Functional Squat System (Monitored, Netherlands)". Each subject's dominant ankle as the foot was bare-used for the testing. During testing the subject tries to catch the line seen on the screen, which means catching the correct positions. Comparing the deficits and the correct positions takes us to the results. After the first test, we applied to closed basketweave technique (Gibney) for taping the ankle using adhesive tape. The same taping procedure was carried out again after taping. For the statistical analysis of pre and post taping status, we used the SPSS 13.5 programme.

Results: As a result of the statistical analysis, we found a significant increase for the correct positions that subjects caught (p=0.023).

Conclusion: It was hypothesized that the tape would provide additional cutaneous facilitation at spinal or higher levels and improving the perception of movement and spatial proprioceptive sources. As a result of our study we can affirm that applying ankle taping (closed basketweave) on healthy subjects improved proprioception therefore, we can use this as a prevention technique in sports injuries.
Farklı abdominal kuvvetlendirme yöntemlerinin karşılaştırılması

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Comparing different methods of abdominal strengthening

Purpose: We have been planned this study to examine the effect of different abdominal muscle strengthening methods on the strength of abdominal muscles. Materials and methods: 80 sedentary and healthy university students, aged between 17 and 25 grouped randomly into 4 in this study. The first group was trained to do strengthening exercises with surface EMG assisted Biofeedback, the second group with AbSlide and the third one with curl-up by a physical therapist for 6 weeks, three times a week. Exercises were done in three sets and 20 times curl-up exercises in each set. The forth group one was assigned to do curl-up exercises at home. Before and after training abdominal muscle strength and endurance of subjects were measured with surface electromyography (EMG). Results: Voluntary muscle contraction results with electromyography(EMG) maximum and mean levels of EMG signal for upper rectus abdominis increased in all groups whereas the first group was different from the others significantly (p<0.05). In the first group, lower rectus abdominis maximum and mean levels of EMG signal was found different from the others. Conclusion: It can be concluded that using EMG Biofeedback to strengthen muscles can be accepted as an effective method.

Osteitis pubis taniş konulmuş vakalarıda osteopatik değerlendirilme sonuçları

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Osteopathic evaluation results in osteitis pubis

Purpose: In this study we aimed to identify the presence of osteopatik lesions, the efficiency of anthropometric measures and use of osteopathic management in diagnosis and treatment. Materials and methods: 24 male Professional soccer player who were diagnosed as osteitis pubis (OP) was taken in this study. Their ages were 20-25±2.9 years, training ages were 10±3.5 years had been suffering 12.8±9.6 weeks. Effect side (right, left, bilateral) playing position in the field (goalkeeper, midfield, striker), presence of suprapubic surgery (apendicetis, inguinal hernia, varikoze etc.) real leg length (SIAS-Medial Malleolus), visible leg length Umbilicus-Medial malleol) and mid reference measurement (SIAS-Umbilicus) values were noted. In all cases lower extremity, pelvis (ilium, pubis, sacrum) and lumbar examinations were made. Results: Statistic evaluation made with SPSS 11.0. No relation was found with the dominant side (number was insufficient). In our study we found that especially midfield players (33.3%) and strikers (33.3%) were the majority. There was strong correlation between the suprapubic surgery and effected side. In most of the patients the visible leg length (58.4%) and the real leg length (66.6%) was different. Conclusion: There was correlation with the short side and effected side (cases should have increased). In 83.3 % of our patients (70.8 % sacrum torsion, 12.5 % ilium anterior) osteopatik leşon was found in pelvis.
PO1
Liptıp profilinin ardından güzegiz, hiperkalorili diyet ve oksidatif stres
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Amaç: Dijetetik beslenme yetişkinliği ile ilgili yaygın egzersiz, günlük yaşamda etkileyen birçok rahatsızlıkla sonuçlanır. Çalışmanın hedefi, hiperkalorili diyetin (HD) ve fiziksel egzersizin (FE), lipid profilini (LP) ve saçan miyokardiyumun oksidatif stres (OS) üzerinde etkileri değerlendirmektir. Gereç ve yöntem: Kontrol grubun (C3.50cm) ve hiperkalorili diyet (HD4.50cm) grubundaki Erkek Wistar szczanları (200g) kullanıldık, bunlar sedanter (SC, SIU) ve egzersiz (CE, HE) alt gruptlara ayrıldı. Dokuz hafta sonunda serum örnekleri ve kardiyak doku alındı. Tedavi gruplarının kaslaşılmasında istatistiksel yöntem olarak ikinci yönt olarak kullanıldı. Sonuçlar: FE, final wicht açığımız azalttı. HD grubu szczanlarında TGC'de (%568), VLDL-C'de (%669), LDL-C'de (%622) arttı ve HDL-C'de (%623) azalma görüldü. Antioxidan özellikli olarak argin olmaktan birikte, HD'nin hiperkotik (HP) serum üzerinde etkisi olmadı. FE ve HD arasındaki ilişki, miyokardiyum HP'yi (43%) arttı. FE'nin yarı yukarı dingit, sütun sentez miyokardiyal düzeyde (568) artı ile görüldü. Tartışma: HD, eski haline döne de SC ve CE gruplarında LP değişikliklerine neden oldu. Bununla beraber, bu durum miyokardiyal OS'yi arttırm. LP analizi tek başına moleküler miyokardiyum hasarını göstermedi.

Behind the lipid profile: exercise, hypercaloric diet and oxidative stress
Purpose: Intense exercise associated to dietary nutritional inadequacy is one of the many lifestyle disorders. The present study evaluated the effect of hypercaloric diet (HD) and physical exercise (PE) on lipid profile (LP) and oxidative stress (OS) in rat myocardium. Materials and method: Male Wistar rats (200g) were supplied with control (C3.0 kcal) and hypercaloric diet (HD4.5 kcal) and divided in sedentary (SC, SIU) and exercised (CE, HE) subgroups. Serum samples and cardiac tissue were obtained after 9 weeks. Statistical comparisons were carried out by two-way analysis of variance and Tukey's test to compare the treatment groups. The probability of 0.05 was chosen as the significant level. Results: PE reduced the final body weight. SH rats showed increased TG-C (68%), VLDL-C (69%), LDL-C (62%) and reduced HDL-C (23%). HD had no effect on hydroperoxide (HP) serum, although antioxidant property was increased. Association between PE and HD increased myocardium HP (43%). The benefit effect of PE was demonstrated by increased citrate synthase myocardial levels (84%). Conclusion: HD induced alters LP in SC and CE groups, although reverting. However, this condition induced myocardial OS. LP analysis itself did not indicate molecular myocardium injury.

PO2
Sporcular ve sedanterler arasındaki postural farklılıklar
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Postural differences between athletes and sedentaries
Purpose: The aim of this study was to evaluate the distribution of postural alterations between the athletes and sedentary at the same age. Materials and methods: 30 male students who play the basketball, soccer, volleyball and handball from a School of Physical Education and Sports (18-20 years old) and 30 sedentary university students (17-19 years old) participated for this study. In this analysis shoulder asymmetry, genu varum, genu valgum, tibial torsion, hallux valgus from anterior, anterior cervical tıft, kyphosis, anterior pelvis tıft, posterior pelvic tıft, genu recurvatum, pes planus, pes cavus, from lateral; scoliosis from posterior were assessed and scored on postural analysis form. Results: Statistics were done with Mann Whitney U test. The degree of kyphosis and genu varum deformities were significantly different between athletic and sedentary groups (kyphosis: x=5.306, p<0.001; genu varum: x=2.505, p<0.012). As a result of this study, it is determined that sedentary group had more kyphotic posture than athletic group whereas genu varum deformity was seen in the athletic group more than the sedentary group. Conclusion: In the athletic group good posture and postural awareness were significantly different from sedentary group. It can be said, due to varieties of activities, musculo-skeletal system works more actively and correct in athletes.
IV. Ulusal Spor Fizyoterapistleri Kongresi

P03
Kinesiotapingin omuz eklemi kas gücü ve hareket açılığına etkisi
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P04
Gonc santéli bireylerde 6 dakika yürüme testi için referans değerleri
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Amaç: Altı dakika yürüme testi, sağlığı karsımı kapasitesini değerlendirmek için sıkıla kullanılan bir testtir. Çalışmanın amacı altı dakika yürüme testi (6DYT) için sağlıklı genç bireylerde referans değerleri belirtmektir. 

Gerceklik ve güvenilirlik: Çalışmanın yaş ortalaması 22.4±1.35 yıl, erkeklerde 22.5±1.28 yıl olan 55 (23 bayan, 27 erkek) sağlıklı genç günlük katıldı. 

Gösterim A. Güç, genişlik ve kaza önleme, yürüme, koşma ve kardiyovasüler konsoludur, ancak 6DYT için referans değerlerini belirtmekte. 

Reference values for six-minute walk test in healthy young individuals
Purpose: Six-minute-walk test (6MWT) is a test that used to evaluate functional capacity. Aim of study was to establish reference values for 6MWT in healthy young adults. Materials and methods: 55 (28 female; 27 male) healthy individuals with mean age of 22.4±1.35 years in women with mean age of 22.5±1.28 years in men participated in the study. All subjects were non-smokers and free of operation or disorder and diseases limiting exercise performance. 6MWT was performed in a flat level corridor of 30 meters length according to standardised protocol of ATS. Pulse rate, systolic, diastolic tension values were taken before and after testing, breathlessness perception was evaluated by visual analog scale VAS (1-10) quickly after testing. Results: Walking distance mean was 649.6±69.8 m in women, 717.7±73.1 m in men, it was 11% greater in men than women (p<0.01). Mean of pulse rate changes were 18.9±6.06 in women; 17.29±7.31 in men, mean of systolic tension changes were 17.46±9.44 mmHg in women; 14.80±9.32 mmHg in men, mean of diastolic tension changes were 9.67±5.82 mmHg in women; 7.85±6.14 mmHg in men after testing. Women reported 1.87±0.35cm; men reported 1.2±0.69 cm breathless perception for VAS. Conclusion: Reference values were determined for young women and men according to these results. Same values can be expected in young adult men for similar ages. We conclude that it can be useful in interpreting evaluations. Healthy subjects do not experience significant breathless problem, increase in pulse and tension are in physiologic limits.
Progressive training program in professional soccer players with chronic groin pain after laparoscopic surgery

Purpose: Groin pain is a common complaint in many sporting populations, particularly those involved in kicking and rapid change of direction movements. The aim of the present study was to investigate the effectiveness of a specific rehabilitation training program in soccer players with chronic groin pain after laparoscopic repair. Materials and methods: In the present study participated 15 soccer players who played in the first Greek National division (Mean age=23.2±2.7 (±SD) years; mean weight=74.2±6.1 kg; mean height=1.78±0.23 m), and appeared chronic groin pain. These patients were referred to the laparoscopic specialist surgeon for surgery. In all patients, specialist surgeon performed bilateral laparoscopic transabdominal preperitoneal (TAPP) mesh (polypropylene, 12 x 15 cm) implantation in the posterior wall of the inguinal canal. After the surgery the rehabilitation training program lasted 35-45 days and aimed to prepare the athletes in order to full return to the team training program and games. Results: At the beginning of the rehabilitation training program athletes performed only activities of daily living (8-12th day) and then gradually performed fast walk + jogging with gradually increasing of the duration of the jogging time (15th-20th day). After the 20th day athletes performed tempo + sprint straight + coordination exercises, and after the 30th day performed Farliek + coordination exercises with ball. Conclusion: Examining the effectiveness of the above rehabilitation training program, concluded that the 15 soccer players were able to full return to the team training in 35 to 45 days, without pain feelings or discomfort.

Restoration of muscular imbalances of professional soccer players with an isokinetic strength training program

Purpose: The aim of the study were to detect the possible imbalances in muscular strength and to investigate the effect of a specific muscle-training program to restore the normal torque ratios of hamstring and quadriceps, reducing bilateral differences in soccer players. Materials and methods: The study was conducted on 68 professional players (age: 24.1±5.7 years) participating in the championship of the 1st Greek division. During the preparation period, all the players accomplished an isokinetic test of knee flexor and extensor muscle groups (pre-training measure), in order to detect possible imbalances or bilateral differences in muscular strength (peak torque value). A Cybex Norm dynamometer was used. Testing was performed at 60° sec^{-1} and 180° sec^{-1}. These initial measurements detected muscular imbalances or deficits in 27 soccer players. The players followed a specific isokinetic training program for 2 months, 3 times per week in order to correct the imbalances and deficits. After the completion of the isokinetic training program, performed the same isokinetic test (post-training measure). Results: Repeated measures ANOVA was used to test differences between pre- and post-training measures. The analysis revealed significant differences between the pre- and post-training measures only for the training group. Finally, on the post-training measures there were not significant differences (p>0.05) between the training group (27 players) and the rest healthy soccer players (41 players) in peak torque values. Conclusion: The results showed that a specific isokinetic training program, performed for 2 months, 3 times per week, can restore efficiently the muscular performance expressed by peak torque.

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Rehabilitation after superior labrum antero-posterior
(SLAP) lesion

This paper was to provide the guidelines for physiotherapists to help return an athlete after Superior Labrum Anterior Posterior (SLAP) lesion surgery to preinjury level of function, range of motion, strengthening, proprioception and functional activities. Overhead athletes are susceptible to shoulder injuries. SLAP lesion is injury of the upper part of labrum along with the long head of M. biceps brachii. The main cause of this injury in the sport is extreme pull of the long head of biceps during the decelerating phase of the throw. The long head of M. biceps brachii is very important for the shoulder joint, because it attaches to the upper part of the labrum. However, it is mainly considered to be a part of the rotator cuff. This tendon is often affected together with other structures of the shoulder joint, because the tendon sheath communicates directly with the joint cavity of shoulder. Rehabilitation and physical therapy are the main therapeutic means after surgery treatment. Before the therapy starts, the physiotherapist must considered facts as follow: the injury-mechanism, surgery technique, which motions cause stress on the suture line, and when the suture line can take the functional stress of return to activity. For the glenohumeral joint rehabilitation are not only important exercises to improve range of mobility, but also the exercises for positioning and stabilising of the scapula, which provides a stable base for humeral movement. Isometric exercises, exercises for proprioception improvement, rhythmic stabilisation, and aqua-gymnastics have the same importance.
Anterior cruciate ligament reconstruction outcomes: a one year follow up prospective study

Purpose: The purpose of this study was to determine the functional level of ACL reconstructed patients at 1 year post-operative and compare them to a matched asymptomatic control group. Materials and methods: 38 (19 asymptomatic controls/19 ACL reconstructed patients) subjects participated. Isokinetic isokinetic strength measures (four tests performed at 60, 120, 180, 240 degrees/sec), Activities of Daily Living scale of the Kneec Outcome Survey (KOS), laxity measurements (Kneclax 3, Biodeck), and recreational sport activity history pre- and post-injury were collected for all subjects. A one-way repeated measures ANOVA was used to determine the effects of subject group on KOS, Laxity and isokinetic strength measures. A Friedman non-parametric analysis was used to assess the differences in return rate to sports performed before injury. Results: There was no significant difference between ACL patients and matched controls in any of the flexion/extension isokinetic strength measures (p>0.05). There were significant differences in the laxity and KOS measurements (p<0.05) however both were within “normal” range. As well, 42% of patients who participated in high pivoting/rotational sports before their injury returned, after one year, to sports involving low or non-pivoting activities.

Ice hockey players with and without multiple concussions: a comparison study in a Swiss professional team

Purpose: Ice hockey has the highest incidence of concussion in contact sports in concussion management. The purpose of this study was to evaluate symptoms and function in ice hockey players with and without career concussions during the off-season. Materials and methods: 14 male hockey players (mean age 23.9±3.4 yrs) of a Swiss League professional team were examined in the off-season. One group included 6 players who had a history of multiple concussions (2-5) but were in a concussion free period of over 5 months on average. The control group was comprised of 8 matched players and 2 goal tenders who had never suffered a concussion during their career. Post concussion symptoms scale (PCSS), balance error scoring system (BESS), core strength, cervical range of motion (CROM), neural tension tests (NTT) for the upper extremity, specific cervical strength (with VAS) was examined for all players. A one-way ANOVA (p<0.05) was used to detect differences between the concussion and non-concussion group. Pearson correlation coefficients were calculated for all variables. Results: PCSS (p=0.016), BESS (p=0.007), VAS-cervical strength (p=0.011) were significantly impaired in the concussion group. CROM (p=0.061) and core strength (p=0.082) were diminished in the concussion group. No significant differences were found in the other CROM or NTT exams. Moderate to high correlations were found between the number of concussions (Crom and BESS (r=0.92), BESS and PCSS (r=0.76) and CROM and PCSS (r=0.70). Conclusion: The compounded effects of multiple concussions, despite an >5 month concussion free period, still persist with significant impairments.
The country-wide imp injury prevention programme

Football is the most played sport in the world, played by 200 million amateur players. Different sports have shown that injury in football, Switzerland, the SUVA registered a total of 37 222 football injuries, over million Swiss Francs (67 million Euros) of health care costs. The F-MARC 11 programme was developed in cooperation with the expertise of international experts under the leadership of F-MARC. The programme "The 11" is a simple and catchy programme that includes evidence-based or best-practice exercises and the promotion of Fair Play. It requires no equipment other than a ball, can be completed in 10-15 minutes, and should be performed in every training session. The exercises focus on three main areas of intervention: core stability, neuromuscular control and plyometrics. Core stability and strength is essential to control trunk, pelvis and the lower extremity, while an optimal neuromuscular control of the lower extremities is crucial for joint stability. Sport-specific plyometrics, agility and speed are the key for responding to the football demands on the field. Knowing that a substantial amount of injuries are caused by foul play, the regards to Fair Play is an essential aspect in the prevention of injury. The "11" is currently implemented in a country-wide campaign in cooperation with F-MARC, the Swiss National Accident Insurance Fund (SUISA) leisure time safety and the Swiss Football Association.
P13

Femoro-acetabular impingement: profesional buz hokeyi oyuncularında rehabilitasyon

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Femoro-acetabular impingement: rehabilitation in professional ice hockey players

Purpose: The impact of femoro-acetabular impingement (FAI) in sports is still not well understood. The purpose of this study was to investigate the effectiveness of rehabilitation in professional ice hockey players with femoro-acetabular impingement. Materials and methods: 40 Swiss professional ice hockey players part of a single team were screened in the preseason for 4 years. Athletes presenting an abnormal hip internal rotation and a symptomatic hip were examined further by specific x-rays and MRI. Imaging revealed the presence of a femoro-acetabular impingement in 9 players (age 18-20 years old). In 5 players (major FAI), open hip surgery was performed. One player (major FAI) refused open surgery, and had an arthroscopy, while the remaining three players (minor FAI) were able to continue playing. All post-operative players followed a sport-specific rehabilitation program. Results: Of the players that underwent open hip surgery, all returned to competitive hockey. Mean return time to competition was 9.2 months, whilst the mean follow up time is currently 2 years. The post-arthroscopy player discontinued his competitive hockey career because of chronic hip pain. Conclusion: Ice hockey players suffering from major FAI, had to undergo open hip surgery. The return to high level sport was possible, but the long-term follow up of this procedure is unknown.

P14

Sensorimotor çalışmanın sınırlaması olarak kas yorgunluğu: EMG çalışması

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Muscle fatigue as limitation by sensorimotor training: EMG study

Purpose: It is well known that sensorimotor training is consequential used in sport as well as in therapy to improve neuromuscular control, functional joint stability and strength. Recent studies lack the analyses of the muscle fatigue by SMT. Therefore the aim of this study was to determine the time of the beginning of the muscle fatigue during sensorimotor-exercises and to compare subjective and objective (EMG) signs of fatigue. Materials and methods: 12 healthy subjects were selected for this pilot experiment, performed the walking on the blue Stability Trainer (Thera-Band®) with the speed 120 steps/min. A surface EMG (Noraxon USA) was recorded on m.tibialis anterior and m.triceps surae. EMG-signal were analysed with respect to RMS (root mean squared) values and MFP (mean power frequency) on m.tibialis anterior and m.triceps surae, as well as the subjective signs of fatigue by each person were documented. Results: The EMG-signs of fatigue started (10 probands) in the first minute of SMT-exercise. The subjective signs of the beginning of fatigue were documented between 3-4 min. The subjective sign of fatigue are therefore not comparable with the EMG-analyse. Conclusion: This pilot study demonstrated that the subjective signs of fatigue may not be used as a satisfactory criterion for SMT-exercises on unstable surfaces or generally for SMT. Findings suggest that SMT-exercise should be performed maximal 2 minutes by healthy persons without break. This needs however an additional research.

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P15  
Patellar tendoniti hastaların rehabilitasyonunun konservatif tedavi ve plyometrik egzersizleri

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Amaç: Patellar tendonitis (sığır yemiği) dizi, kapakların altında ve patella tendonunun üstüne ağırlık ve hassaslık karakteri olarak, volei oyuna, basketbol ve yürüyüş olarak gibi yürüyüş sırasında gerekli spora da sık görüür. Bu çalışmamızda, patellar tendoniti hastaların rehabilitasyonunda konservatif tedavi ile plyometrik egzersizlerinin karşılaştırıldığı, Gerçeğ ve öne sürülük Kilo oranlarının 52,3 kg ve yaş oranlarının 24,6 yıldan olan 27 etmek isterken oyununun seçildi. Kb Bant tipi olarak alınan 8-12 KB qui teknolojisi ile eğitildi. 

Klinik tanım alan ve gürültülerinde subakut patella tendonitleri konfirme edilen olgular iki gruba ayrıldı: Desteäge, bu, nonsteroid anti inflammatory ilaçlar (NSAllar), sıcak duş ve yazınının de içinde bulunduğu konservatif tedavi grubu (KTO) (n=12). Hatta 5 gün sürence 8 hafta boyunca spastik plyometrik egzersiz uygulama, patellar tendonitis grafi (PEG) (n=15). Testlerin tamamı olgulara, ağırlık, hareket kapasitesi, hassaslık ve kuvvet dışinin uygulandığı. Sonuçlar ANOVA testi ile analiz edildi ve anlamlılık p<0.05 olarak tespit edildi. 

Sonsuzlu istatistiksel analizler sonucunda sonuçlarımız her iki cinsiyetin de ağırlığı, hassaslığı ve hareket kapasitesinin alınmaları yolda etkilediği gösterdi. Ek olarak plyometrik egzersiz, PEG'deki kuvveti artırdı. Bu çalışmada kuvvet yönleri, plyometrik egzersiz alan gruplarındaki istatistiksel olarak anlamlı fark görüldü. 

Tartışma: Plyometrikler, etkinlikten kasın anı dinamik yüklenmesi veya gerilmesi yarlı olarak, kuvvetle ve kas kontraksiyonlarıyla karakterize egzersizlerini göstermektedir. 

Asında plyometrikler, alama, sekmek, ziplama ve sıçramak. Bu ham kurallarındaki anahtar nokta, kuvveti artırarak sonraki kas gruplarından kas liflerinin halfa uzaması.

Conservative treatment and plyometric exercise in the rehabilitation of patients with patellar tendinitis

Purpose: Patellar tendonitis (jumper's knee) is common in sports involving jumping such as volleyball, basketball, and high jumping that is characterized by pain and tenderness below the knee cap and over the patella tendon. The purpose of this study was to compare the effect of conservative treatment and plyometric exercise in the rehabilitation of patients with patellar tendinitis. 

Materials and methods: 27 male elite volleyball players selected with average weight and age 92.3 kg and 24.6 yrs respectively. Subjects with clinically diagnosed and imaging confirmed sub acute patella tendinitis were divided into two groups. Conservative treatment group (CTG) taking conservative treatment included rest, ice, non-steroidal anti-inflammatory drugs (NSAIDs), hot shower and swimming (n=12). Plyometric exercise group (PEG) executed in five days a week for 8 weeks a program of specific plyometric exercise (n=15). All tests were applied to subjects by assessing pain, range of motion, tenderness and power. The results analyzed by ANOVA and the significance was set as p<0.05. 

Results: After statistical analysis our results indicated two different amount in deformities among women who work in university approximately 8 hour a day and minimum for 6 years. Percentage was included 83.6% (n=51) for asymmetric shoulder and 26.2% (n=16) for scoliosis in all of subjects (p<0.05).

Conclusion: As a result obtained from this study it can be said that asymmetric shoulder is too rir. So, special program for these persons is very helpful for protection or treatment of it. Although some deformities such as scoliosis aren't very prevalent but it is able to create some problems in future, for example, it can lead to respiratory inadequacy. Therefore, in order increasing of women role in society and health promotion, identifying of types of physical abnormalities and correction of them is useful and necessary.

Epidemiology of asymmetric shoulder and scoliosis among non-athlete female university staff

Purpose: Purpose of this study was to epidemiologic identifying of deformities such as asymmetric shoulders and scoliosis among women that they work at university. 

Materials and methods: 61 adult women university staff with the same function selected for this research randomly. They were 22.7±4.1, 160.7±5.1, and 60.1±8.4 for age, height and weight respectively. 

Methodology for this study has been based on the New York test and posture screen were used to measure asymmetric shoulder and scoliosis in all of them. 

Results: After statistical analysis, our results indicated two different amount in deformities among women who work in university approximately 8 hour a day and minimum for 6 years. Percentage was included 83.6% (n=51) for asymmetric shoulder and 26.2% (n=16) for scoliosis in all of subjects (p<0.05).
Supraspinatus isokinetic strength: empty can or full can exercise?

Purpose: The aim of our study was to compare the isokinetic strength of the supraspinatus during empty can and full can exercises. Materials and methods: 30 female (mean age: 23.8±3.2 years, weight: 57.4±4.3 kg) and 23 male (mean age: 22.9±1.1 years, weight: 73.8±7.7 kg) participants were recruited for this study. Excluding criteria were determined to any shoulder problems or neurologic deficits. All isokinetic tests were performed using a Izomed 2000 Isokinetic Dynamometer at 60°/sec and 180°/sec both full can and empty can exercises. Participants completed to numeral elevation exercises in the scapular plane on dominant shoulder as the full can and empty can. Results: Results for peak torque no significant differences between the full can and empty can exercises in concentric phase at 60°/sec (X̄SD: 34.5±12.5, X̄SD: 29.5±18.8, respectively) and 180°/sec (full can X̄SD: 108.5±88.3, empty can X̄SD: 108.5±64.9, respectively) (p>0.05). No significant differences between peak torques during the full can and empty can exercises in eccentric phase at both 60°/sec (X̄SD: 59.9±37.65, X̄SD: 58.3±44.45, respectively) and 180°/sec (X̄SD: 54.3±49.32, X̄SD: 54.3±39.29, respectively) (p>0.05). In full can and empty can exercises for total work there were significant differences in both concentric and eccentric phase at both 60°/sec (full can X̄SD: 55.1±31.41; empty can X̄SD: 47.6±11.97 during concentric phase; full can X̄SD: 123.7±97.29; empty can X̄SD: 108.5±88.3 during eccentric phase) (p>0.05). We found significant differences between full can and empty can exercises at 180°/sec during concentric phase (X̄SD: 71.0±28.66, empty can X̄SD: 71.0±36.6, respectively) (p>0.05). Conclusion: These findings support that the decrease of supraspinatus muscle performance may be related to the negative test result of empty can and scapulothoracic muscle dysfunction. Physiotherapists may use these findings for the conservative treatment of supraspinatus muscle dysfunction to increase of supraspinatus muscle strength in the full can position.

Acute effects of ankle taping on ankle range of motion measures in healthy subjects

Purpose: The ankle joint is the most frequently injured part of the body for many kinds of sports. Most common reasons for these injuries are forced plantar flexion while the ankle is in inversion and exceeding the physiological limits of the joint. The purpose of this study is to investigate the effects of adhesive taping on the ankle range of motion measures. Materials and methods: 26 voluntary female subjects (21.4±6.3 yrs) included in this study and all measurements were done by two physical therapists. Range of motion measurements were taken on the dominant ankle of each subject as the foot was bare and in the neutral position with a universal goniometer at four directions; dorsiflexion, plantarflexion, inversion and eversion. After first assessments, closed basketwork (gibbon) technique for taping applied on the dominant ankle, finally all measurements replicated right after taping. Paired t-test is used for the statistical analysis of the differences in range of motion. Results: In the statistical analysis, there were significant differences in limitations occurred for four of the directions of motion; these results for dorsiflexion p=0.0001, plantar flexion p=0.0001, inversion p=0.0001 and for inversion was p=0.0001. Conclusion: Ankle injuries are one of the most commonly incurred injuries in sports and generally caused by exceeding joint limits by ligament laxity or sport specific movements. The method of ankle taping we applied in this study can be used in the prevention of sports injuries by both limiting the ankle range of motion and providing increased proprioceptive input.
P19
Sağlıklı bireylerde ayak bileği Gibney bantlarının dikey schrama ve hop test sonuçlarına etkisi
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The effects of ankle taping on vertical jump and hop test results on healthy subjects
Purpose: Although the foot has been viewed as a static tripod or a semirigid support for body weight, it has primarily evolved for walking and its a dynamic mechanism. For a successful performance the biomechanics of foot and ankle complex must be studied in relation to the biomechanics of lower limb during walking. The purpose of this study was to investigate the effects of taping on ankle joint which plays an important role on open and closed kinetic chain rehabilitation on 2 of the functional tests belongs to the lower extremities, vertical jump and hop test. Materials and methods: 26 voluntary female subjects (21.46±1.63 yrs) took place in this study. All tests were performed on the dominant extremity for each subject. 3 different vertical jumps on dominant extremity and 3 different forward jumps on dominant extremity were performed by the subjects. Heights were measured using a cm. ruler and the average of 3 jumps was found out. Assessments done before taping were replicated after taping ankles. Closed basketweave (Gibney) technique for taping was used in this study. Results: As a result of the statistical analysis, fort he vertical jump test, as shown on the other studies, no significant difference was found between before and after taping status (p>0.74). We found a significant increase after taping status for the hop test (p<0.036). Conclusion: In literature, it was observed an increase on vertical jump tests after taping but that was not statistically important. This study had also explained the increases on the vertical jump and hop test. The results of this study showed that progressive proprioceptive input is provided by ligaments and joint capsule with improvement on lower extremity functions by using ankle taping.

P20
Spor yaralanmalarının etkileşen faktörler ve tedavide fizyoterapistin rolü
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Aama: Son yıllarda sporculardan beklenen performansın artışıyla birlikte, spor yaralanmalarının sıkılığı da artış göze Çarıkmıştır. Bu artış nedenlerini iş faktorları ve doğ faktorları olmak üzere ikiye ayrılmaktadır. Doğ faktorlar arasında antrenman metodları ve yarışma, yaza eğitimin, çevre ve meteoroloji, hava şartları; iş faktorları arasında ise yas, cinsiyet, kas güç, fleksibilite, ekstremiteler üzerindeki farklılıklar gibi kavramlar yer almaktadır. Uygulanan rehabilitasyonun etkileri de tedavi sürecini eikilediği bilinmektedir. Bu çalışmanın amacı, Marmara Üniversitesi, Beden Eğitimi ve Spor Yüksek Okulları spor yapan öğrencilerin yaralanmalarını, yaralanmalarında etkili olan faktörleri ve tedavide fizyoterapistin tercihine doğru duruşunu ortaya koymaktır. Gerçek ve yöntem: Bu çalışma ilk yöntemi kullanılarak 22 kadın ve 68 erkek gerçekleştirilmiştir. Toplam 90 sporcu Uluşlararası Olimpiyat Komitesi tarafından uluslararası ve Türkiye'deki modifiye edilmiş eden anlık verilim ve tüm sorulari kendisinden çevrilememiş istemmiştir. Sonuçlar: Bu çalışmanın sonucunda sporcuların % 78.2% hidrojen peroksid reaksiyonunun biriktiği, yani yaralanma sıkılığı göstericileri, aynı yerden % 42.2, % 78.8 antidoku bağlayıcı ve % 22.2 diğer olaya ile karışma sonucunun yaralanmalarda belirlenmeyiştur. Yaralanmalar en çok % 67.8 spor salonda ve % 51.1 antrenman sırasında, % 31.1 en fazla zıplarkan, % 56.6 açık havada ve % 63.3 hik havada sıkıştıktan yaralanmaları esasça eden faktörler olarak belirlenmiştir. Bununla birlikte yaralanmasının en önemli bir ortez veya bantlama kullanılmadıkları (% 79) ve tedavide % 12.3’si fizyoterapist bilir nedeni olarak bulunmuştur. Tartışma: Çalışmada, yaralanmada neden olan aktivite çeşitleri, en çok yaralanma sıkılığı gösteren bolgeler ve sporculardan tedavide fizyoterapistin rolü tartışılması.

Factors affecting sport injuries and the role of physiotherapist
Purpose: In consequence of increased performance expectation for athletes, more frequency of sport injuries was recorded. Sport injuries reasons can be classified for either internal or external factors. External factors include training methods and equipment, environment and insufficient warm-up and condition. Internal factors include age, sex, muscle strength, flexibility and length difference for extremity. Aside that, rehabilitation effectiveness can also influence treatment period. The aim of this study was to determine injuries frequency, factors that may be effective on these injuries and frequency of physiotherapist choices on individuals from Marmara University School of Physical Education and Sport. Materials and methods: This study was conducted on 22 females and 68 males via survey method. Total 90 participants in this study were responded by the survey of International Olympic Committee and translated to Turkish and all questions were responded by himself/herself. Results: As a result, all athletes indicated to injury that the highest injury rate of 7.8% posterior of left knee in athletes, 42.2% from same sides, sudden initiation of injury as 78.8% and 22.2% after finishing the other player. The most affecting factors to all injuries were the most 67.8% in the sports hall, during training as 51.1%, the most 31.1% while jumping, outdoor activities as 63.6% and 63.3% at warm weather condition. Therefore, all athletes were no wear the orthosis and taping material during injury (79%) and done with the treatments after injury to physical therapist as 12.2 as that they were known about physical therapist at the protection. It was discussed type of activity, regions and the highest rates of injuries and the role of physiotherapist in the club or during therapy.
P21
Subakromiyal sıkışma sendromunda farklı iki egzersiz programının ağrı üzerine etkileri

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Amaç: Akut ve/ora subakromiyal sıkışma sendromu (SASS)‘da farklı iki egzersiz programının ağrı üzerine etkileri araştırıldı. Gereç ve yöntem: Çalışmaya 23 kadın ve 7 erkek (ort.yaş 32.2; dağılım 34-70) hasta alınındı ve rastlantsal yöntemle 15' ır kişilik iki grubu ayrıldı. Birinci grubun 90° ve altında 2: gruba ise 90° ve üstünde T-bar (wand) egzersizleri, posterior ve inferior kapsül germe ve internal rotasyon artırıcı egzersizler verildi. Hastalar steroid olmayan antieniaflamatur ilaçlarla (NSAI) desteklendi. Ağrı için transkutanöz elektrik stimulasyonu (TENS), odem ve infiamasyon için kesikli ultrason (US) ve buz uygulandı. Tedavi süreleri 2 hafta (10 sesans) idi. Hastaları tedaviden önce, tedaviden sonra, 2 ve 16 hafta sonra, görsel analog skala (VAS) ve yüz skalası, eklem hareket açığı (FAHA), Constant omuz skorlaması, Beck depresyon ölçeği, hasta / terapist memnuniyeti değerlendirildi. Ezem süresi 16 hafta idi. Sonuçlar: Her iki grupta da Beck depresyon ölçeği ve Constant skorunun ağrı parametresi azaldı, hasta ve fizyoterapist memnuniyeti arttı, fakat gruplar arasında istatistiksel bir fark bulunmadı. 16 hafta sondan yüz skalası 1. grupta istatistiksel anlamlı azaldı (p=0.01). VAS tedavi sonunda 1.grupta (90° ve altı) 2. gruba göre istatistiksel anlamlı azaldı (p=0.03) fakat 16 hafta sonunda bu anlamlılık devam etmedi. Tartışma: Her iki egzersiz programı da hastaların ağrılarını azaltması sağlamlı. Tedavi sonunda VAS‘in, 16 hafta sondan ise yüz skalarının 1.grupta istatistiksel anlamlı olurak azalması hastaların egzersizlerinin 90° altında yani ağırlık angıda çalışmalarnın sonucu olarak açıklanabilir.

The effects of two different exercises programs on pain in subacromial impingement syndrome

Purpose: The aim of the study was to evaluate the effects of two different exercises programs on pain in subacromial impingement syndrome (SAIS). Materials and methods: 23 female and 7 male patients (mean age 32.2 years; range 34 to70 years) were enrolled to the study. Patients were randomly allocated into two groups, each group consisting of 15 patients. The first group below 90°, the second group above 90° performed T-bar (wand) exercises, stretching of the posterior, inferior capsule and internal rotation exercises. Both groups were also given non steroid anti inflammation drugs (NSAID) and were applied transcutaneous electrical nerve stimulation (TENS) for pain, intermittent ultrasound (US) for edema and inflammation, and ice pack. The subjects were treated for two weeks (10 sessions) and evaluated by Visual Analog Scale (VAS), face scale, range of motion (ROM), Constant score, Beck Depression Scale, patients’therapist global assessment before and after the treatment, 2 and 16 weeks follow up. Results: In both groups, Beck Depression Scale and pain into Constant score was decreased, and patients’therapist global assessment were increased but there was no significantly different between the groups. Face scale was significantly better in the first group at the end of the 16th week (p=0.01). VAS score was better in the first group after the treatment (p=0.03) but this differences did not maintain at the end of the 16th week. Conclusion: Both exercise programs induced pain reduction. It can be explained significant decrease in VAS after the treatment, and in face scale at the end of 16th week in first group by performing exercises in below 90° (free pain ROM).