ORAL PRESENTATION

Aladağ Hall
Turkuaz Hall

FPA # 1 THE EFFECTS OF CHRONİC EXERCİSE ON RATS PERİPHEAL HEMATOPOİETİC PROGENITOR CELL POPULATİON

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Several studies have shown that exercise can alter peripheral blood parameters but the effects of exercise on bone marrow hematopoietic progenitor cells are not known yet. The purpose of this study is to examine the effects of heavy chronic exercise on hematopoietic progenitor cell mobilization from bone marrow to peripheral blood. 36 female wistar albino rats were divided four experimental group:

1) Null control group (n=8); 2) Unexercised, granulocyte colony stimulant factor (G-CSF) injected (200 ug/kg. day) group (n=8); 3) Chronic exercise group (35m. min-1 on a radent treadmill with a 19 % gradient for 20 min, 3 days a week for 6 months, n=10); 4) Choronic exercised (as 3th group) and G-CSF injected (as 2nd group) group (n=10). All groups anesthetized with sodium penthotal (35/mg/kg), and peripheral blood were collected under sterile conditions.

Mononuclear cells (MNC) were collected with density gradient and cultured in methylcellulose-IMDM medium. After 8 days of incubation, colony forming unite-granulocyte, monocyte (CFU-GM) and burst forming uniteerythroid (BFU-E) colonies scored under an inverted microscope. Colony forming unite-gronulocyte, erythrocyte, machrophage, megakoryocyte (CFU-GEMM) Colonies were scored at 14th days. Statistical analysis was performed with one way ANOVA and post hoc Turkey-Kramer's test. Peripheral blood CFU-GM, BFU-E and CFU- GEMM colonies were induced by chronic heavy exercise (for controls, respestively 0.62 ± 0.21 ; 0 ± 0.0 ; 0.17 ± 0.17 versus for exercise group, respectively 11.73 ± 2.55 ; 4.31 ± 1.03 ; 1.99 ± 0.49).

The results of this study denoted that choronic heavy exercise induced the mobilization of hematopoetic pregenitor cells from bone marrow to peripheral blood.

FPA # 2 MUSCULAR OSCILLATIONS, FORCE AND OSTEOPOROSIS

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Purpose:

Actual results and ideas from theoretical sciences like non-equilibrium thermodynamics, chaos-theory and synergetics have been transferred to biomedicine. The special transfer of this know-how to the research-field of intercellular-matrix and matrix-regulation, might show new therapeutic approaches for chronic diseases in future time. The concrete question in the following work is, how far there might be practical consequences for the treatment of osteoporosis from these new points of view. (1,2,5,7)

Cross sectional studies in a normal population where oscillations in skeletal musculature were measured, gave us first information of the importance of these micro-movements that become coherent under isometric conditions. (4) Regarding to physiology of skeletal muscle and to physiology of the bone shows the direct link of these two different organs by microcirculation and interstitial matrix, that regulates homeostasis of both systems. The question is how far "muscular degeneration" could be correlated with bone-loss and insufficient microcirculation.

Material and Method:

Ten patients suffering from osteoporosis as well as ten healty people were examined by measuring the oscillations (frequency and amplitude) of their skeletal muscles during exercise with defined weights.(3)

As sensors we fixed high resolution piezo-ceramics on the skin surface to registrate the acceleration of the muscles. The acceleration dates were transferred into sum-spectrums in the range of 3-80Hz.

Results:

The sum-spectrums of muscular activity between the two groups show significant and characteristic differences in frequency and amplitude. From point of " synergetics" the dates from the patient group show a lack of coherence in muscular oscillation. (2,7)

Discussion:

The results prove that for the pathogenesis of osteoporosis, loss of bone-mass (space pattern) is accompanied by a deviation of the rhythms (time pattern) of the skeletal muscle from normal.

Conclusion:

In front of this background it makes sense to start a therapy by activation of the normal rhythm of the skeletal muscles to support its coherence properties; passively for example by "Matrix-Rhythm-Therapy" and later actively as causal therapies without any side-effects.(6)

This therapy reactivates and / or restores body-intrinsic "dynamic ordners for homeostasis" according to the results from basic research and theoretical sciences.(1,2,4,5,6,7)

How far a lack of muscular coherence in osteoporosis patients (time-pattern-analysis) can be used as a new dynamic test for its prevention, has to be proven.

FPA # 3 MATRIX-RHYTHM-THERAPY A NEW APPROACH FOR PREVENTION IN SPORTS, TREATMENT OF CHRONIC ILLNESSES AND FOR REHABILITATION.

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This study applies recent concepts from the fields of cybernetics, synergetics, and non-linear thermodynamics of irreversible processes to bioscientific problems in medicine. These concepts proceed on the presumption of the existence of universal space-time structures.

Within the field of medicine, this above all allows previously-neglected temporal structures to regain their original significance. Rhythmic, temporal processes in the realms of substance-concentration and enzymatic activity influence the physiological events occurring within the body in an organizational manner (coherence). When such time-based sequences undergo chaotic mutation they lose these organizing properties.

From a cybernetic, control-technical aspect, chronic illnesses are conditions of decompensated regulatory mechanisms which occur subsequent to threshold-value reactions at micro levels. They are the consequences of phasic transition due to processes of adaptation to

a chronically altered milieu or function, the ultimate result of which is the loss of temporal-rhythmic organization, i.e. chaotic mutation of cellular dynamics. Thus, chronic illnesses are "dynamic illnesses". Correspoding to the insight gained from this viewpoint, the apt objective is to identify such bodily-intrinsic organizers (attractors) and use them therapeutically. This therapeutic goal, therefore, is to regenerate and stabilize the basic autonomic rhythm of the organism and/or to change the amplitude and frequency values of the nutritional-flow density at the locality of the bodys cells (the cell matrix) in such a manner as to exclude an existence of deterministic chaos.

Ultimately, all boily structures which recognize electromagnetic, chemical, or mechanical rhythms are to be considered organizers of that organism.

On the example of the skeletal musculature, viewed as a neuromyogenous, rhythmic structure (and, with 40 % of the entire bodily mass, the largest organ of the body as well), the mode of action of matrix-rhythm therapy is first theoretically developed, then introduced in actual application for pro-sports and rehabilitation.

FPA # 4 PHYSIOLOGICAL EFFECT OF THE PARTICULAR MEANS IN TRAINING OF ELITE SWIMMERS

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Our previous study of the inner structure of a maximal swimming specific test showed that the better sports results are related to an increased cardiovascular system (CVS) reactivity and acquisition of higher HR limit values.

In this connection we have investigated the inner structure of control specific swimming tests and key swimming series with applying of particular training means in relation to the exercise and recovery heart rate (HR) dynamics, blood lactate accumulation and sports-pedagogical characteristics in view to analyze the physiological effect in the different zones of adaption.

The HR of highly qualified swimmers is registered for every 5 sec by water sports tester and computerized graphic presentation, the blood lactate also has been determined dynamically.

There is no discussion of the data characteristic of the energy regimen around anaerobic threshold. We have analysed the results differentiating the zones of limited and insufficient adaptation concerning training effect.

This approach to the problem to study not only the control specific swimming tests but the key swimming series as well has given to us the possibility to determine physiological effects of the basic and the particular training means.

The data analysis leads to the conclusion that the sports results are related to an increased CVS reactivity, higher HR limit values and faster HR recovery corresponding with greater activity of the anaerobic mechanisms of energy supply, respectively higher blood lactate level.

FPA # 5 EMG ANALYSIS AT OLYMPIC WEIGHTLIFTING

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An electromyographical study was made in romanian weightlifters (n=12 persons), investigating the evoked motor potential (EMP), during the training sessions and competition.

The results scored by us showed that the values of these parameters (amplitude and distal latency) could give useful indications concerning the level of sports preparation degree and the sports value.

The periodical investigation of the neuro-muscular system contributes to the scientifical leading and management of the sports training and to the increase of the sports performance.

FPA # 6 ELECTROCARDIOGRAPHIC AND ECHOCARDIOGRAPHIC CHARACTERISTICS OF FORMER TOP ATHLETES

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The aim of the study is to determine the rate of ECG findings and heart structural and functional characteristics of former top Bulgarian athletes.

552 subjects (441 male and 111 female athletes) were examined. They have stopped active competitive participation more than 6 years ago. ECG was performed on all of them and 48 were examined by echocardiography to determine the cardiac dimensions and left ventricle systolic and diastolic functions by M-mode, 2-D-mode and Doppler technique.

Our results show low rate of ECG deviations in comparison to active athletes, most of them of the type of athlete's heart. No significant ECG differences were found compared to sedentary individuals of the same age.

Echocardiography showed normal left and right ventricle dimensions and volumes, low grade left ventricular hypertrophy in some subjects and normal systolic and diastolic left ventricle function.

We conclude that the adaptation changes characteristic of the athlete's heart regress during the long period of over 6 years after competitive sport activity and the heart structure and function resemble those of sedentary individuals of the same age.

FPA # 7 SOMATOTYPE CHARACTERISTICS OF FEMALE ATHLETES

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The aim of this research was to study the somatotype characteristics of Bulgarian female athletes in relation to their particular sport and to constitute somatotype model characteristics with respect to the improvement of methods of selection and training. Subjects to the study were 1132 females practising 27 sports. The somatotype anthropometric method of Hearth- Carter (1967,1990) was used. The data were submitted to basic statistical analyses.

The comparison of sport-related female somatotype characteristics proved that highest endomorphic values were typical for throwers (4,75), followed by rowers, soccer players, judists, handball players, weightlifters, kajak rowers, which have similar endomorphic values.

The lowest values, differing significantly from these of other female athletes, were found in pentathlon and gymnastics and rhythmical gymnastics athletes (1,53). Highest mesomorphic values were estimated in female weightlifters (6,09)-similar to these in male athletes. The next group in descending order was to be divided into two sub-groups following the mesomorphic component values-sports with significant muscle power requirements and technical sports. The latter sub-group consisted of track and field-middlie distance running, basketball and rhytmical gymnastcs, which did not differ in their relative muscular-sceletal development (2,89). The ectomorphy was highest in rhytmical gymnastics (4,91). As judged by their ectomorphy values, the gymnasts differed from all other female athletes. The statistical differences were relevant to those of throwers in track and field and weight-lifters (mean ectomorphy is 0,75). The somatotype in female athletes is predominantly of the central, balancad mesomorph and endo-mesomorph type. In most events the differences are significant but there are sports with similar somatotype characteristics.

In conclusion. These results can be used in the morphological control and has to be taken into consideration in the selection and cooching of female athletes.

FPA # 8 PHYSICAL FITNESS OF ELITE FEMALE VOLLEYBALLERS

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Purpose:

The purpose of this study was to compare body mass index, respiratory function tests and level of phsical fitness between elite female volleyballers and control group.

Subjects:

In this study, we searched the physical fitness and respiratory function of 23 athletes of female volleyballers and 23 females university students who has similar physical characteristics.

Fitness Assessment:

The selection of motor and musculoskeletal test items to the health-related fitness test batery was based on a literature rewiev.

It was applied balance tests (standing on one leg with eyes open, closed, and head turns) for motor fitness, push-ups, isometric grip power, lateral flexion, sit-reach flexibility tests for musculoskeletal fitness.

Respiratory Assessment:

Respiratory function tests included vital capacity (VC), forced vital capacity (FVC), forced expiratory volume (FEV1) and peak expiratory flow rate (PEF).

Results:

The level of physical fitness of athletes were significantly higher than controls ($p<0.05$), expect flexibility tests. Furthermore, we found that statistically differences were not between elite female volleyballers and control group in the some of respiratory parameters (FVC,FEV1 and PEF) ($P>0.05$).

FPA # 9 EFFECTS OF PHYSICAL ACTIVITY, BODY WE COMPOSITION ON BONE MINERAL DENSITY PREPUBERTAL GYMNASTS

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The purpose of this study was to examine the relations physical activity, body weight and composition on b density in female prepubertal gymnasts and sedentary Subject were 14 female prepubertal gymnasts ('age 10. 7 healthy sedentary controls age (10.85±0.89). Dual e absorptimetry (Lunar DEXA) was used to determine density (BMD) and to assess body composition. BMD to height as BMD/height.

The gymnasts were significantly lower in weight (28.1 height (140.42 and 147.85) and %body fat (%14.40 a compared with controls. Although, the gymnasts had compared wit controls, this was not significantly imp adjusted to height, whole body BMD (BMD/H significantly higher in gymnasts.

In conclusion, gymnasts training was associated with measures, and this was related with high lean mass of t

FPA# 10 STUDY ABOUT THE INCIDENCE OF SCOLIOSIS IN SPORTSMEN SELECTION

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The sports medical selection represents the main novadays high level sports activity. In this study the been made at 3 levels: The initial (primary) selection, t (pubertary) and the final (tertiary) selection. The scolio has been put on anthropometric measurements, o physiological and pathological antecedents and finally measurements. The scoliosis cases have been classifie (easy, medium, grave, very grave) and divided in functi characteristics (dextroconcave or dextroconvex, structural, the degrees of vertebral rotation, the presen etc.)

The study has been made during 7 years (1992-19 made on 3209 young sportsmen. A number of 2005 (6 at the primary selection, 846 (26,17%) at the second and 364 (11,35%) at the tertiary selection. Scoliosis 460 (14,33%) young sportsmen, out of which 361 primary selection, 73(8,69%) at the secondary s 26(7,14%) at the tertiary selection. In what concerns scoliosis 315(68,48%) were the first degree (164-52, 151-47,4% boys), 120(26,08%) the second degree (and 60-50% boys), 20(4,35%) were the third degree (and 8-40% boys) and 5(1,09%) were the forth degree and 1-20% boys). In what concerns the degree of (60,2%) were dorsal, 117(25,5%) were lumbar and mixed. Finally, through the stastistic processing of data been made corelations concerning the way of appearan the hereditary antecedents, the height and the weight, the rachitis prophylaxis, the period of appearance, the the actual sports activity, the presence of pain etc.

The conclusions were very interesting and the obtained painted out that the scoliosis at the young sportsm plurifactorial reality, which many times, could be improved and often good sport results can be reached

FPA# 11 CONSCIOUS AND UNCONSCIOUS KT-1000 MEASUREMENTS

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The KT-1000 arthrometer is an instrument to measure anterior-posterior displacement of the tibia to evaluate the knee instability. Some reports indicated that the reliability of anterior laxity measurements obtained by using KT-1000 arthrometer were questionable. The lack of muscle relaxion is one of the greatest source of measurement error with the arthrometer. In an attempt to evaluate the effects of muscle relaxion on KT-1000 assessment, the laxity measurements of 22 patients (44knees) in both conscious and unconscious states were obtained by using 15, 20, 30 pounds and manual maximum anterior displacement forces.

Twelve of the patients had ACL deficiency on one knee, while the others had normal anterior curiciate ligaments. All conscious and unconscious KT-1000 measurements of 44 knees and, conscious and unconscious side-to-side differences of 22 patients were evaluated. T-test for paired samples was used in statistical assessment.

The mean KT-1000 measurements of 44 knees during conscious state at 15, 20, 30 pounds and manual maximum anterior displacement forces were 4.2, 6.0, 8.3 and 11.5 mm respectively. The same values for the same acting forces during unconscious state were 4.8, 6.8, 9.3 and 13.1 mm. The side-to-side mean differences at 15, 20, 30 pounds and manual maximum anterior displacement forces for conscious state were 1.5, 1.9, 2.5 and 4.8 mm respectively. The values for the same acting forces for unconscious state were 1.5, 2.1, 3.4 and 6.2 mm. All the differences between the conscious and unconscious measurements were statistically significant ($p=0.000$). There were no difference between the conscious and unconscious side-to-side differences at 15 and 20 pounds ($p>0.05$), while the differences at 30 pounds and manual maximum were statistically significant ($p=0.009$, $p=0.023$ respectively).

The present study demonstrated that muscle relaxation affects the KT-1000 measurements. We belive that KT-1000 testing device is not an instrument to substitute for a through history or physical examination, but it seems better to use this instrument to support them.

FPA# 12 POSTEXERCISE INCREASE IN NITRIC OXIDE IN FOOTBALL PLAYERS WITH MUSCLE CRAMPS

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Nitrit oxide, a free radical inter and intracellular messenger molecule, is important in exercise physiology. This study tested the hypothesis that serum nitric oxide concertrations change after strenuous exercise with severe generalized muscle cramps. The study group consist of 72 professional football players (4 team) in preseason training. All players concentrations of serum nitrite and other serum chemmicals were detrmined during their preseason evaluations and compare with the concantrations in 45 serum samples taken from 30 of those some players who required intravenous rehydration for severe generaliyed muscle cramps after a training session. Player weight and percentage of body fat were significantly higher in players who received intravenous fluids than in players who did not. The serum of players requiring intravenous hydration slowed evidence of skeletal muscle breakdown (increases in Lactate dehydrogenase, creatinine phosphokinase, aspartate aminotransferase, and alanine aminotransferase) and of dehydration (elevations in protein, blood urea nitrogen, and cholesterol). The major finding, however was a nearly %300 increase in serum nitrite concentrations in players requiring rehydration. There were no correletions between concentrations of nitrate and of any of the other serum chemicals. These data support the hypothesis that large amounts of nitric oxide are synthesized in professional football players after strenoous exercise with severe muscle cramps. The study desing did not allow us to determine whether this increase in nitric oxide was due to exercise or muscle cramps or both, but it does provide a basis for evaluting these relationships.

FPA# 13 ANTERIOR LOCALIZATION OF THE MEDIAL MENISCUS AND ITS INSERTION: AN ANATOMIC STUDY

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The menisci are known to be dynamic structures which posses an important role at the distribution of load at the knee. The anatomic structure of the medial meniscus and when a load is applied to the joints due to peripheral localization, it is tend to extrude externally. And this condition gains more importance when a trauma occurs.

Materials and Method:

In order to definitely determine the soft tissue and osseous anatomy of the insertion locations of the medial meniscus anterior horn of the knee, and assess the relation of the anterior cruciate ligament and capsule, a morphological study was performed at the 26 knees of 13 cadavers.

At this study, in spite we had planned to investigate the specifications of the insertion locations of the anterior cruciate ligament and capsule, the study was slid to the zone where as adhering sites and localization of the medial meniscus tibia was more attracting.

Results:

Three types of insertion location were determined related with the anterior horn of the medial meniscus. Type1: The adhering site was a flat localized region at the intercondylar region of the tibial plateu. (16 case) (%61.5). Type2: The insertion location was the downward slope from the intercondylar region of the plateau of the medial joint (6 case) (%23). Type 3: The insertion location was designated as the region that has been localized to anterior slope of the tibial plaueau. (4 case) (%15.3).

The insertion location of Type4,which has been described at the literature, was the type of adherence where no any firm bony insertion of the medial meniscus were encountered and among the cases we were investigating this type of insertion was not coincided.

Conclusion:

At the final stage of this anatomical study, important subjects were reviewed and discussed which were related with the insertion anatomy of the medial meniscus to the anterior and the luxation and subluxation of the anterior horn, relation of anterior knee pain, planning consider to the anatomic insertion at medial transplantation procedures according to their insertion locations.

FPA# 14 LAX PERIPHERAL ATTACHMENT OF THE MENISCI

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Purpose:
Increased mobility of the menisci with probing the capsular attachment is not an uncommon finding during arthroscopy of the knee. Its etiology and clinical significance remains unclear. The purpose of the present study was to analyse the history and the arthroscopic findings in knees with hypermobile menisci and to report the short-term results when such menisci were totally or partially left alone.
Materials:
In a review of arthroscopy forms of our patients, 41 knees of 38 patients were noted to have had meniscal hypermobility due to lax peripheral attachment. These patients (25 men, 13 women; av. age 33, range 14 to 58 years) were analysed as regards the etiology and arthroscopic findings. 12 patients were lost to follow-up. The second part of the study is the clinical follow-up of the remaining 26 patients (27 knees) in which a hypermobile meniscus or most of it had been retained. Hypermobility was present in medial meniscus (MM) in 18, in the lateral meniscus (LM) in 8, and in both menisci in 1 knee. The contralateral menisci underwent varying degrees of resection in 8 knees, and were intact in 12. In the remaining 7 knees the posterior one- third of the hypermobile menisci were resected due to tears. Altogether 9 lateral meniscectomies and 6 medial meniscectomies of varying degrees were performed for meniscal tears. The anterior cruciate ligament (ACL) was torn in 10 knees in the follow-up group. No ACL reconstructions were done. No surgical procedures were done in 5 of 27 knees.
Results:
27 of 41 knees (66%) had a history of trauma; 11 of these were athletic injuries. The ACL was either totally (n=13) or partially (n=3) torn in 39%. Lax peripheral attachment was present in the MM in 27, in the LM in 13, and in both menisci in 1 knee. Waviness of the free edge of the meniscus (flounce) was noted in 9 knees (22%). Clinical follow-up of 27 knees was av. 34 months (range 1 to 6 years). At follow-up 22 knees (81%) were better, 1 knee showed no improvement, and 4 knees worse. 1 knee sustained a significant trauma between the operation and follow-up. 8 knees had joint line tenderness and/or positive McMurray's test. Locking or catching was present in 2 knees. Preop. Lysholm score of av. 69 (range, 32 to 91) was av 85 (range 54 to 100)at follow-up. Tegner activity levels were; preinjury 5(3-7), preop. 3(1-4), follow-up 4.2 (2-7).
Conclusion:
Two types of lax peripheral attachment of the menisci are distinguished : Traumatic and nontraumatic. Traumatic cases represent the partially healed peripheral tears. Nontraumatic cases are probably due to an intrinsic structual defect-most likely of the collagen-of the joint capsule. For mild to moderate activity levels hypermobile menisci do not seem to be at increased risk of tear in most of the cases in the short-term.

FPA# 15 POSTOPERATIVE KYNESITHERAPEUTIC PROGRAM AND RESULTS OF ITS APPLICATION TO ARTHROSCOPIC REPAIRED MENISCUS ATHLETES

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Purpose of the study:
Research and workout of kynesitherapeutic program and analysis of results from its application to athletes and physical labour workers with arthroscopic repaired meniscus.
Material and Methods:
Twelve patients (11 male and 1 female) who underwent arthroscopic meniscus repair between 1994 and 1998 were exposed to 4 stage kynesitherapeutic program. Six of them were competitive sportsmen and the rest of them were moderate and heavy workers. Four of the patients were with associated rapture of ACL. Average level of Tegner score was 6.6 (4-10). The average age was 26.8 (13-48).
Kynesiological evaluation of condition of the knee joint was carried out by means of myotonometry of the quadriceps muscle, measures of the thigh and the knee, range of motion, test for hydrops, manual muscle testing.
The first stage (up to the 30th day) combines the necessity for rest of the knee and mobilization of the structures around it. In the following three stages kynesiological methods are applied in accordance with functional condition of the knee for the moment, emphasizing the improvement of the trophic of the joint, achieving maximum strength and hypertrophy of the quadriceps muscle, quick reaching full range of motion, as the ultimate purpose is adjusting to high pressure of the knee joint.
The most widely used methods are:
Suspending theraphy, cryotherapy, classical and supperpouned electrostimulation, pullitherapy, bicycle training, manual and underwater massage, fitness, therapeutical swimming, jogging.
The program lasts 24 weeks.
Results:
The final evaluation is made according to Lysholm score. Eleven patients (91.7%) were evaluated as normal, one-as nearly normal. All patents have achieved their previous state.
Conclusions:
Having analyzed the results and the patients' subjective estimation we consider the above mentioned kynesitherapeutic to be efficient and promising for recovering after arthroscopic meniscus repair.

FPA# 16 THE ROLE OF SHOE-SURFACE RELATİON AT NATURAL GRASS FIELDS IN ACL INJURIES OF PROFESSIONAL SOCCER PLAYERS

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ACL is the most important stabiliser element of the knee joint.
The injuries of ACL cause serious problems for the activite athletic performance.
From this point of view; prevention of ACL injuries is very important for the professional athletes.
In this study we followed the athletes who applied to a private orthopedy clinic between 1996 and 1998. We intensified our interest on the athletes who got the diagnose of ACL injury and followed them through their treatment procedure. Then we developed a questionnaire and applied this from to 28 male, professional soccer

player who had had ACL injury and treated surgically.
For all the cases Lachmann and Anterior drawer test had been performed and radiography and MRI images had been evaluated for diagnose.
All the cases returned to professional competitive activity after treated.
In the ACL injuries of soccer; the characteristics of surface and the composition of the shoe play an important role together. At 14 cases (%50) the feet of the players at the same side by the injured knee, were fixed to the ground and there was not any charge from any other player. At five cases (%18) there were charge by the other players but the injured players complained of their feet fixation to ground at the moment of injury. From a preventive perspective there are much to do with soccer shoes and soccer field grounds.

FPA# 17 PATOKINEZIOLOGICAL ALTERATIONS OF THE LIGAMENTS OF THE ANKLE IN SOME FORCE-RELATED SPORT DISCIPLINES

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In sport disciplines demanding firm contact with the ground for prolonged periods of time, the foot and ankle are constantly subject to considerable physical strain which is absorbed by the ligamentuos structures. The static positional momentum of absorption of the lower extremity, with the feet fixed in the horizontal plane, leads to a lateral shift of the loading forces. The axes of mechanical impact cross at the level of the ankle joint and strain the lateral ligamentuos structures because of the resulting talus rotation and foot supination. The continuos straining of the ankle ligamentuos structures close to the threshold of mechanical endurance leads to compensatory changes in the structure of the ligaments. This was the basis of our triple independent test study of the ankles of 23 young males training wrestling for more than 3 years.
We established increased cross section of the anterior talo-fibular ligament (ATFL) and calcaneo-fibular ligament (CFL), along with markedly prominent insertion sites-in 18 athletes. Apart from that a 5° lateral joint motion over the physiologic range was documented. The continuos overstraining of the ankles of the athletes practicing force related sports results in structural changes predominantly in the lateral ligaments of the ankle joint.

FPA# 18 ARTHROSCOPIC TREATMENT OF ANTEROLATERAL ANKLE IMPINGEMENT CAUSED BY THE DISTAL FASCICLE OF THE ANTERIOR INFERIOR TIBIOFIBULAR LIGAMENT

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Purpose:
Although meniscoid lesion and synovitis are well described as causes of anterolateral impingement syndrome of the ankle, little is known about a separate fascicle of the anterior inferior tibiofibular ligament (AITFL) causing anterolateral impingement. The present study is the first one which gives the results of artroscopic treatment of this particular lesion in patients with a history of ankle sprain.
Matreals and Methods:
21 patients with a history of previos inversion sprain (s) and a clinical diagnosis of choronic ankle instability and anterolatrel ankle impingement comprised the study group. There were 14 women and 7 men whose ages ranged between 11 to 68 years (av. 31 years). Av. duration of symptoms was 24.1 months (range 4 to 60). 14 patients underwent arthroscopy after a failed conservativa treatment of three months. Arthroscopy was done earlier in the remaining 7 patients becauce Physiotherapy aggravated the symptoms. Arthroscopy revealed-in every case-a ligamentous band extending obliquely from the anterolateral corner of the distal tibia to theanteromeial aspect of the lateral malleolus just above the origin of the anterior talofibular ligament. The band was obscured by hypertrophic synovitis in most of cases. Following anterolateral synovectomy, it was excised. Histopathological analysis of the band was obtained in 4 cases which revealed ligamentous tissue with regular collagen fibrils. Subjective and objective evaluations were done according to the Kaikkonnen et al. 's ankle scoring system.
Results:
Follow-up was av. 22 months (range, 14 to 30 months). Av. preop. Score of 42 (range 10 to 75) was 84 (range 10 to 100) at follow-up. 15 ankles were rated as excellent, 2 as good, 2 as fair and 2 as poor. Overall 19 patients were satisfield with the procedure. 2 had noimprovement. Two ankles with afair result had a neuroma which became asymptomatic following steroid injection. No other complications were seen. The ankles did not show increased clinical laxity following excision of the accessory fascicle of the AITFL.
Conclusion:
The pathologic significance of the distal fascicle of the AITHL is still not well defined. We belive that is a definite entity causing antelateral impingement of the ankle. Arthroscopic resection gives satisfactory results in the majorty of patients with a history of previous ankle sprain.

FPA# 19 A TECHNICAL REPORT ON VIDEO-ASSISTED PERCUTANEOUS REPAIR OF ACHILLES TENDON

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Open surgical repair of calcaneal tendon ruptures is associated with high rates of deep infection, fistula and skin necrosis. Although percutaneous tecnique of Ma and griffith may avoids some of these pitfalls, higher rerupture rates of this technique can be related to lack of exact opposition of tendon ends. We performed different types of complete achilles tendon cuts percutaneously on 16 above knee amputation specimens. Using the same small stab wound, we placed a 70° scope into the gap of the Achilles tendon and viewed the cut ends and its movements during flexion and extension of ankle. Than with the tecnique of Ma and Griffitt, achilles tendon repair was performed after the tendon ends were brought together under direct visualization. Thompson test were negative in all amputation materials with percutaneous repair of tendons. When repaired tendons were examined macroscopically, repairs were seen to be secure.
After cadaver study, this method was applied to 4 patients with acute achilles tendon rupture. Long leg circular cast was used for 5 weeks and walking cast was applied over the next three weeks. Than full weight bearing was allowed with 2 cm heel insert until the end of 3 months. All tendons were healed and resumed preoperative status at the end of 3 months. No complications such as infection, limitation of ROM, rerupture or sudeck atrophy occurred in any patient. One of

these patients had had open achilles tendon repair on the controlateral leg with wound breakdown which necessitated skin graft operations twice. Video-assisted percutaneous surgery avoids some of the complications of open surgery and allows surgeon to repair the rupture under direct visualization of tendon ends.

FPA# 20 A STUDY OF THE İMMEDİATE EFFECT OF CERTAIN MANUAL THERAPY TECNIQUES ON ELDELY PEOPLE WİTH CERVİCOARTHROSİS

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The goal of the study was to example the immediate effect of some manual therapy techniques on elderly people with cervicoarthrosis.
Study groups and indicators:
We applied some manual techniques (Post Isometric relaxation for m. trapecius and m. levator scapulae, neck muscles massage, and longitudinal tractions, alternated with passive exercise) from a lying position to 17 women with proven cervicoarthrosis and average age 68,76 years ± 5,97 years.
Before and after each procedure we studied the following indicators: mobility of the cervical section of the spine: equilibrium stability (Romberg sample) : Hautant test for cervical section blockage and subjective condition.
Results:
The mobility of the cervical section of the spine increased immediately after the procedure. A considerable improvement showed: extension-by 12.3° on average ($p< 0.001$); lateroflexion to the left - by 10.0° ($p<0.001$); rotation to the right - by 10.88° ($p>0.001$). The equilibrium stability grew up by 2.35 sec. ($p< 0.001$). Hautant's sample remained posive for only two patients. The subjective condition of all patients improved.
Conclusion:
The manual therapy applied proved to be suitable for elderly and old people with cervicoarthrosis and improved their objective and subjective condition.

FPA# 21 THE ROLE OF THE SUBCLAVİUS MUSCLE IN THE TRANSITORY COSTO-CLAVİCULAR SYNDROME AMONG ATHLETES

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The subclavius muscle is 8 to 9 cm. It connects the first rib with the lateral part of the clavicle close to the insertion point of the coraco-clavicular ligament. The muscle takes an essential part in the biomechanics of the sterno-clavicular joint by restricting the the anterior displacement of the clavicle and lifting the first rib. During the motion of the shoulder girdle the peripheral end of the clavicle moves in an ellipse with the following dimensions-12/10 cm. The maximal range of movement of the shoulder girdle reaches: 20° rotation, 35° in the frontal plane and 45° in the horizontal plane. During sports activity the subclavius muscle performs its stabilizing function when the clavicle is in end stage position. As a result of the repetitive motion patterns the consequent reactive changes in the muscle and the surrounding tissues appear to compress the subclavial nerves and vessels.
35 athletes with physical overstraining of the shoulder girdle were tested at the end of their training day. Irradiating pain with slight sensitivity alterations was established among 14 of the tested individuals. It appeared that taking supine position with the arms lifted parallel to the head for a couple of minutes during the rest break alleviated the symptoms.

FPA# 22 HAMSTRING SHORTNESS IN YOUNG ADOLESCENT MALE AND FEMALES

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Purpose:
Hamstring shortness (HS) has long been acknowledged, but until recently it has been recognized as a pathology. It has been shown that HS causes increased thoracal kyphosis, decreased lumbar lordosis, increased incidence in spondylolisthesis and disc herniation, scoliosis, decreased dorsi-flexion of the foot, static and dynamic problems in the knee.
Materials and Methods:
We made measurements in 405 male (mean age: 19,86±7,96) and 111 female (mean age: 18,48±1,83) adolescents in our university. Hamstring shortness measurements that are made in 370 male and 111 female adolescent findings are compared. In order to evaluate hamstring shortness, the patients are laid supine with knees and hips in 90° and then the knee is forced to extension is measured by a standatd joint goniometer.
Results:
There is no significant differences between hamstring shortness of left and right lower extremity in male and female groups. Mean limitation of extension of knee (MLEK) in men on the left is 35,52±15,67 and on the right is 35,09±15,91. In female MLEK on the left is 10,41±13,02 and the right is 9,10±13,11. Male population that have HS over 40 is 40,36% whereas in females this is, 1,80%.
Conclusions:
The incidence of hamstring contracture is mostly investigated by pediatric orthopedist and MLEK results of over 40-50 will ensue in biomechanical disorders. In our study, we could manage to find obvious differences between male and female groups. Only small population in females have over 40 of KLEK, whereas males have 40,36% of their population have MLEK of over 40. This documents that HS is very important problem of adolescent males and female should be measured in those who have knee and back problems.

FPA# 23 AN ARTHROSCOPİC FASCIOTOMY TECHNİQUE FOR CHRONİC TIBIALIS ANTERIOR COMPARTMENTAL SYNDROMES IN ATHLETES

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Chronic tibialis anterior compartment syndrome in lower leg is not a rare condition in athletes. This condition disturbs athlete very much and for the treatment one usually needs surgical intervention.
Rehabilitation period depends upon the surgical methods that applied and the insicions used.
The longer insicions are made, the longer period of rehabilitation is needed. There are many surgical techniques in literature for this condition. In these techniques, all authors advised that care must be taken to avoid damaging the superfical peroneal nerve and vascular structures in surgical incisions. On the other hand the arthroscopic

technique below described is safe and easy to avoid harming these structures.

Arthroscopic fasciotomy technique:

Under pneumatic tourniquet the lower leg prepared for operation. Fibular head and tuberositas tibiae are marked with a dermograph. Between the two marked site and in the middle of the anterolateral surface of the cruris, make a 1 cm long horizontal incision, cut skin, subcutaneus tissues and the tibialis anterior fascia. Make a tunnel between fascia and skin by inserting the arthroscope sheath and blunt obturator, toward proximally and distally. Using together a 30o arthroscope and an arthroscopic Smillie's meniscus blade, see and cut fascia through tunnel, longitudinally upwards and downwards one by one. Then wash tunnel with physiologic saline and suture skin without using a drain.

We applied this technique in two athletes. Without any complication, sutures were taken on the tenth day after the operation. Athletes have turned to sporting activities in three weeks.

FPA# 24 EARLY MOBILIZATION VERSUS IMMOBILIZATION IN THE TREATMENT OF LATERAL ANKLE SPRAINS

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Ankle sprains are one of the most common injuries of the musculo-skeletal system. The incidence of ankle inversion injuries has been informed at 1 per 10000 persons, per day. The lateral ligaments are most commonly injuried.

Various conservative and surgical treatments are available for severe ankle sprains. The goal of treatment is to prevent chronic functional complaints.

In recent prospective study, we treated conservatively 43 patients with acute lateral ankle sprain who were allocated in two groups during the period February 1998-May 1998. The injury was occured during sports in 24 (%55) cases, during daily activities in 19 (%45) cases. Patients were diagnosed by physical examination routine x-rays and stress graphies. The tenderness localization edema, echymosis, stability tests, bimalleolar and cruris circumferential measurements were evaluated in physical examination. History and physical examination were the keys to diagnosis and classification according to three-grade classification system. There were 3 cases with grade I, 18 cases with grade II, 2 cases with grade III injury in group I. and 6 cases with grade I, 12 cases with grade II, 2 cases grade III injury in group II. MRI was made for 10 cases to evaluate the accuracy of the classification.

The patients were treated with a dynamic orthopaedic brace after 3-4 days posterior cast splint immobilization in Group I(n:23). They wore their braces for 3 weeks. A control group (Group II), consisting of 20 patients, received a weight- bearing short-leg plaster cast for 3 weeks. End of the treatment, patients were evaluated with physical examination. The average follow-up period was 5 months (min:4 - max:6) after injury. The physical examination, bimalleolar and cruris circumferential measurements, routine x-rays were repeated. In addition, Kaikkonen-Kannus Scoring System was used to evaluate the clinical and functional results.

Excellent results were found in 21 (%91,3) cases of group I, in 19(%95) cases of group II. Good results were found in 2(%8,7) cases of group I, in one (%5) case of group II. There was no significant difference for edema regretion between two groups. In 16 cases of Group II, the muscular atrophy was determined end of the treatment and it has been continued in 8 cases at follow-up. Recovery of the daily activities was 6.9 days in group I and 26.2 days in group II. These findings suggest that, clinical and functional results are same in both groups. But functional treatment with brace has several advantages:

- ☐ It ensures almost adequate healing
- ☐ It permits early rehabilitation
- ☐ It permits earlier return to work and daily activities.

FPA# 25 COMPARISON OF FUNCTIONAL TREATMENT AND CAST IMMOBILIZATION IN THE TREATMENT OF ANKLE JOINT COLLATERAL LIGAMENT INJURIES

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Ankle joint lateral collateral ligament injuries are the most common type of injury in sport traumatology. There is still no consensus in the treatment of such injuries.

In Turkey, this type of injuries are treated classically with cast immobilization and other functional treatment modalities. In our study, we selected 54 patients who attended emergency service with ankle joint injury and evaluated as grade II and grade III ankle joint injury between 01.04.1998 and 31.10.1998. Recurrent ankle joint injuries are excluded. After complete physical examination, 44 patients had isolated A.T.F.L. lesions and 10 patients had both A.T.F.L. and C.F.L. lesions. We divided the 54 patient group into two randomly. The first group included 34 patients and they were treated with elastic bandage with compression, elevation, ice application and early mobilization. The second group included 20 patients and they were treated with 3 week short leg cast immobilization. All the patients were evaluated at the end of the first and the third months according to clinical criterion such as pain, swelling, functional activity and instability.

At the end of the first month it was found out that six of 20 patients (30%) who were treated with cast immobilization had mild and moderate degree pain. Eight of 34 patients (23.5%) who were treated with functional treatment had mild and moderate degree pain. The time interval in which the patients returned to average active life and sports was 43 days in first group and 32 days in second group. After clinical and radiological evaluations, it was concluded that there was not any significant difference between two groups.

As a result, although there was not significant difference between the two groups' ankle joint recoveries, there was significant difference in returning to active life and sports. For this reason we belive that functional treatment should be preferred to cast immobitation in ankle joint collateral ligament injuries.

FPA# 26 EARLY FULL WEIGHTBEARING AND FUNCTIONAL TREATMENT AFTER SURGICAL TREATMENT OF ACUTE ACHILLES TENDON RUPTURE

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We prospectively evaluated the clinical outcomes of 25 patients (mean age 35,7 years) with early full weightbearing and functional treatment after surgical repair of acute Achilles tendon rupture according to a prospective intra-and postoperative protocol. All patients under went open repair using a Kirscmayer core suture and

cross - stitch epitonon sutures. The postoperative regiment included a plantigrade splint for 24 hours and 6 weeks of early full weightbearing in a removable walker. All patient were evaluated with clinical and ultrasound examination and according to a new scoring system at 3,6 and 12 months after repair.
After 3 months, the score averaged 75 of 100 points; after 6 months 80, and after 1 year 95. All patients reached the same level of sports activities as preoperatively and demostrated no significant in ankle mobility and isokinetic strenght. There were no reruptures, no infections. We belive that early carefull ankle mobilization and full weightbearing in a removable walker after primary Achill tendon repair does not increase the risk of rerupture. An accelerated rehabilitation program improves early foot function with excellent recovery of plantar flexion strenght and amplitude.

FPA# 27 THE EFFECT OF CONTINIOUS PASSIVE MOTION ON REPARATION OF ACHILLES INJURIES

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Son yıllarda aktif spor yapan kişilerin artmasıyla birlikte aşil tendon rüptürleri ile daha sık karşılaşmaktayız. Cerrahi tedavi sonrası hangi yöntem kullanılırsa kullanılsın 8-10 hafta süre ile onarımın korunması önerilmektedir. Son zamanlarda onarım sonrası fonksiyonel tedavi yaygınlaşmaktadır. Biz aşil tendon rüptürü oluşturulan tavşanlarda onarım sonrası devamlı pasif hareket cihazı (DPH) ile günde 4 saat kontrollü devamlı pasif hareket uygulanmasının tendon iyileşmesi üzerine etkilerini araştırdık. 20 adet erişkin tavşanda aşil terdon rüptürü oluşturulduktan sonra modifiye kessler tekniği ile onarım uygulandı. Onarım sonrası 10 tavşanın opere edilen ekstremitesine postoperatif 2. günden başlamak üzere ayak bileğine pasif hareket yaptıran DPH cihazı ile günde 4 saat pasif hareket uygulandı. Tavşanların opere edilen ekstremiteleri pasif hareket uygulanmadığı sürede çıkarılabilir uzun bacak alçısında immobil tutuldular. Diğer 10 tavşanın opere edilen ekstremiteleri ise alçı ile immobilize edildi. 6. haftanın sonunda tavşanların öldürülmesini takiben onarılan tendon dokusu makroskopik ve histopatolojik olarak değerlendirildi. Makroskopik incelemede; onarım dokusunun çevre dokulara yapışıklılığı, ayak çevresi adalelerinde atrofinin miktarı ve ayak bileği ROM'u bakımından DPH uygulanan deneklerdeki bulgular, devamlı immobil tutulan deneklere göre belirgin olarak daha iyi idi. Histolojik incelemede; DPH uygulanan tavşanların iyileşen tendon dokularında % 70 düzenli kollajen lif dizilimi görülürken alçı içerisinde immobilizasyon uygulanan tavşanlarda %20 düzenli kollajen lif dizilimi mevcuttu. Hyalinizasyon ve iltihabi infiltrasyon bakımından gruplar arasında anlamlı farklılık yoktu. Bu bulgularla aşil tendon rüptürlerinin onarımı sonrası devamlı kontrollü pasif hareket uygulanmasının tendon iyileşmesi üzerinde olumlu etkisi olduğu sonucuna vardık.

FPA# 28 SHOULDER FLEXIBILITY AND POSTURE IN JUNIOR TENNIS PLAYERS

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Purpose of this study is to investigate relationship between dominant and non-dominant shoulder flexibility according to sex and relationship between postural deviations and sex, training duration and age in junior tennis players (10-20 ages) were assessed according to active and passive shoulder range of motion (ROM) and occurrence of postural deviations. Goniometre was used for measuring ROM after the subjects had warm up exercises for 10 minutes. New-York posture test was used for the posture evaluation (17). In this test from posterior view; head, spine, pelvis, heels and soles, from lateral view; neck, breast, shoulders, back trunk, abdominal protrusion and waist was scored for symmetry, the relation to the vertical line and the posture. To assess reliability of goniometric measurement and New-York posture test, two investigators independently conducted two trials on all individuals. Statistical analysis were made by SPSS statistical analysis programs (Student t test, x^2 test) ($\alpha = 0.05$).
Results:
Active internal rotation of non-dominant shoulder was higher in boys ($p=0.00$). No differences were observed between active ROM of dominant and non-dominant shoulders according to active flexion, extension, external rotation in girls and boys ($p>0.05$). Passive external rotation of dominant arm was higher in girls ($p=0.03$). No statistical differancees were found between passive ROM of dominant and non-dominant shoulders in passive flexion, extension and internal rotation ROM in girls and boys ($p>0.05$). Most frequent postural failure were shoulder asymmetry (88%) and forward shoulder (50%). Shoulder depression was much more on dominant side. Lumbar lordosis increasement was higher in boys (22% in boys and 11% in girls). Only statistical siginificance was found in scoliosis in relation with sex ($p=0.05$). It was seen that postural deviations were more prominent in the ages group, forward shoulder was 50% in 15-20 ages group. However statistical significance was not observed between postural deviation, training duration and ages ($p>0.05$).
Conclusion:
Most of the researchers proposed that shoulder external rotation flexibility much more increased than internal rotatiton belong to long training duration and adaptation of tennis sports. In this research we found that passive external rotation of dominant arm was higher in girls. In this study, forward shoulder and shoulder asymmetry were the most postural deficiencies in tennis players as other researches. Regular evaluating of posture and ROM in athletes is recommeded.

FPA# 29 PROPRIOCEPTION OF THE SHOULDER JOINT IN HEALTHY AND UNSTABLE

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Proprioceptive mechanisms appear to play a role in stabilizing the glenohumeral joint and may serve as a means for interplay between the static stabilizers and the dynamic muscle restraints. The aim of this study was to investigate proprioception of the patient with shoulder joint in healthy and unstable. Shoulder proprioception was

measured in 46 subjects who were assigned to two experimental groups: Group I (n=20), healthy subjects; Group II (n=26), patients with anterior instability. Joint position sense was measured with a Cybex II isokinetic dynamometer and electronic gonimeter. The results revealed no significant difference in proprioception between dominant and nondominant shouldres in group I. Significant differences ($p<0.001$ and $p<0.05$) were found between unstable and uninvolved shoulder for active joint position sense in group II. These results implie that damage in capsuloligamentous structures and muscles can lead to proprioceptive deficits because of partial deafferentiation.

FPA# 30 PATELLAR STRESS FRACTURE IN A SOCCER PLAYER

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The diagnosis of stress fractures in athletes has some difficulties. Patellar stress fracture is not a common injury. In the literature, eight cases with transverse patellar stress fracture in athletes were reported preveously. The cases with long lasting anterior patellar pain reminds patellar stress fracture as well. The therapeutic procedure must be performed as soon as possible in order to avoid displacement of fractures.

A professional soccer player, male, at the distal part of his right patella for four weeks. He did not define a significant direct trauma and the pain was increasing with physical activity. The case was assessed radiologically and transverse patellar stress fracture which was not displaced was diagnosed. The player returned to competitive play after three months of immobilization and rehabilitation program.

We want to emphasize the need to consider a stress fracture, when antrerior patella pain persists in the athlete.

FPA# 31 RELATION OF AGE, BODY COMPOSITON, AEROBIC POWER, AND THROID HORMONES WITH BONE MINERAL DENSITY BALLET DANCERS

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The purpose of this study was to investigate the relationship among bone mineral density, age, height, body fat percent, aerobic power and the thyroid hormone level considering age differences. Experiemental group of this study was 42 ballet dancers from Ankara Devlet Opera ve Balesi. Control group of this study was selected from sedenter women (n= 38) who did not exercise regularly (3 days / week, 30 min daily) in the Middle East Techical University.

The means of the physical and physiological parameters measured in experimental group of this study were found to be as follows: age 32.95±9.81 years, height 161.73±6.06 cm, body weight 52±715.07kg, body fat percent 18.51±4.73, aerobic power 37.50±5.91 ml.kg/min, bone mineral density L_1-L_4 1.011±.1gr/cm^2, F_T bone mineral density .931±102gr/cm^2, TSH 2.26±1.31 and T_3 1.04±.15, T_4 73.73±10.52, FT_3 5.4±.99, T_4 14.75±2.8. In the control group of the study the means of the measured parameters were found as age 35.86±9.04 years, height 160.78±7.12cm, body weight 60.86±10.54kg, body fat percent 26.22±6.43, aerobic power 31.86±5.64 ml.kg/min, L_1 -L_4 .985±.126 gr/cm^2, femur (F_T) .85±.125gr/cm^2, TSH 2.28± 1.06, T_3 1.11±.21, T_4 81.2±8.52, FT_3 5.21± 49, FT_4 13.8±2.17. The mean menarch for ballet dancers was 13.57±1.36 year, and sedenter was 12.55±1.08 years.

According to the statistical analysis, there were significant relationship between (L_1 - L_4) lumbar vertebrae bone mineral density and body weight at $p<0.05$ significance level for both groups. In control groups. In control groups, there were significant relationship between femoral bone mineral density and body weight at $p<0.01$ significance level. The relationship between age and aerobic power and body fat percent were significant $p<0.01$. This relationship created a considerable difference among age groups. A significant relationship was identified among menarch, menstrual regularity and L_1 - L_4 bone mineral density of the sedenter group, but no significant relationship was identified between thyroid hormones and bone mineral density for both groups.

FPA# 32 SOMATIC - FUNCTIONAL PROFILE OF AEROBIC SPORTS IN ROMANIAN GYMNASTS

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The purpose of this paper is to make contribution in order to clanfy the constitutional type, the specific effort solicitation the anaerobe and aerob effort capacity for the sports aerobic Romanian national team components (two times world champions, in Haga-1996 and Perth-1997).

Material and methods:

The gymnasts were investigated using biometrics examination (body composition) and several functional tests: Astrand methods for the maximum O_2 uptake, the maximum anaerobic power on 10, 15, 20 and 45 sec. and a specific test for the cardiac nervous regulation. During the training sessions it was registered the cardiac frequency in rest, effort and recovery time, by using a pulse-tester Polar.

Results-coclusions:

-The somatic aspects revealed a medium stature for all the gymnasts (boys and girls) and a harmonious constitution;

- The fat tissue percentage is 12% for the boys gymnasts and 14% for the girls;

- The maximum O_2 uptake has an average of 54,97 ml/kg for the boys and 65.45 ml/kg for the girls;

- The anaerobe maximum power revealed high values for the boys and satisfactory values for the girls;

- The cardiac frequency in specific effort in precompetitional period (during the entire routine, in single couple and trio events) had values between 170-180 b/min. in over 50% from the whole routine (exercise) time.

FPA# 33 THE MODIFICATION OF TPR DURING THE MODERATE DYNAMIC EXERCISE

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The purpose of this study was to present the changes of TPR during moderate dynamic exercise in elite athletes who are trained in different models.

We have studied 47 elite male athletes (15 basketball playres (BB), 14 sport distance runners (SR), 10 weightlifters (W), 8 roadcyclists (RC)) and as a control (C) gorup 15 students of Physical Education

Institute. All the subjects underwent bicycle ergometric exercise testing in recumbent position with 3 min graded submaximal effort (50, 100, 125 wat), nearly 40% of their VO_2 max. Echocardiographic study of left ventricule was performed in rest and each grade, accompained with heart rate and arterial pressure measurement in the end of each grade. We calculated PAM, Q and through Hagen - Pouseiulle equation (PA= Q x TPR), results of TPR were obtained, and were normalized with the calculated body surface.

We found lower rest levels of TPR in BB (p 0.001) and RC (p 0.05) comparing to C. TPR declined promptly at 50 and 100w (p 0.001), reaching lower levels in BB and SR. TPR declining was lower in 125w in all groups (S, BB p 0.001; RC p 0.05 and NS for W and SR). TPR is an important compensating factor in muscular tissue porfusion in exercise in sportsmen trained in aerobic models as well as those with great body surface.

Afterload is modified immediately in the begining of physical effort, preceding the other factors influencing O_2 consumption. Sportsmen trained in aerobic models have a more gradual modification of TPR.

FPA# 34 PHYSICAL FITNESS ON MENTALLY RETARDED CHILDREN

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This study designed to measure physical fitness on trainable mentally retarded children who do any kind of sports and those who don't along it healty ones; and also to find out the effect of sports on physical fitness has been carried oft in A.İ.B.Ü.K. Demir Physical Therapy and Rehabilitation, Ulus Anadolu Practical-Training School, Gölbaşı Procting and Caring Trust of Mentally Retarded Children - Among the Subject covered by the study there were 20 nonretarded (I. Group). The avarage ages of subjects were determied as a 15.35±0.21 years in group I, 15.00±0.22 years in group II, 15.15±0.21 years group III, Physical structure and physical fitness both nonretarded and mentally retarded children were evaluated. A statistically important difference was found in all physical fitness parameters except cardiovasculer endurance, body composition, flexibiliy and pulling one's body up arms parameters. As result, it has been concluded that sports is a valid and effective means of training which improves the levels of physical fitness and daily-life freedom of mentally retarded children.

FPA# 35 ADAPTATION CHANGES IN THE CARDIOVASCULAR SYSTEM OF MENTALLY DEFICIENT CHILDREN OF THE ERETIC AND TORPID TYPE UNDER EFFECT OF KYNESITHERAPY

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The kynesitherapy is one of the basic correction - compensatory rehabilitation methods used in the case of mentally deficient children.

The kynesitherapeutical exercises exert a different effect on the basic types of children with oligophrenia-the eretic (hyperdynamic) and the torpid (hypodynamic) one, who have different psychomor characteristics.

The aim of the present investigation is to study the specific features of the cardiovacular system adaptation to physical loading of both types of children.

The total number of 86 children were divided in two groups: an experimental one, consisting of 45 children (35 of tne eretic and 10 of the torpid type). The average age index of the contingent studied is 12.6 years.

The investigations were carried out in the course of one year, two basic kynesitherapeutical methods being tested:

-Medical gymnastics-for the eretic type;

-play (modified mini -basketball) -for the torpid type.

The changed in the cerebral-cardiac reflexes (those of Aschner - Dagnini, Cermak-Hering and Toma-Rou) and in the orthostatic sample were observed in order to determine the effectiveness of the applied kynesitherapeutical methods.

The analysis of the results proved that in the case of children from the eretic type, the regulation mechanisms were directed under the effect of physical exercise towards decreasing of the sympathetic excitement, intensifying of vessel reactions (higher diastolic blood pressure) in the compensatory mechanisms of the orthostatic sample.

In the case of torpid children it was established that the cardiovascular system was more resistant towards physical loading.

FPA# 36 EVALUATION OF ARTROSCOPIC KNEE SURGERY EXPERENCES IN AMATEUR SPORTMEN

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In your study we evaluated 43 patients, 45 knees who attented to our clinic with knee problems and performed arthoscopic knee surgery between 01.01.1996 and 31.10.1998.

Twentyone of our patients were amateur football players, 4 of them were volleyball players. Thirtyeight patients were male and 4 of them were female. Arthroscopic knee surgery were performed to 23 right knees, 18 left knees and 2 both knees. Arthroscopic knee surgery was performed under general anesthesia. Antibiotic prophylaxis was not used during surgical procedure. After arthroscopic knee surgery we applied cold dressing with cryocuff, elevation and elastic bandage. Active rehabilitation program was started immediately after surgery.

The evaluation of patients revealed that, there were meniscal tears in 23 knees which were multiple types and localizations, osteochondritis dissecans in 3 knees, chondromalacia patella in 9 knees, medial plica in one knee and Anterior Cruciate Ligament (ACL) rupture in 9 knees. Meniscal lesions were arthroscopically meniscectomised partially or subtotally. Symptomatic medial plica was resected, Osteochondritis Dissecans (OCD) was treated by removal of loose bodies. Five of 9 patients with ACL rupture underwent arthroscopic ACL reconstruction. Lateral release operation was done in 3 of them, who had lateralization of patella. Other patients were treated conservatively. Any sign of infection was not observed. Mean time of returning to active sports life was 85 days and 34 of 43 patients returned to active sports life in 5 months. Five patients who were treated with arthroscopical ACL reconstruction and 5 players of other sports area preferred quitting amateur sportive activities.

Arthroscopic surgery is suitable in patients occupied with sports after completing clinical and physical examination and MRI in necessary cases. Advantages of arthroscopic surgery are short operation time, easy application, low mortality rates and early rehabilitation opportunity. Because of these reasons treatment interval is shortened and patients have the opportunity to return to active sports life in a short period of time. But in amateur players

success of early returning to active sports life depends on performing a good rehabilitation program and motivating the patients.

FPA# 37 MENISCUS REPAIR WITH T-FIX ANCHOR SUTURES

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The results of arthroscopically repaired meniscal tears with the T-fix system in a short-term follow-up of 1 years was assessed in a non-comparative, prospective, study. Twenty one menisci in 21 patients (mean -age 24 years) were repaired. Sports related injuries were documented in 16 patients. In 15 patients, meniscus tears were repaired 6 months or more after injury. All tears were longitudinal and postioned mainly in the posterior horn or middle part of the medial meniscus.

In 85% of the patients, the postoperative activity levels returned to preoperative levels and the clinical symptoms had either resolved. Postoperatively, there were no complications directly associated with the device. The T.fix device was relatively easy to use and could be reliably placed in the meniscus. However, further studies are needed to confirme these results in a long-term follow-up in a larger patients population.

FPA# 38 INJURY THAT FOLLOWS THE ECSTASY THAT SOCCER PLAYERS EXPERIENCE AFTER HAVING SCORED: "ECSTASY INJURIES IN SOCCER"

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We can not take our emotions under control. Because of that, a new topic is growing in the scale of athletic injures recently: Ecstasy injuries!

Nine soccer players who are injured because of excessive achievements of field (after a goal kick or winning match) applied to our clinic between August 96 and December 98.

The average age of the cases was 24(17-29). Seven o them were professional and the two were amateur. The fields were natural grasses at eight case and cinder ground at one. The injuries were: Fracture of ankle, ribs and clavicle; medial collateral ligament sprain; and coccyx contusion. The injured athletes stayed away from competitive play for periods lasting from seven days to five months.

At the state of occurrence; the provocation of team fanatics, excessive motivation, the score points effecting league standing and cup competitions, rate of income; and the charming atmosphere of green grass can be shown as the reasoning factors. Just like the prevention principles of all other athletic injuries; lowering the rate of ecstasy injuries is possible by analysing the happening and development mechanism of the injuries. But the most important issue is to give the athlete true behavioural habits in normal and extreme affective situations.

FPA# 39 METHOD FOR FOOT EXTENSORS STRENGTH ENCNHANCEMENT UPON FRACTURE

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The Purpose of the study was to examine the effect of the application of eccentric muscular contractionsafter isometric tension on the increase of the ankle joint extensors strength after a fracture near the joint.

The method was based on:

1. The foot extensors lasour in the walikng process.
2. The physiological phenomena (princioles) for increasing of the muscular strength: Linhad phenomenon; Zatsiorski phenomenon for the eccentric muscular contraction and the De lorme method for determination of the quantity of muscular resistance.

We examined 18 patients with a near to the ankle joint fracture and observed the changes during the treatment of the following indicators: pain, local t°, skin color, movement capacity of the joint, edema around the joint, ankle joint extensors and flexor strength.

The comparison of the initial and the final results showed that most clear and statistically significant is the increase of the ankle joint extensors strength and the extension increase for the test group. The other indicators observed also tenden to significant improvement.

FPA# 40 FUNCTIONAL RESULTS OF PHYSIOTHERAPY PROGRAM ON THE LATERAL LIGAMENT INJURIES OF THE ANKLE

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Purpose:

Purpose of this study was to determine the functional results after physical therapy of the lateral ligaments injuries of the ankle.

Material and Methods:

Between September and December 1998. this study was carried on 70 patients (37 women, 33 men) with lateral ligament injuries of the ankle at the Department of the Physical Therapy and Rehabilitation of the Dokuz Eylül University.

All the patients were evaluated before and after physiotherapy for ankle rage of motion, muscle strength, pain (visual analog scale, 0.10 point) during rest and daily function such as walk, climb stairs, balance (standing on one leg with eyes open and closed), and Lysholm Functional Ankle Scale.

Patients were treated with physical therapy and rehabiltation programs. This programs included muscle sternath, flexibilty, endurance, proprioception and balance training.

Results:-

At this study we found increased rage of motion, muscle strength and balance, and decreased pain during rest and daily functions.

We found that Lysholm Functional Ankle Scale was increased from 52.0±19.0 before treatment to 74.2±12.1 after 3-month.

Conclusion:

Early physical therapy programs seens to be helpful normal functional level.

FPA# 41 EFFECTS OF AGE ON THE RECIPROCAL PEAK TORQUE RATIOS DURING KNEE MUSCLE CONTRACTIONS IN ELITE SOCCER PLAYERS

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To investigate the effects of age on the reciprocal peak torque rations during knee muscle contractions, twenty-five male soccer players, aged 22.3 ± 3.8 yr (18-28), volunteered for the present study. The players (≤ 21 years, n=12). Maximal conceptric (CON) and eccentric

(ECC) isokinetic thing muscle strength were measured at angular velocities of 30°, 180°, 240° and 300 °/sec. ECC and CON peak torques of knee extensors (quardriceps, QUA) in dominant knee were greater ($p<0.05$) in adult players than in young players at 180, 240, and 300°/sec. ECC HAM /CON peak torque ratio at 300°/sec was greater ($p<0.05$) for adult players compared to young players in the dominat knee but not in the nondominant knee. Furthermore, conventional HAM/QUA peak torque ratio of dominant knee at all angular velocities for ECC contraction were higher ($p<0.05$) in adult players than in young players. In conclusion, the findings of the present study indicate that the reciprocal torque ratio is influenced by age in the domunant knee of elite soccer players. Because there was no effect of age for the nondominant leg, the findings of the present study are more likely to be the result of the training backgound of the plyares than their age.

FPA# 42 THE RELATION OF PLANTAR ARCH DEGREE WITH THE ISOKINETIC MUSCLE STRENGTH OF ANKLE MUSCLE

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The purpose of this study was to investigate the relation of plantar arch degree with the isokinetic muscle strength of ankle muscle during inversion/eversion (I/E) and plantar flexion/dorsiflexion (PF/DF). 40 healthy female volunteers aged between 15-26 years (17.44±1.83) were tested. Plantar arch of every subjects were classified accordingly into three groups with high, low and meidum concavity. The association between the arch findings and isokinetic peak torque values was investigated. Muscles of all subjects were tested using the Cybex 350 dynamometer. I/E and PF/DF peak torques were measured at speed 30° , 60°, 120°, 220°/sec while the knee was in extansion. The group with medium concavity had a higher I/E ratio at 60°/sec and higher PF/DF peak torque values at 220°/sec.

FPA# 43 REHABILITATION OF ATLETIC INJURIES AND READMISSION

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S.C. Labonmed Pharma S. A. Bucuresti ROMANIA

In rehabilitating the injured athlete, emphasis must be placed on an appropriate and well-supervised exercise program designed to restore range of motion, flexibility, strength, cardio-vascular endurance and agility. Without this emphasis the athlete will not be able to return to activity safety or at an effective level of performance.
The concept of therapeutic exercise falls under the domain of rehabilitation. To provide an injured athlete with a rehabilitation program that allows a safe and effective return to activity, a variety of factors must be taken into consideration. These factors include both the the athlete's and physician's ultimate expectations for return to activity, the total disability of the athlete, and all of the parameters of physical fitness.
If the physician maintains the philosophy that rehabilitation of the athlete should be directed towards regaining range of motion, flexibility, strength, cardiorespiratory endurance, agility and coordination, most athletes will be able to return to activity.
The first step in the rehabiliation process is to initiate a set exercises to increase range of motion and flexibility.
Range of motion exercises may be preceded with application of moist heat via whirlpools, hydrocollator steam packs, or warm showers when the injury is past the inflammatory stage.
Proprioceptive neuromuscular facilition is a method employed to regain range of motion, flexibility and neuromuscular function. Muscular strenght is an extremely important factor in athletic performance.
Muscle strenght is defined as the maximum force that a muscle can exert in a single maximum contraction. Strenght can be further defined as being static of dynamic.
Methods of strengthening muscles fall into three main areas: isometric, isotonic and isokinetic.
The total spectrum of physical therapy modalities, from moist heat to ultrasound and high-voltage electrical stimulation, have been used to treat athletic injuries.
Ice or cold therapy is the most widely used modality in sports medicine and athletic training.
Indication for ice or cold therapy include the following: 1. Acute and chronic soft tissue injuries such as contusions, straing and sprains; 2. Relief of pain muscle spasm.
Contraindications to ice or cold therapy include: 1. Cold allergies, circulatory disorders, Raynaud's syndrome and rheumatiod arthritis; 2. Prolonged use around bony prominences and superficial nerves.
Heat has been used in a variety of forms to treat athletes since early recorded history.
Local heating is indicated in the treatment of chronic soft tissue injuries. In such cases, local blood flow is needed to reduce edema and increase metabolic production and local heating will facilitate this.
Local heating should not be used for acute or subacute injuries or in the case of thermoregulatory disorders.
There are a host of other therapeutic modalities that can and are being used to treat athletic injuries. It is our intent to provide a single regimen of rehabilitation for the practitioner.
We believe that the essential aspect of a rehabilitative program is exercise. The use of modalities to supplement the rehabilitative program is encouraged.

FPT# 44 THE EFFECT OF CHRONIC AEROBIC AND ANAEROBIC EXERCISES ON SERUM LIPID AND LIPOPROTEIN PROFILE IN SEDENTARY MEN

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This study is conducted to assess the changes in serum lipid profile and lipoprotein fractions (Apoprotein A1 and Apoprotein B) the chronic phase of aerobic exercise of different intensities. Twenty healty men (mean age 19.5±1.4 years) were included into the study. The subject were randomized into two groups and their anaerobic threshold were measured. One of the groups was exercised on bicycle ergometers to a level beneath anaerobic threshold (aerobic group) while the other group was exercised to levels above their anaerobic threshold (anaerobic group). The workload in the two groups was heel constant. The groups continued to exercise at the same aerobic and anaerobic levels on constant workloads for 3 months. Serum lipid profile and lipoprotein fractions were assessed at the beginning and the end of three months period. Chronic aerobic exercise caused statistically significant decreases in total cholesterol, LDL-cholesterol and increased HDL-cholesterol

($p<0.05$) in contradistinction from anaerobic exercise ($p>0.05$). Chronic aerobic exercise also caused a significantly fall in Apoprotein B, the primary of LDL-cholesterol, and significantly increased apoprotein A1 the major apoprotein fraction of HDL-cholesterol. These changes were not observed during chronic anaerobic exercise. We concluded that in the near future, Apoprotein A1 and Apoprotein B will come into routine clinical use and will guide physicians the following of patients.

FPT# 45 EFFECTS OF STEADY-STATE EXERCISE AT THE AEROBIC AND ANAEROBIC THRESHOLDS ON SERUM CK AND LDH ACTIVITIES

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Purpose of the study :
Serum activities of CK and LDH enzymes are used as markers of skeletal muscle cell damage. There are few data about those effects at the aerobic (exercise intensity leading to 2.0 mmol/l blood lactate, AT) and the anaerobic (exercise causing 4.0 mmol/l blood lactate, AnT) thresholds which are used to predict endurance performance and to determine training loads. Mainly oxidative energy resources are used during steady-state exercise at these thresholds. It was aimed in this study to investigate the effects of steady-state treadmill runs at the At and the AnT performed by 13 well-trained male amateur soccer players, on serum CK and LDH activities.
Material and Methods :
Athletes (20.6±1.7 yrs, 179.4±4.8 cm, 72.3±5.6 kg, 62.9±9.6 ml/kg/min VO_2Max) ran for 45 min first at the AT, then for 26-40 min at 97% of the AnT, after 48h. Fasting blood samples were withdrawn 24 h and 10-15 min prior to the first test (Base and AT_0); five minutes, an hour and 48 h after the test (AT_1, AT_2 and AT_3 respectively), and similary for the second test (AnT_1, AnT_2 and AnT_3). Serum concentrations of total protein (TP), albumin (Alb), glucose (Glu), creatinine (Crn) and urea nitrogen (BUN) were determined besides the CK and LDH activities. Plasma volume changes were considered using hemoglobin and hematocrit figures at each sampling.
Results :
No significant differences were found in any parameter evaluated in relation to Base, AT_0, AT_3 and AT_3c (corrected with respect to AT_0) conditions. So, AT_0 and At_3 were selected as reference points. CK activity increased significantly ($p=0.01$) at AT_1, AT_2 and AnT_2. While it decreased ($p=0.01$) at AT_3, it continued to increase ($p=0.02$) at Ant_3. LDH activity increased by the same amount
of 6.2% ($p>0.05$) at AT_1 and AnT_1, and further increased at AnT_2. Whereas TP increased only at AnT_2, serum Alb levels increased at AT_1 ($p=0.05$), AT_2 ($p=0.02$) and AnT_2 ($p=0.05$). Similarly Crn levels increased at AT_1, AT_2 ($p=0.02$) and AnT_2 ($p=0.01$). It remained elevated ($p=0.02$) at AnT_2 when compared with AT_0 levels. BUN increased only at AnT_2 ($p=0.01$) and AnT_3 ($p=0.05$). Glu levels were high only at AnT_1 and AnT_2 ($p=0.01$). Apart CK, all parameters were in the normal range throughout the study. Except CK and BUN, they reached levels 48h after both tests. Significant correlations were found for CK, BUN and Crn between levels at AT_0, AT_1, AT_2 and AT_3, AnT_1, AnT_2.
Conclusions :
In well trained soccer players, total CK activities may be better criteria than LDH activities in assessing exercise loads and duration. The fact that all parameters returned to baseline levels with the exception of CK activities may further indicate the aerobic nature of both tests.

FPT# 46 EFFECTS OF ACUTE HYPOXIA ON NON-INVASIVE LACTATE THRESHOLD ESTIMATION

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The anaerobic or lactate threshold ($Ø_L$) is defined as the point in an incremental exercise test beyond which arterial blood lactate increases systematically above its resting level. The $Ø_L$ can be validly measured non-invasively simply using the ventilatory and gas exchange indices. The ventilatory equivalent for O_2 (uptake) (V_E/VO_2) has been introduced as a reliable gas exchange method for estimating $Ø_L$. However, the V-slope method which is independent of change in peripheral chemoreceptor (PC) sensitivity, ventilatory response to exercise and depends upon an increased rate of CO_2 output relative to that of VO_2 during incremental exercise, is proposed as the most sensitive and reliable gas exchange indices to estimate the $Ø_L$. The additional CO_2 is being attributed to the bicarbonate-related buffering of lactic acidosis. The rate of change of ventilation is likely to be complicated under the condition of icreased PC sensitivity. We were therefore, interested to determine whether the $Ø_L$ may be validly estimated in subjects with increased PC sensitivity using V_E/VO_2 and V-slope methods. After providing informed consent which was approved by the institutional ethics committee, nine male subjects (18-31 yr.) performed two incremental exercise tests on a cycle ergometer (15W/min to the limit of tolerance) on different days : one with an inspired room air (normoxia) and one with 12% O_2 (hypoxia). Ventilation and pulmonary gas exchange were determined breath-by-breath and $Ø_L$ derived from arterialized-venous [lactate] and standard [HCO_3^-] profiles. During normoxia study, VO_2 at $Ø_L$ was not statistically different (by paired t-test) between V-slope (1.93±0.31 1/min) and V_E/VO_2 (1.82±0.28 1/min). During hypoxic exercise, while the V-slope method provided a valid index of $Ø_L$, the V_E/VO_2 increased progressively, in each case, significantly ($p<0.05$) prior to the actual $Ø_L$ as determined blood [lactate] and standard [HCO_3^-] profiles : 1.73±0.25 1/min for V-slope and 1.36±0.25 1/min, for V_E/VO_2. Consequently, $Ø_L$ estimated by the V-slope method appears to be sensitive index of development of lactic acidosis even in subject in whom other gas exchange indices were insensitive and resulted in an underestimated $Ø_L$, owing to the increased PC sensitivity.

FPT# 47 EFFECTS OF HIGH-ALTITUDE EXPEDITION ON ERYTHROCYTE LIPID PEROXIDATION AND SUPEROXIDE DISMUTASE LEVELS

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The purpose of the present study was to investigate the relationship between high-altitude and (2300 m for 7 day), lipid peroxdation, malondialdehyde (MDA), superoxide dismutase (SOD), as an andioxidant defence enzyme, in erythrocytes. Measurements were performed on 9 female (mean age 18,3±2) and 9 male (mean age 19,3±3,7) volunteer cross-country skiers before, during (1 st day, 7

th day) and after the high-altitude period.
Thiobarbituric acid (TBA) reactive substance (MDA) was determined as an indicator of lipid peroxidation. High-altitude exposure resulted in a marked decrease in MDA content in 1 st and 7 th day of expedition compared to pre and post high-altitude period.
SOD is an endogenous enzyme that protects the tissues against free radicals induced injury. The SOD content of erythrocytes significantly increased during high-altitude period compared to pre and post high-altitude period levels.
These results suggested that decreased MDA levels through high-altitude period might be a result of increased SOD activities in erythrocytes.

FPT# 48 EFFECTS OF VITAMIN E SUPPLEMENTATION ON POST-EXERCISE PLASMA LIPID PEROXIDATION AND BLOOD ANTIOXIDANT STATUS IN SMOKERS : WITH SPECIAL REFERENCE TO HEMOCONCENTRATION EFFECT

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Oxidative effects of exhaustive exercise in smokers, and possible protective role of 400 mg/d vitamin E (Vit E) supplementation for 28 days are investigated. The subjects performed an exhaustive exercise which included concentric-eccentric contractions following a maximal cycling exercise. Hematocrit, hemoglobin, leukocyte (WBC), plasma lactic acid (LA) and malondialdehyde (MDA), erythrocyte Superoxide dismutase (SOD) and Glutathione peroxidase (GPx), serum Vit E and Ceruloplasmin (CER) levels were measured pre-and post exercise. Supplementation increased Vit E levels 28% and 31% in controls and smokers, respectively. Cigarette smoking and/or Vit E supplementation did not influence plasma lipid peroxidation or the antioxidant status at rest. Exercise caused significant hemoconcentration in all groups. When the post-exercise levels were corrected for hemoconcentration, there were significant elevations in corrected WBC counts in all groups except Vit E supplemented controls. MDA levels, on the other hand, when adjusted for hemoconcentration, did not exhibit any difference due to exercise. Exercise did not effect GPx and CER activities either, while causing SOD activity loss in all groups except Vit E supplemented non-smokers. Serum Vit E concentrations diminished significantly in all groups after the exercise. Post-exercise plasma MDA and blood antioxidant levels were not altered by smoking. The results suggest that plasma volume changes should always be taken into account when assessing post-exercise plasma concentrations and that smoking and exercise do not have an additional collective effect on plasma lipid peroxidation and the present dose of Vit E supplementation is not sufficient to maintain the serum levels after exercise.

FPT# 49 INVESTIGATION OF THE DIFFERENCE OF THE MAX. LACTIC ACID AND ANAEROBIC THRESHOLD LEVEL CHANGES OF THE ELITE HANDBALL PLAYERS AMONG PRE-IN-AFTER SEASON PERİODS.

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The purpose of this study was to investigate the difference levels of the maximal lactic acid and anaerobic threshold of the elite handball players among pre-season, and after-season periods.
7 elite handball players were participated voluntarily as the subjects from "Çankaya Municipality Handball Team" with the mean age 25.71±3.55. Maximal lactic and anaerobic threshold levels of the subjects were determined on the treadmill.
First, for the warm-up period the subjects were walked on a treadmill with 9 km/h speed for 5 minutes. Afterwards, speed was increased in increments of 1 km/h for every 3 minutes. Blood specimens were taken from each subject's ears during the treadmill test, in order to determine the "anaerobic threshold" which is known to be in correspondence with the 4 Mmol/L lactate value. Maximal lactic acid values were determined from the blood taken during the exhaustion. Skinfold measurements were calculated according to the "Jackson and Pollack" procedure. Mean and standard deviation scores and differences between data's were analysed by Repeated Measures Analysis of Variance (ANOVA) Test at $p<0.05$ significance level. Sources of the differences between values were determined by using TUKEY HSD.
At the end of study, no significant difference was found in the maximal lactic acid values among the pre-season, in-season and off-season periods. Also, there was no statistically significant difference of AE Speed and AE KAH values among the three periods. The absence of the subjects because of the some reasons, such as hard injury of one player and participating of 4 players to the National Young Handball Team could be the reason for these results. But is is found that, Max. LA, AE Speed and AE KAH values were smaller at the in-season and off-season periods with respect to the pre-season period. Running of a well prepared hard training program, and the performance gained by the end of this program could be the reason for these results.
Statistically significant difference was found for the BMI Weight ($p<0.05$) and Max. KAH ($p<0.01$) values of the subjects among the pre-season, in-season and off-season periods. Statistically significant difference was only found for the VYO ($p<0.05$) between the pre-season and in-season periods. These are the expected reasons and positive improvement for the subjects.
Although statistically significant differences were not found among the other parameters, considerably changes were observed among these parameters. These are; Din LA, Din KAH, Max. LA, AE Speed, AE KAH, Max Running Distance and Max. Running Time.

FPT# 50 THE EFFECTS OF SODIUM BICARBONATE INGESTION IN DIFFERENT DOSAGE ON HIGH INTENSITY EXERCISE PERFORMANCE

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The purpose of this investigation was to determine the effect of sodium bicarbonate ($NaHCO_3$) ingestion in different dosages on anaerobic performance. With this aim 10 elite wrestlers from Gazi University School of Physical Education and Sport were participated voluntarily as subject. Their mean age was 23.10±2.08 years. The subjects participated in 3 cycle ergometer exercises on separate sessions with one interyal during 3 weeks. Each exercise sessions involved 125% max VO_2 of subjects with 60 rpm on cycle ergometer, until they were exhaused. Two hours before each test, the subjects consumed either a placebo (control), or solution of 0.25 gr/kg body weight (D_1) or a solution of 0.35 gr/kg body weight (D_2) with 500 ml fruit juice. Venous blood samples were taken before pre-ingestion and after two hours from ingestion (before the exercise) and immediately after from exercise, 5, 10, 15 min following the exercise. Mean and Standart Deviation scores and differences between datas were analyzed by Repeated Measures Analysis of Variance (ANOVA) Test at $P<0.01$ significance level. Sources of the

differences between values were determined by using Tukey Test.
At the end of the study, results showed that $NaHCO_3$ ingestion facilitated to increase anaerobic performance significantly ($P<0.01$). The differences between trials were determined as follows; 3.95 min. between placebo and D_1 (0.25 gr/kg $NaHCO_3$), 1.66 min. between placebo and D_2 (0.35 gr/kg $NaHCO_3$) and 2.29 min. between D_1 and D_2 ($P<0.01$) The reason of differences between D_1 and D_2 may be explained by means of side effect of over dosage of $NaHCO_3$. Therefore they were not able to show their maximum performance. Results also showed that $NaHCO_3$ ingestion significantly increased pre-exercise HCO_3 and pH of D_1 and D_2 ($P<0.01$). Althought HLa levels of D_1 and D_2 were significantly higher than placebo ($P<0.01$), there was no important decrease pH levels of them regarding to placebo.
The result suggested that $NaHCO_3$ can be used as an effective ergogenic aid and support the supeculation that the increased extracellular buffering afforted by $NaHCO_3$ ingestion facilitated efflux of H^+ from working tissues, thus increasing pH and enhance offsetting fatique.

FPT# 51 EFFECTS OF DIFFERENT AEROBIC TRAINING ON GROWTH AND CORTISOL HORMONES OF 15-16 YEAR-OLD MALE BASKETBALL PLAYERS

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The purpose of this study was to assess the effects of eight-week different aerobic training programs conducted with continuous running and extensive interval training methods on growth and cortisol hormones of male basketball players aged 15-16. A total of 36 healthy school boys voluntarily participated in this study. Subjects were randomly categorised into continuous running (n=12), extensive interval running (n=12), and control (n=12) groups. Subjects' anthropometric and physiological parameters were measured. Subjects within continuous running training group ran 4.8 km three times a week, for eight weeks at 80% of their HRR max (Maximals Heart Rate Reserve). Extensive interval group ran the same distance with the same HRRmax, but in 4 sets of 1200 m. Work-to-rest relief was 1:1 between sets. Control group was given no exercise regimen. Statistical analysis were done via t-tests, ANOVA, and DUNCAN tests. While lean body weights of all groups significantly increased ($p<0.01$), percent body fat of experimental groups decreased. Resting heart rate and blood pressures of experimental groups were significantly decreased at $p<0.01$. There was an important increase in pre-test and post-test scores of first training and last training growth hormone level in experimental groups ($p<0.01$). In cortisol hormone, in pre-test and post-test scores of the first training session a statistically significant increase was not found in continuous running group ($p>0.05$), but the increase in extensive interval running group was statistically significant ($p<0.05$); there was a significant increase at $p<0.05$ level in both experimental groups in pre-test and post-test scores of the 24th training session. The comparison of the results obtained from the first and the 24th training session pre-test scores showed a significant increase in all groups. Consequently, aerobic training conducted with continuous running method was found to lessen resting heart rate, blood pressures, and percent body fat of 15-16 year-old male basketball players to a greater degree when compared to those conducted with extensive interval running method. There was an increase in acute hormone levels, whereas an increase was not determined in prolonged training except from cortisol levels.

FPT# 52 PHYSIOLOGICAL PROFILE OF THE ELITE MILITARY PENTATHLON TEAM.

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Military pentathlon includes shooting, obstacle run, swimming, throwing and cross-country (8 km). This combination is quite different from the ordinary pentathlon. The obstacles run consists of 20 obstacles in 500 m. The swimming competition includes 5 obstacle in 50 m. Therefore different energy pathways are recruited. Aerobic and anaerobic properties of the athletes must be well trained.
Six elite military pentathlon athletes (mean age 26.6±1,5 years, mean height 176.5±3.4 cm and mean weight 72±5 kg) were tested to determine their physiological capacities. The physiological profile group Hb, AP, Max VO2 ml/kg.min significantly increased after training ($p<0.005$), but values of PBF and BW significantly decreased ($p<0.005$), In HA group FVC, Hb, AP, Max VO2 ml/kg.min and Max VO2 L/min significantly increased but PBF, HR and BW significantly decreased ($p<0.005$). In order to compare the increase at values after training in SL and HA group, values after training were subtracted from the values of each two groups after training and then t-test was made between these two independent groups for the values obtained. In terms of FVC, AP and Max VO2 ml/kg. min, the values in HA group significantly increased (FVC; SL 3.5%, HA 7.2%, AP; SL 4.5%, HA 9.5, Max VO2 ml/kg.min; SL 3.1%, HA 4.9%), but values of PBF significantly decreased for HA groups (SL 1.4%, HA 2.0%) ($p<0.005$).
According these data physiological parameters significantly increased in a positive way at both groups. But increase at high altitude groups was greater. Nevertheless it has been reported that these values returned to the increase in values returned to the increase in values at sea level after three weeks. Making the measurements after three weeks at each group and repeating the comparison between each two group would the studies on this topic

FPT# 53 EFFECTS OF AGE, SEX AND EXERCISE ON SPEED AND ANAEROBIC POWER IN 6-14 YEARS OLD CHILDREN

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The Purpose of This Study : The aim of this study was to investigate effects of age, sex and exercise habits on physique, speed and anaerobic power of children.
Material and Methods : For the purpose of this study, variables of height, weight, skinfold tickness, speed and anaerobic power were tested in total 500 subjects including 285 males and 215 females. Two-way ANOVA (simple factorial) was used to determine effects of age, sex and exercise habits on physique, speed and anaerobic power in children.

Results:
Results of this study showed that age factor had no significant effect on anaerobic power, subskapula and abdominal skinfolds, while sex factor did not affect biseps and triseps skinfolds. Other parameters were significantly affected by age and sex factors. Exercise habit showed statistically significant effect on sum of 5 skinfolds, 20 meters sprint and second 10 meters of this sprint in children. Both of sex and age factors had only significant effects on first 10 meters of 20 meters sprint.
Conclusion : Exercise habits and age, sex factors effect on body composition, speed and anaerobic power in 6-14 years old children.

FPT# 54 COMPARISION OF THE EFFECT OF INTERVAL TRAINING AT SEA LEVEL AND HIGH ALTITUDE ON SOME PHYSICAL

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The aim of this study was to compare the effect of extensive interval training at high altitude and sea level. 44 sportsmen (20.1±0.6 year old) who have been playing the basketball regularly for six years were volunteered participate in the study. Prior to study body weight (BW), heart rate at rest (HR), percentage of body fat (PBF), hemoglobin (Hb), force vital capacity (FVC), anaerobic power (AP) measured by vertical jump method, Max VO_2 (Max VO_2 ml/kg.min and Max VO2 L/min) measured by shuttle run were determined in all subjects at sea level. Subjects then classified randomly into two groups consisted of 22 person. Extensive interval training was made four days a week for eight weeks in the first group at 1890 m (HA) and the second group at sea level (SL). All measurement were repeted after eight weeks. Paired t-test was employed for comparing between after training (AT) and before training (BT) values. In SL group Hb, AP, Max VO2 ml/kg.min significantly increased after training ($p<0.005$), but values of PBF and BW significantly decreased ($p<0.005$), In HA group FVC, Hb, AP, Max VO2 ml/kg.min and Max VO2 L/min significantly increased but PBF, HR and BW significantly decreased ($p<0.005$). In order to compare the increase at values after training in SL and HA group, values after training were subtracted from the values of each two groups after training and then t-test was made between these two independent groups for the values obtained. In terms of FVC, AP and Max VO2 ml/kg. min, the values in HA group significantly increased (FVC; SL 3.5%, HA 7.2%, AP; SL 4.5%, HA 9.5, Max VO2 ml/kg.min; SL 3.1%, HA 4.9%), but values of PBF significantly decreased for HA groups (SL 1.4%, HA 2.0%) ($p<0.005$).
According these data physiological parameters significantly increased in a positive way at both groups. But increase at high altitude groups was greater. Nevertheless it has been reported that these values returned to the increase in values at sea level after three weeks. Making the measurements after three weeks at each group and repeating the comparison between each two group would the studies on this topic.

FPT# 55 THE EFFECT OF ACUT AEROBIC AND ANAEROBIC EXERCISES ON IMMUN PARAMETRE

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Exercise training is the highest stress body is subjected to. The body responds this stress by several physiological changes on metabolic, hormonal and immunological systems.
This study was desinged to examine immunological responses to acute exercise before and after aerobic and anaerobic training.
24 sedantery male university staff and students were taken to this study randomly. They were separated into two groups as aerobic and anaerobic. Physical examinations, resting EKGs, pulmonary function tests and metabolic condition tests by breath method (with Bruce Protocol) were taken for each group. After their anaerobic thresholds were determined, training for aerobic group comprised which supervised cycle ergometer exercise took place (30 min. at %50 MaxVO_2), hearth rate under the anaerobic threshold; training for anaerobic group which supervised cycle ergometer exercise took place (20 min. at %75 MaxVO_2), hearth rate above the anaerobic threshold. Their hearth rate controled during the exercise by Polar Tester.
Samples of peripheral venous blood were taken at rest (E_r), after 1 ($E_{1\text{-}min}$) and 45 min ($E_{45\ min}$) of post exercise. The following lymphocyte subsets were determined by flow cytometry : $CD3^+$, $CD4^+$, $CD8^+$, $CD19^+$, $CD56^+$. The acut effect of exercise were determined in this blood samples.
The effect of exercise to number of leucocyt, leucocyt subsets and lymphocyte subsets were investigated. The acute exercise in aerobik group; increase of neutrophile difference between E_r and $E_{1\text{-}min}$ was significant ($p<0.05$). Increase of lymphocyte was found non significant. The decrease of neutrophile value and lymphocyte was significant at $E_{45\text{-}min}$ ($P<0.05$). Anaerobic group show significant increases between E_r and $E_{1\text{-}min}$ in the value of leucocyt (%70, $p<0.001$), lymphocyte (%88, $p<0.001$), neutrophile (%60, $p<0.01$) monocyte (%73, $p<0.01$) and significant decreases between E_r and $E_{45\text{-}min}$ leucocyt, lymphocyte (%22, $p<0.01$), monocyte (%7, $p<0.05$).
Subsets of lymphocyte $CD3^+$, $CD4^+$, $CD8^+$, $CD19^+$, values decrease in aerobik group in E_r according to $E_{1\text{-}min}$, $CD56^+$ (%35, $p<0.01$) increases. $CD3^+$, $CD4^+$, $CD8^+$, $CD19^+$, values in anaerobik group decrease in E_r according to $E_{1\text{-}min}$, $CD56^+$ (%77, $p<0.001$) increases. There was no changes in the ratio of $CD4^+/CD8^+$ in aerobik group at $E_{1\text{-}min}$ and the ratio changes inversily in anaerobic group.
Statistical analysis were done by Manova Test.

FPT# 56 EFFECTS OF SMALL AMOUNT OF WEIGHT LOSS AND LOW-INTENSITY AEROBIC EXERCISE ON BIOCHEMICAL PARAMETERS AND BLOOD PRESSURE

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The contribution of excess body weight and sedentary life style to morbidity and premature mortality is a well-studied subject but is it necessary to lose large amounts of weight to gain the benefits of weight loss? We examined the association between a relatively small

amount of weight loss and glucose, triglyceride, total cholestorel, HDL-cholesterol, LDL cholesterol, systolic blood pressure and diastolic blood pressure to start to answer this question.

We studied 25 nonsmoking men and women ages 35-62 who enrolled in the GENLAB WELLNESS PROGRAM. Initially height, weight, BMI, body composition, waist/hip ratio, glucose, triglyceride, total cholesterol, HDL-cholesterol, LDL-cholesterol, systolic blood pressure and diastolic blood pressure were measured in a fasting state. Following these measurements, the subjects were started on a low fat, high complex-carbohydrate and fiber diet and a low intensity aerobic exercise program four times a week for a total of six weeks.

Even though the amount of weight loss during this six week period was <5% of initial body weight, significant reductions all biochemical parameters and systolic and diastolic blood pressures were found.

Our findings show that even a small amount of weight loss and four times a week low intensity aerobic exercise can have far reaching benefits.

FPT# 57 THE CORRELATION BETWEEN PRESUMED PHYSICAL FITNESS AND ESTIMATED MAX VO2 LEVEL USING THE ASTRAND TEST

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Even though all of us realize the importance of exercise, when it comes to actually doing it, we feel that the activity that we do during our daily lives is enough to keep us fit.

We studied 52 nonsmoking men and women came and women who came to GENLAB MEDICAL DIAGNOSTICS AND RESEARCH LABAROTORY for routine blood work and during guestioning stated even though they did not perform routine exercise, they felt that their fitness level would be acceptable due to living a very active life.

In these subjects age, weight, BMI, body, composition and smoking history were obtained and they were made to perform the Astand test in order to estimate their max Vo_2 level.

Our findings show that of the people who rated their daily activity as being high, 94% had low max Vo_2 and below average fitness levels. This shows that presumption of activity does not correlate well with max Vo_2 and fitness levels and all people should be encouraged to perform at least a low-intensity of their daily lives.

FPT# 58 ANAEROBIC THRESHOLD PARAMETERS IN EXERCISE INDUCED ASTHMA

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Ventilation increases considerably at the' level of ventilatory (anaerobic) threshold. Hyperventilation is the most important factor in Exercise Induced Asthma (EIA), so that it is the performance limitating system in exercise. The aim if this study was to evaluate anaerobic threshold parameters with response to maximal exercise test.

Twenty-three athletes with exercise induced dyspnea ranging in age between 17 and 30 (mean age 20.8±3.1 years) years and 18 control male athletes with a mean age of 21±4.8 years were enrolled in the study.

In order to diagnose EIA and to determine the maximal aerobic capacity of the subjects, SensorMedics 2900c Metabolic Analyzer attached to an ergometric bicycle was used and an incremental test protocol with increasing loads of 50 watt at every 3 minute was applied.

Pre and post-test spirometric values were measured. 15% or more declines of the FEV_1/PEF values were considered as a definite diagnostic criterion for EIA. 17 of 23 athletes were found to have EIA. At the ventilatory threshold the following data for the athletes with EIA were obtained : Minute ventilation (VEVT) 71.6 ± 11.7 lt/min, oxygen consumption (VO_2VT) 36.6±6.3 ml/kg/dak, R value (RVT) 0.98±0.05, heart rate (HRVT) 169±8 beat/min, work load (WLVT) 164.1±24.3 Watt, dispnea index (DIVT) 69.1±9.9 lt/min.

There were no significant correlation ($p>0.05$) between the EIA and the control group regarding the above mentioned parameters at the ventilatory threshold except of RVT ($p<0.0003$).

The data obtained at the ventilatory threshold were not very different between the two groups, therefore we concluded that it is very safe for EIA suffering athletes to exercise at the anaerobic threshold.

Statistical analyses : Mann-Whitney U test was employed to search for the significance between the relevant parameters.

FPT# 59 THE ACUTE EFFECT OF HIGH ALTITUTE ON SOME PHYSIOLOGICAL PARAMETERS OF ADULT SEDANTERS

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The purpose of this study was to determine the acute effect of high altitute on resting heart rate, systolic-diastolic blood pressures, anaerobic-aerobic powers, lung functions and reaction time of sedanter subjects. With this aim 3 female and 6 male sedanter subjects voluntarily participated in this study.

Mean age, height and body weight of subjects were 27.00 ± 1.73 years, 175.67 ± 5.13 cm and 69.33 ± 13.65 kg for females and 34.50 ± 8.12 years, 175.67 ± 8.28 cm and 83.67 ± 13.17 kg for males respectively. Physical tests were applied to the subject at 860 m and 1850m. altitues.

The t test was used at the 0.05 level of significance to test the differences between the measured parameters.

As a result of this study, aerobic power of female subjects and aerobic power, FVC, vital capacity, of male subjects were significantly low, and anaerobic power of male subjects was found significantly high at high attitute at the 0.05 level of significance. There were no significant diferences in blood pressure, resting heart rate FEV_1, MVV, and reaction-times of all subjects at different altitues.

FPT# 60 EFFECTS OF HIGH ALTITUDE ENDURANCE TRAINING ON SOME PERFORMANCE, RESPIRATION AND BLOOD PARAMETERS OF CROSS COUNTRY SKIERS

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G.Ü. Beden Eğitimi ve Spor Yüksekokulu ANKARA

This study was done to find out the effect of one week endurance training in high altitude (Erciyes mt. 2300m) on some performance , respiration and blood parameters of cross-country skiers. A total of 18 (9 male, 9 female) elite athletes (mean age 16.6 year) were voluntarily participated into this study. Some performance, respiration and blood parameters of athletes were measured four

times (before altitude, 1st day in altitude, after seven days training in altitude and 1st day after altitude) by using standardized field and laboratory tests. Statistical analysis were done by using student - t test and Wilcoxon tests.

As results of this study; although there were significant improvements in aerobic power of athletes ($p<0.01$), important improvements were not observed in anaerobic power. In addition there were no significant changes in vital capacity (VC), forced vital capacity (FVC) and first second of forced expiration volume (FEV1) at the end of one week training in altitude. Although significant improvements were observed in erythrocyte (RBC) and hematocrite (hct) values of athletes before and after training in altitude ($p<0.05$), improvements in hemoglobin (Hg) were not found significant.

FPT# 61 COMPARISON OF THE VITAL CAPACITY AND HAND GRIP OF RIGHT AND LEFT FOOTED SOCCER PLAYERS

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Purpose of the study:
The aim of this study was to compare of the vital capacity and hand grip of right and left foot preference sportsmen in football game.
Material and Methods:
Foot preference was determined according to the kicking ball preference. Vital capacity (VC) was determined by a portable spirometer. Hand grip was determined by a hand dynamometer.
Results:
Total 55 soccer players were participated voluntarily to this study. Right-footed soccer players average vital capacity, right and left hand grip datas were as follows: 5.18 ± 0.61, 38.33 ± 5.13 and 39.07 ± 6.04. Left-footed soccer players average vital capacity, right and left hand grip datas were as follows: 5.11 ± 0.84, 36.76 ± 4.26 and 39.36 ± 4.64
Conclusions:
This findings show that in right footed soccer players as vital capacity increase right hand grip increase, left footed soccer players as vital capacity decrease right hand grip decrease.

FPT# 62 THE EFFECTS OF KNEE EXTENSION / FLEXION AND ANKLE PLANTAR / DORSIFLEXION ISOKINETIC EXERCISES TO EXPLOSIVE POWER OF SEDENTARY MEN.

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The purpose of this study was to investigate the effects of isokinetic exercise to explosive power of men. The subjects were twenty male sedentary university students. Subjects were separated in two groups randomly (ten for each group). The knee group made knee extension / flexion and the ankle group planter / dorsiflexion exercises. Both groups were equal for age, weights and heights. The mean age, weight and height of the knee group were 20.28 ± 1.3 years, 60.33 ± 6.4 kg, 178.4 ± 8.1 cm respectively as the ankle groups were 20.9 ± 2.1 years, 66.1 ± 8.5 kg, 177 ± 7.7 cm. Each group exercised three times per week for eight weeks isokinetically. Wingate anaerobic power test (WAPT) and isokinetic strength test (IST) were undergone by all subjects to determine the starting sedentary values . As field tests, vertical jumping (VJ) and horizontal jumping distance (HJD) of each subject were estimated before the training sessions started. After eight weeks training period all subjects VJ and HJD increased significantly but the groups showed no significant differences between each other. IST and WAPT values of both groups increased also significantly with the exception of fatigue index of WAPT. Present results indicate that isokinetic exercise improves the explosive power of sedentary men.

FPT# 63 THE EFFECTS OF ISOMETRIC KNEE EXTENSION TRAINING PROGRAMS WITH DIFFERENT FREQUENCIES TO ANAEROBIC POWER

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20 Healthy young, sedentary male university students were included the study. Subjects were divided into 2 groups. The Group (n=10) which performed isometric exercise 3 days a week during 6 weeks has 20.90 (± 1.10) mean age, 69.45 (± 6.80) kg body weight and 178.30 (± 6.70) cm height. The other group which performed isometric exercise 5 days a week during 3.5 weeks has 21.20 (± 0.79) mean age, 70.15 (± 7.5) kg body weight and 177.20 (± 6.70) cm height. In the present study, we investigated the effects of isometric knee extension training programs with different weekly frequencies to anaerobic power, vertical jump isometric muscle power, muscle circumference, % fat, fat weight, fat free body weight, body density and cardiovascular system. Each group which consisted of ten subjects were performed isometric knee extension training by using CYBEX 350 Extremity System dynamometer. Before the exercise program, all subjects were evaluated by Wingate test, vertical jump test, isometric knee extension test, body fat measurement and thigh circumference measurement. Then, one group was performed 18 trials during 6 weeks by 3 days a week; the other group was performed same 18 trials during 3.5 weeks by 5 days a week. Each session had 9 maximal isometric contractions at 40°, 60°, 90° extensions of both legs. Each contraction was 6 seconds. Resting periods between different angles were 40s and 60s between each set (each set included the contractions of all angles). In the initial trial, exercise was started with dominant leg and then the last was the first consecuting study. In every three trials, heart rates (Polar Heart rate Monitor) and blood pressures were recorded. At the end of training program, all tests and measurements were reevaluted. Statistical analysis were performed by using Paired samples t-test and Independent samples t-test. In this study, it is demonstrated that isometric exercises increased the anaerobic power, vertical jumping level, and isometric muscle power. And also isometric exercises resulted in hypertrophy. In conclusion, it is suggested that increasing in the weekly frequencies of isometric training programs will obtain the same developments in comparison with the programs with longer duration and lesser weekly frequencies.

FPT# 64 ELECTRO-PHYSIOLOGICAL EVALUATION OF VISUAL ATTENTION OF BASKETBALL REFEREES.

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Basketball referees are a group of people who are being subjected to intensive visual tasks because of their profession. The aim of this work is to compare the visual attention performance of sedentary

people and the basketball referees. Event related brain potentials (ERPs) are EEG changes recorded in response to a certain stimulus pattern in any sensory modality. The stimulus pattern needs to be repeated, and the EEG epochs corresponding to the stimulus pattern need to be averaged so that the brain responses become remarkable. There are several different ERP's which reflect different features of cognitive processing of the brain and can be evoked by different patterns of stimuli. P300 wave of ERPs is a strong correlate of the directed attention, hence seems to be useable as a measure of the attentional performance. To obtain a P300 response the oddball paradigm is most often used where two different kinds of stimuli are presented by asking the subject to direct his/her attention to kind of stimulus (target) and to ignore the other (non-target). The cognitive response of the subject creates a positivity about 300 ms after the onset of the target (P300) whereas not after the non-targets. Different features of visual stimuli such as colour, texture etc. have been used for creating the differences between the target and non-target stimuli. For our application, spatial differences were more relevant, because in real conditions, the referee's attention is directed to abrupt changes of the relative position of the ball to the player, the player to player, and player and ball to the basketball court. Therefore, we used a simple stimulus pattern where white bars on a computer screen could be located on the right or left of a fixation point. The task of the subject was defined to count mentally the stimuli appearing on a certain side of the fixation point. In a preliminary study, we obtained clear P300 waves by the application of this paradigm on normal sedentary people, where all parameters such as eye movements etc. were precisely controlled. The present results obtained by ten elite referees and ten sedentary person person show that there are clear differences in the latencies and amplitudes of both the P300 and N170 waves. For the targets appearing on the right side referees showed longer N170 (C4, O2 $p<0.05$) and P300 (C4 $p<0.05$) latencies and bigger P300 amplitudes (O1 $p<0.05$). For the targets appering on the left side referees showed bigger P300 latencies (P3 $p<0.05$). We conclude that the training of visual attention processes are reflected in ERPs, and hence ERPs can be used as a reliable and objective evaluation method of visual attention of referees.

FPT# 65 EVALUATION OF WINGATE RESULTS OF PROFESSIONAL MALE FOOTBALL PLAYERS AND SEDENTARY MALE

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The characteristics of a person depends on intramuscular regeneration rate of ATP, instramuscular concentraion of glycogen, toleration of low pH and high lactic acid levels, the ratio of muscle fiber type and coordination is defined as anaerobic power.

Regular and continuous training increases mass of muscles, enzyme systems and glycogen stocks of muscles is known from our previous knowledge. To investigate the effects of this kind of training to anaerobic power professional male football players and sedentary male were selected and the relationship between Wingate tests values were searched.

The Wingate tests of 15 male football players and 15 sedentary male were done. Peak power, minimum power, mean power, total work and fatigue index parameters of two groups were determined. Student-T test was used to evaluate the results. There is significant difference between the peak power values of football players and sedentary male ($p<0.05$). The difference of mean power and minimum power values of two groups were found significant ($p<0.01$). The football players showed higher values. Fatigue index were also significant ($p<0.01$) and the values were higher than sedentary male. Total work results of football players were also significant and the values higher than sedentary male ($p<0.001$).

FPT# 66 COMPARING SOME PHYSIOLOGICAL AND ANTHROPOMETRIC STRUCTURES OF RUSSIAN AND TURKISH NATIONAL BOX TEAMS

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The purpose of this study is to compare Russian and Turkish National Box Teams considering some physiology and anthropometric structures. In this study, there weere paricipated 19 subjects from Turkish Box National Team (T.N.B.T) and 17 subjects from russian National Box team (R.N.B.T.). Height age, weight, heart rate, systolic and diastolic blood pressure, vertical jump, anaerobic power and body fat % of all subjects were measured respectively. At the same time, their skinfolds (biceps, triceps subscapula, chest, suprailiac, abdominal, thigh), their circumferences (head, neck, chest, shoulder, abdomen, wrist), their length (upper arm, total, arm, thing, calf and total length) and their diameters (biacromial, wirst, chest and chest width,) were measured respectively. Then mean (X) and standard deviation (SD) of all valables were compared between T.N.B.T. and R.N.B.T. At the end of these, t-test was calculated for each variable.

As a result; the some variable of light weight T.N.B.T. and R.N.B.T. were significantly differences in physiological parameters: flexibility ($t=2.99$) and body fat ($t=-8.12$), in diameter: biacromial ($t=-3.49$), wrist ($t=-2.40$), chest width ($t=-6.15$) and chest depth ($t=-2.71$), in circumference; abdominal ($t=-7.11$) and calf ($t=13.00$), in length; total arm ($t=-4.18$), upper arm ($t=-8.70$), forearm (4.63) and thigh ($t=9.52$). in skinfold; subscapula ($t=-12.53$). abdominal ($t=-7.99$), triceps ($t=-6.36$), chest ($t=-8.63$), suprailiac ($t=-13.06$), and thigh ($t=-24.43$). On the other side, the rest of variables weren't significantly in differences the rest of the variables.

The some of middle weight T.N.B.T. and R.N.B.T. were significantly differences in physiological parameters; flexibility ($t= 4.21$), bdy fat % ($t=-7.16$) in diameter: biacromial ($t= -9.49$), wrist ($t=-3.30$) and chest ($t=- 8.00$), in circumference: neck ($t=- 5.56$), abdominal ($t=-2.84$), shoulder ($t=-4.54$) and calf ($t=8.42$), in length: hand ($t=3.49$), upper arm ($t=5.64$), forearm ($t=- 3.85$) and total leg ($t=- 3.24$), in skinfold; abdominal ($t= -7.99$), biceps ($t=-6.07$), chest ($t=-8.55$), subscapula ($t=-8.32$), suprailiac ($t=-8.85$) and thing ($t=-17.16$). On the other side, the rest of variables weren't significantly differences in the rest of the variabliables.

The some variable of heavy weight T.N.B.T. and R.N.B.T. were significantly differences in physiological parameters; age ($t=3.09$), body fat % ($t=-3.49$). in diameter: biacromial ($t=-10.85$) and chest ($t=-6.06$), in circumference; head ($t=-2.19$), neck ($t=-3.49$), chest ($t=-4.25$), abdominal ($t=-4.71$), shoulder ($t=-7.93$) and calf ($t=2.90$). in length; hand ($t=9.80$), total arm ($t=10.57$). upper arm ($t=19.89$), forearm ($t=-13.56$) and thing ($t=-5.10$), in skinfold; abdominal ($t=$

5.09), biceps (t=-2.45), chest (t=-4.13), subscapula (t=-2.80), supralliac (t=-4.18) and thingh (t=-5.80). On the other side, the rest of vairables weren't significantly differences in the rest of the variables, are long because of that all those things are important criteria for boxing.

FPT# 67 COMPARISON OF SOME PHYSICAL AND PHYSIOLOGICAL PARAMETRS OF U 19 BALKAN NATIONAL BADMINTON TEAMS AND RELATIONSHIP WITH TEAMS SUCCESS

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The purpose of this study is to compare some physical and physiological parameters of U 19 Balkan National badminton teams and to assess relationships between these parameters and teams succes. A total of 50 badminton players (26 male, 24 female) from Türkiye (8 male, 6 female), Greece (4 male, 4 female) Romania (' male, 4 female), Yugoslavia (2 male 2 female), Moldavia (4 male, 4 female) and Bulgaria (4 male, 4 femal) were voluntarily participated into this study. Height, weight, percentage of body fat, hand grip, flexibility, audio and visual reaction time and somatotype of subjects were measured by using standardised field and laboratory tests. Statistical analyses were done by using mean, percentage differences and ANOVA).

As results of this study; mean percent body fat of 11.42%, 12.05%, 12.3%, 12.44%, 13.71%, 14.42% were found in Moldavia, Romania, Yugoslavia, Türkiye, Bulgaria and Greece teams respectively. No significant diffefrences were found among percent body fat of teams. The highest flexibility value was found in Yugoslavia team with 29.5 cm others were 29.43cm, 29.18cm, 28.06cm, 26.62cm, 26.18 cm in Greece, Moldavia, Bulgaria, Turkiye, Romania teams respectively. There were no significant differences among groups. Right hand grip strength of 39.42kg, 38.1 kg, 37.61kg, 34.36kg, 33.7kg, 30.9 kg were found in Bulgaira, Greece, Moldovia, Turkiye, Romania teams respectively. The shortest audio reaction time was found in Turkish team with 11.8ms. The others were 12.3 ms 12.37ms 13.12 ms, 13.5 ms, 14.62ms in Romania, Greece, Moldovia, Yugoslavia, Bulgaria. Visual reaction time of 12.5 ms, 12.6 ms, 12.7, 13.08 ms, 14.0ms, 14.75 ms, in Romania, Greece, Yugoslavia, Turkiye, Moldovia, Bulgaira respectively. Both audio and visual reaction times of groups have no significant differences.

It was found that mesomorphic component was dominant among the somatotypes of all teams participated in this study. There were no significant diffences between the success of teams obtained at the end of championships (Bulgaria, Romania, Moldovia, Turkiye, Greece, Yugoslavia) and percent body fat, grip strength, flexibility, audio and visual recation time and somatotypes parameters of teams.

These results showed thosè not only physical and physiological paramaters suk also the other factors such as psychological, technical and tactical have also importance for success in Badminton.

FPT# 68 VENTRICULAR LATE POTENTIALS IN VETERAN ATHLETES

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Purpose of the study:

Several studies have proven that patient that with left ventricular hypertrophy (LVH) reveal increased incidence of malignant ventricular arryhmias and sudden death. Low amplitude ventricular tachycardia and may identify those at risk of sudden cardiaac death. The aim of this study was to investigate the incidence of LP in veteran athletes having LVH.

Material and methods:

Twenty-six veteran athletes (Group I) and 50 hypertensive patients (Group II) with LVH were enrolled in the study. Left ventricular mass (LVM) was determined echocardiographically and left ventricular mass index (LVMI) was calculated as LVM (g) /body surface (m^2). In both groups, LP was detected by signal-averaged electrocardiography (SAECG) which is a technique involving computerized analysis of segments of a standard surface electrocardiogram. A positive SAECG is defined by filtered QRS duration> 114 ms, and/or low amplitude signal duration > 38ms, and/or root mean square voltage in the last 40 ms of< 20μV Student t-test was used for statistical analysis.

Results:

There were no significant differences between age, sex and LVMI of the two groups. The LP incidence was statistically higher in hypertensive patients than in athletes.

	Mean age (years)	Sex (males%)	LVMI (g/m^2)	LP (%)
Group I (n=26)	55±8	85	186 ± 14	15
Group II (n=50)	56±7	64	224 ± 18	42
P value	ns	ns	ns	0.03

Conclusion:

Although there was no significant difference between the LVMI of athletes and hypertensive patients, the incidence of ventricular late potentials was significantly higher in hypertensive patients compared with veteran athletes. The main reason may be that the mechanism of ventricular hypertrophy in athletes is different than accepted in cardiovascular disease.

FPT# 69 PHYSIOLOGICAL CHARCTERISTICS AND ENDURANCE PERFORMANCE OF ELITE TRIATPLETES

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Purpose:

To characterize the physiological profile eof triathletes and to assess their endurance performance by means of incremental cycle and treadmill tests according to different test protocols.

Material And Methods:

Eight elite triathletes (7 males, 1 female) participated to the study. One male and female athletes were the champion of Turkey, 7 males, (mean age: 21.71±4.34 years, body weight: 68.71±5.82 kg, height: 173.71±3.49cm) and the one female (age: 20 years, weight: 57kg,

height: 168 cm) were evaluated by means of an incremental cycle and treadmill tests. Body fat (%) and somatotypes of triathletes were measured and performed three incremental tests until exhaustion: while cycling, while running at increasing grade and constant speed (GRADE protocol) and while running at increasing speed and constant grade (SPEED protocol) respectively. During the tests heart rate (HR) evaluated.

Results:

Body fat (%) of male and female triathletes were 13.17±2.88, and 10.90 respectively. Somatotypes of triathletes were found generally ectomezomorh. In the cycloergometer test means of HR of the male triathletes (at the 270W load) were 183±11. HR of the female triathlete (at the 210W load) was 182. In the GRADE protocol, means of HR of the male triathletes (at the 10% grade and 12 km/h at constant speed) were 190±5.HR of the female triathlete (at the 6% grade and 12 km/h at constant speed) was 187. In the SPEED protocol, means of HR of the male triathletes (at the 15 km/h speed and 6 % at constant grade) were 191±2. HR female triathlete (at the 12km/h speed and 6% at constant grade) was 183.

Coclusion:

In spite of some differences among protocols, heart rates significantly increased during incremental tests.

FPT# 70 THE EFFECT OF PLYOMETRIC TRAINING ON THE JUMPING ABILITY AND ON SOME ANTHROPOMETRIC CHARACTERISTICS OF 14-16 YEARS OLD MALE BASKETBALL PLAYERS

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The aim of this study is to examine the effects of Plyometric training on the jumping ability and on some anthropometric characteristics of 14-16 years old male Basketball players. With this aim 12 volunteered male as an experiment group and 12 as a control group joined the study. Experiment Groups' age average is 14.83±0.72 year, height average is 163.92±5.4 cm and the body weight average is 48.00±6.82 kg. Control Groups' age average is 14.75±0.87 year, height average is 165.67±5.8 cm and the body weight average is 49.75±7.70 kg Control group had only the basketball training whereas experiment group had plyometric training in addition to the basketball training. During this study both group actualized 30m sprint test, vertical and horizontal jumping tests through pre and post tests. Anthropometric values were also taken from both group while carrying out this study. Pre and Post tests results were examined and a statistical difference was found in the experiment group ($p>0.05$,$t=5.5$). The same difference was not detected in the control group. As a result, with the plyometric training which lasted 12 weeks (3 days a week and 3 sets a day) logical differences were detected in jumping, sprint and anthropometric characreristics.

FPT# 71 EVALUATION OF ANTHROPOMETRIC MEASUREMENTS OF CHILDREN AND ADOLESCENTS ATTENDING TO SUMMER SCHOOLS IN ANKARA

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Purpose:

This study was conducted on June-August 1998 to evaluate the anthropometric measurements of children and adolescents attending to summer schools in Ankara in crosssectional design.

Methods:

The body weights and heights, skinfold (biceps, triceps, subscapular, suprailiac) thicknesses, mid upper arm circumference (MUAC) and armspan measurements of 1600 children and adolescents (698 boys, 902 girls), aged 4-18, were measured by using the standardized methods. Measurements which have reference values were evaluated according to NCHS reference data. Body composition of 143 students were assessed both from bioelectrical impedance analysis (BIA) and skinfold measuements calculated according to equations of Durnin-Womersley.

Results:

The percentages of body weight, height, body mass index, MUAC, triceps and subscapular measurements of male students that were below the 5^{th} percentile were 6.6, 7.5, 11.5, 16.1, 2.5 and 1.0, respectively. Among female students these ratios were 4.3, 4.8, 10.0, 13.0, 4.3 and 1.7%, respectively. With respect to same evaluation, the percentages above the 95^{th} percentiles were 8.6, 9.0, 4.2, 2.6, 5.0 and 2.9% for males; 5.0, 7.3, 1.7, 1.1, 3.0 and 1.5% for females, respectively. Although the percentage of body fat of females estimated from skinfold thicknesses tend to increase with respect to age, in males this ratio showed a decrease after 15 years old. A positive correlation was found between body height and armspan in all age groups ($r:0.960$, $p>0.01$). The percentage of body fat differences calculated from skinfold thicknesses and BIA found to be statistically significant ($p>0.01$).

Conclusion:

The data which were evaluated according to reference values show that in all age and gender groups nutritional problems do occur. For this reason, it is obvious that there is a neccessity for nutritional education programme to take the attention on growth monitoring, adequate and balanced nutrition and physical activity.

FPT# 72 VERTICAL JUMP, 30 M SPRINT AND 20 M SHUTTLE RUN PERFORMANCES OF 11.5 TO 14 YEARS OLD WRESTLERS, SOCCER PLAYERS AND SCHOOL BOYS

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SESAM ANKARA

The purpose of this study was to compare vertical jump, 30 m sprint and 20 m shuttle run performances of 11.5 to 14 years old wrestlers, soccer players and school boys.

Thirty three male wrestlers (12.81± 71 years age), 29 male soccer players (12.85±94 years age) and 71 boys (12.6± 47 years age) attending to a govenment school served as subject groups of this study. The wrestlers and soccer players had been trained regularly for 1-4 years.

The height, body weight and skinfold thicknesses of subjects were measured. The percentage of fat in the body was estimated from the measurements of skinfold thicknesses. Vertical jump test included a counter movement jump performed on a force platform. 30m sprint time was recorded using photocells and an electronic timer. In 20m shuttle run test, an electronic timer was used. To identify significant differences of anthropometric and motoric parameters between the wrestlers, soccer players and school boys, one-way ANOVA was used. As post-hoc analysis, Duncan test was conducted. Lvel of significance was $p\leq0.05$.

No significant differences were reported in age, height, body fat percentage and fat mass between the wrestlers, soccer players and

school boys. Body weight of wrestlers and free mass of wrestlers and soccer players were significantly higher than the school boys. The vertical jump performance of wrestlers was significantly higher than the performances of soccer players and school performance of wrestlers was significantly higher than the performances of soccer players and school boys. 30m sprint and 20 m shuttle run performances of soccer players and wrestlers were significantly higher than the shool boys' performances. In 30 m sprint test, the performance of soccer players and in 20 m shuttle run test, the performance of wrestlers were higher.

In conclusion, endurance, sprint and jump performances were higher in the trained boys than in the untrained boys and it was suggested that the physical trainig may improve performance during growth.

FPT# 73 A PRE-STUDY OF EXAMINIG SOME PHYSIOLOGIC AND KINEMATIC DIFFERENCES DURING JUMPING EXERCISES

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The aim of this study is to examine some physiologic and knimatic differences during different jumping exercises. With this aim 17 voluntary male subjects joined this study. Subjects' age average; 21.52±2.9 year, height average; 174.64±6.3 cm and body weight average is 69.38±7.5 kg. During this study subjects did Counter Movement jumping (CMJ) and Squat Jumping (SJ) with respectively %0, %4, %6 and %8 of their body weight. Subjects trochanter height, leg power at 90-120 angles and circumstance measure were also taken during the study. Subject some kinematic values during CMJ and SJ jumping were recorded. through APAS system. By the help of jumping system (Bosco Test System) jumping height values were found. When the results were analysed a statistical difference between CMJ and SJ which subjects did %0, %4, %6 and %8 of their body weight was found ($p<0.05$, $F=14.5$, $t=6.4$). Also when the lowering of body Centre of Gravity (CG) at different percentages were examined it was found that changing take a place at CG decreased as the weight increased. The decrease in CG's the difference in jumping heights and contact time on the ground during different jumping exercises and jumpings made at different body weight percentages can be explained in this way; as the amount of load which affects the subjectmatter muscle increases Golgi Tendon Organs and Muscle spindles in the muscle, get active after some point to decrease the differences stated above. In addition to these changes that depending on the leg strength and other physiologic features, these values change.

FPT# 74 THE EVALUATION OF CLICKER REAÇTION TIME, FLYING TIME, AND AVERAGE SPEED WITH AND WITHOUT TARGET FACE AMONG TURKISH ARCHERS

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The purpose of this study was to investigate the difference between Clicker Reaction Time (CRT), Fying Time (FT), and Average Speed (AS) scores with and without target face shots among Turkish Archers. 4 male, ages between 18-20 (19.75±1.25) and 3 female, ages between 16-21 (19±2.64) archers, training ages 4-8 years (males 7±1.41 and females 5.33±1.15) voluntarily participated in the study. A special device was developed (Prosport TMR ARF 3000) to measure CRT, FT, and AS. Each archer performed 18 shots with target face, and 18 shots without target face, so that; two different groups of 18 CRT, FT, and AS were recorded in training.

As a result of these measurements, significant relationships at 0.05 confidence level were not found in individual evaluation, females, males, and total subjects ($p>0.05$) with and without target face shots between CRT, FT, and AS scores.

It was concluded that; aiming on a smaller point with traget face has no effect on CRT, FT, and AS scroes. Perceptual changes on target does not effect technical characteristics of Turkish Archers.

FPT# 75 FINDING THE FORCE OF LOADİNG DURING DEPTH JUMPING DONE WITH AND WITHOUT EXTRA WEIGHT

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The aim of this study is to find the force of loading during depth jumping done with and without extra weight. With this aim 17 voluntary male subjects joined this study. Subjects' age average: 21.52±2.9 year, height average: 174.64±6.3cm and body weight average isi 69.38± 7.5 kg. During this study subjects did depth jumping up to 80cms on a platform starting with 20 cm falling height and incrising 10 cms after each jumping with the %0, %4, %6 and %8 of their body weight. Subjects trochanter height, leg power at 90-120 angles and circumstance measure were also taken during the study. Subjects some kinematic values during depth jumping were recorded through APAS system. By the help of these results subjects breaking points (BP) for every percentage, jumping height and the contact time on the groung were found. When the results were examined a satistical difference was found between subjects wumping height at their BP's and the contact time on the groung during depth jumping which subject's did with %0, %4, %6 and %8 of their body weights ($p<0.05$, $F=9.18$). On the other hand when the knee angles at their BP's were examined it was found that knee angles decrease as the percentage values increase and that this difference was statistically meaningful as well ($p<0.05$, $F=12.5$). As a results; if body weight and a fixed percentage of body weight is used during depth jumping exercises, training programs should be prepared by taking person's BP's, jumping height at this points and his contact time into consideration. Otherwise exercises done at different heights and angles wimm not achieve the desired goal.

FPT# 76 POSTURAL DEVIATIONS OF HANDBALL PLAYERS

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Purpose:

The aim of this study is to research postural deviations of handball players according to sex, frequency of training and the position of the players in the field.

Material and Methods:

New-York posture test was used for the posture evaluation (17). In this test from posterior view; head, spine, pelvis, heels and soles, from lateral view; neck, breast, shoulders, back, trunk, abdominal protrusion and waist was scored for symmetry and the relation to the vertical line. To assess reliability of New-York posture test, two investigators independently conducted two trials on all individuals. Interobserver reliability was 0.79. Students who had low postural scores, were further examined clinically(17). The measure of genu

varum and genu valgum utilized in this report is the pelvic with by the distance between midpoints of the patellas, or the pelvic patellar ratio (11). Feiss line was used to determine of pes planus during posture test (29). Statistical analysis were made by Microsta statistical analysis programs (x^2 test with Yates correction, Fisher x^2 test) (a= 0.05).

Result:

Subjects were selected according to age and training duration. 108(51 girls, 57 boys) handball players whose mean ages were 13.62 years for girl and 14.19 years for boys were taken. Training duration was 3 years, 98% of girls and 88% of boys had posterior postural deviations and 92% of girls and 91% of boys had lateral postural deviations. The most frequent postural abnormalities were shoulder asymmetry (84%), pes planus (65%) and forward neek (59%) in girls. There were 65% shoulder asymmetry, 61% forward shoulder and 56% forward neck in the boys. Shoulder asymmetry was significantly higher in girls (p=0.0378). Scoliosis and genu varum were seen more frequently in boys (p=0.0106 and p=0.0321). Shoulder asymmetry was prominent among pivots, goalkeepers and left backs (with respectly 89%, 88%, 75%). Increased lumbar lordosis was more frequently seen in midfield playmakers, left and right backs (75%). However it was not found any significant relationship batween player's position in the game and postural deviation (p>0.05). Postural deviations was not affected by training frequency (p>0.05).

Conclusion:

Most of the researchers agree that determining the ability of an athlete doesn't consist of just of evaluating cardiovascular and respiratory fuction, common motor skill testing, and strength; the flexibility of all large joints, posture, balance and walking features must also be examined. Postural deviations can develop because ofasymmetric using of extremities especially in adolescent ages. This research had examined the incidence of postural deviations in a group of young handball players. Shoulder asymmetry, pes planus, forward neck, forward shoulder, scoliosis and genu varum were the most important findings and there was statistical significance according to sex. However it was not found any significant relationship between postural deviation, player's position in the game and training frequency.

FPT# 77 AN INVESTIGATION OF LEVELS OF PHYSICAL SELF-PERCEPTION PROFILES IN ELITE ATHLETES

S. Moralı, B. Doğan
Ege Üniversitesi Beden Eğitimi ve Spor Yüksekokulu İZMİR

The purpose of this studys is to find out how athletes performing handball, basketball, volleyball, football and archery perceive themselves physically.

In this study, "Physical Self-Perception Profile", which was studied in terms of validity and reliability by H. Aşçı, and A. Aşçı and E. Zorba, was used as an inventory.

The physical Self-Perception Profile Consist of 30 questions which evaluate the athlete's athletic competence, physical condition, body strength and general physical competence.

In addition to this, there are 11 questions including the demographic features of the athletes, their athletic ages, the levels of performance they have reached and the levels of performance their teams have reached (league qualification).

Statistical analysis of the gathered data was tested using SPSS 5.0 packhage programme; one way variation, analysis, khi-square, correlation test, scheffe test, and the level of significance was found to be 05

With this study, it has been concluded that there is a significant relation between an athlete's level of Physical Self-Perception and the branch he is performing, his level of performance, condition of the team and level of performance his team has achieved.

FPT# 78 ADAPTATION ON THE ATHLETIC COPING SKILLS INVENTORY-28 TO TURKISH SOCCER PLAYERS.

E. Konter, A. Doğanay
Çukurova Üniversitesi, Beden Eğitimi ve Spor Yüksek Okulu, Balcalı, ADANA

The purpose of this study is to adapt Athletic Coping Skills Inventory-28 developed by Smith, Smoll, Shutz ve Ptacek to Turkish culture.

First, inventory was translated from English into Turkish and than back translation was done from Turkish into English. Three specialist decided for the final Turkish version of the inventory. Second, inventory had been adminestered to 346 soccer players, item and factor analysis of the inventory was done to see if there is the same structure between the original inventory and the Turkish version. Since we encountered some problems in the factor structure in the first application, we decided for the second application of the inventory. In the second application of the inventory, data were collected from 218 soccer players.

As a result of the second factor analysis, 5 subscales (coping with adversity, peaking under presure, goal setting/mental preparation, concentration and freedom from worry) and 16 items left in the adopted Turkish version of the inventory. The reliability coefficient of subscales ranges from .32 to .67 and retest reliability range from .42 to .63 in the second application which are similar with the original results.

FPT# 79 ANALYSIS OF SOME PSYCHOLOGICAL SKILLS OF SOCCER PLAYERS ACCORDING TO THEIR GENDER

E. Konter, A. Doğanay
Çukurova Üniversitesi, Beden Eğitimi ve Spor Yüksek Okulu Balcalı ADANA

The purpose of this study is to analyse some psychological skills (coping with adversity, peaking under pressure, goal setting/mental preparation, concentration and freedom from worry) of soccer players according to their gender.

Adapted version of the Athletic Coping Skills Inverntory-16 in Turkish soccer players applied to 144 male and 74 female soccer players (n=218). Athletic Coping Skills Inventory-16 measures 5 psychological skills mentioned above.

According to results of t tests, a meaningful difference was not found between the total score of psychological skills and gender (p>0.05). However, The only meaningful difference was found between goal setting/mental preparation subscale of the inventory and gender (p<.25). Results show that gender differences particularly in goal setting/mental preparation should be taken into consideration by coaches, physical education teachers and other related physical education and sports scientists and practioners.

FPT# 80 PERSONALITY CHARACTERISTICS OF THE MALE PLAYERS IN THE JUNIOR AND SENIOR HANDBALL NATIONAL TEAM

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Ankara Ü. Beden Eğitimi ve Spor Yüksekokulu Tandoğan - ANKARA

Objectives :
The purpose of this study is to determine personality characteristics of the male players in the Junior and Senior National Team and to examine differences between handball players and sedentary people.
Method :
31 Male players (aged 19.42±0.96) from Junior National Team, 21 male players (aged 23.62±3.15) from Senior National Team, and 38 male sedentary people (aged 22.82±1.31) participated in this study. MMPI (Minnesota Multiphasic Personality Inventory) was used to determine their personality characteristics. Descriptive statistics, One-way ANOVA, and Tukey test were used to analyse the data.
Results :
Findings showed that there was significant difference between sedentary people and handball players in the F ($F_{(2,87)}$=15.71), K ($F_{(2,87)}$=8.35), Hs ($F_{(2,87)}$=8.33), Hy ($F_{(2,87)}$=5.85), Mf ($F_{(2,87)}$= 5.19), Pd ($F_{(2,87)}$=7.14), Pt ($F_{(2,87)}$=13.19), and Sc ($F_{(2,87)}$=12.31) subtests. According to the results of Tukey test, it was not found significant differerence between Junior and Senior National Team but found significant difference between handball
players and sedentary people.
CONCLUSION : It can be concluded that personality characteristics of the elite handball players are different from that of sedentary people.

FPT# 81 ANALYSIS OF SOME PSYCHOLOGICAL SKILLS OF SOCCER PLAYERS ACCORDING TO BEING AMATEUR AND PROFESSIONAL

E. Konter, A. Doğanay
Çukurova Üniversitesi, Beden Eğitimi ve Spor Yüksek Okulu Balcalı ADANA

The purpose of this study is to analyse some psychological skills (coping with adversity, peaking under pressure, goal setting/mental preparation, concentration and freedom from worry) of soccer players in relation to being amateur and professional.
Adapted version of the Athletic Coping Skills Inveniory-16 in Turkish soccer players applied to 155 amateur and 63 professional soccer players (n=218). Athletic Coping Skills Inventory-16 measures 5 psychological skills mentioned above.
According to results of t tests, a meaningful difference was found between amateur and professional soccer players in terms of the total score of psychological skills ($p<0.05$). However, the further analysis of the measured psychological skills showed that there was not meaningful difference between amateur and professional soccer players in concentration, freedom from worry and coping with adversity subscales of the inventory. Subscales which showed meaningful differences were peaking under pressure and goal setting/mental preparation. More research needed in this area to have certain conclusions.

FPT# 82 THE IMPORTANCE OF SOCIO-CULTURAL FACTORS IN THE DEVELOPMENT OF WOMEN ATHLETES

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Anadolu Üniversitesi Beden Eğitimi ve Spor Yüksekokulu ESKİŞEHİR

"Perspiring, being a good athlete, being aggressive and to struggle are not qualities of men."
In this study, by making use of literature supported empirical searches the method has been used as well.
While biological differences of men and women detine the gender differences, social and cultural roles define the varieties in sex differences (Grill 1988). And the sex role is a sociological fact that reflects the female and male attitudies, bleieves, skills and needs (1). The terms gender and sex differences are used to determine the research done on this subject.
According to Grill (1992 these terms are generally used synonymously, but he suggest that sex differences define the biological differences between men and women, gender differences define the differences of social and psychological behaviour between men and women (2). While Scraton (1992) suggest that the definition of sex changes according to culture and time (3).
Ethnical structure, socio-cultural and economical conditions and gender variables which are defined as biological variables play an important role in defining the rate of women athletes participating in sports (2). However the research done on defining the participation rates and reasons of the two sexes deal less with women participants. In the researches done by Williams (1980) to defi n e the differences between the sexes that rely on biological sex was found a few examples (4).
According to Greenfolder (1992), studies on sport sociology of childhood and adolescent periods are very important in the research done on sexuality. In early childhood although both sexes join sports in the same period whereas girls alienate from sports but boys' interest increases during the period adolescent (5).
In the term sports there is an inequality between the women and men athletes. Actually these inequalities don't derive their source from biological differences as it is commonly throught; also these inequalities derive the humans' perception of sports in a community. Especially socio-cultural variables become a pressure on women's participation in sports. This effect has always been felt either less or more due to social development.

FPT# 83 PERSONALITY CHARACTERISTIES OF THE MALE PLAYERS IN THE JUNIOR AND SENIOR HANDBALL NATIONAL TEAM

Z. Koruç, E. Çağlar, P. Bayar
H.Ü. Spor Bil. Tek. Y.O., Ankara Ü. Beden Eğ. Spor Y.O. ANKARA

Objectives:
The purpose of this study is to determine personality characteristics of the male players in the Junior and Senior National Team and to examine differences between handball players and sedentary people.
Method :
31 Male players (aged 19.42±0.96) from Junior National Team, 21 male players (aged 23.62±3.15) from Senior National Team and 38 male sedentary people (aged 22.82±1.31) participated in this study. MMPI (Minnesota Multiphasic Personality Inventory) was used to determine their personality characteristics. Descriptive statistics, One-way ANOVA, and Tukey test were used to analyse the data.

Results :

Findings showed that there was significant difference between sedentary people and handball players in the F ($F_{(2,87)}$=15.71), K ($F_{(2,87)}$=8.35), Hs ($F_{(2,87)}$=8.33), Hy (F ($_{2,87)}$=5.85), Mf (F $_{(2,87)}$= 5.19), Pd (F $_{(2,87)}$=7.14), Pt (F $_{(2,87)}$=13.19), and Sc (F $_{(2,87)}$=12.31) subtests. According to the results of Turkey test, it was not found significant difference between Junior and Senior National. Team but found significant difference between handball players and sedentary people.

Conclusion :

It can be concluded that personality characteristics of the elite handball players are different from that of sedentary people.

FPT# 84 A GREAT SOCİOLOGİST WHO İS UNKNOWN IN TURKEY : NORBERT ELIAS AND HIS CONTRIBUTION TO THE SOCIOLOGY OF SPORT

T. Amman
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N. Elias (1897-1990), one of the most important sociologist, offers a particular paradigm for sociological thought. His paradigm opposes not only the structural-functionalist and methodological-individualist tendencies, but also the Marxist, neo-Marxist critics, poststructuralist and postmodernist theorists in a very different way. Although Elias is one of the pioneer sociologists, he unknowned in Turkey, is interested in many topics such as health, sexuality, crime, shame, national and ethnic identity, femininity, globalization and sports. Elias in an authority on the history of emotions, identity, violence, the body, and state formation.

This paper purposes to present his sociological thoughts and his contributions to the sports sociology.

FPT# 85 A GENERAL ANALYSİS OF SOCIOLOGICAL THEORIES IN SPORTS

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Sociological theories are generalizations of a certain social phenomenon examined with a scientific method. Although these theories become mostly contrasted with each other, they make some explanations about some parts or all of the social-field but each one cannot delate the other's validity. The reason of this is related to the complex structure of society which is the object of sociology.

Sports sociology is one of the new developing disciplines of sociology since 1950's. The complex structure of today's society has also some reflections to sports. Although these theories are in a state of conflict and contradiction with each other, they all together contribute to the understanding of sports phenomenon and so sports sociology is getting productive by their helps. After scrutinizing the theories, it is understood that some of these occur by applying of some general sociological theories to sports. The rest of these theories are products of the researches directly trying to illuminate the topics of sports.

This paper purposes to recognize and to classify the theories of sports sociology and to evaluate them generally.

FPT# 86 BURSA İLİ ÇEVRESİNDEKİ AMATÖR FUTBOLCULARIN BESLENME BİLGİ DÜZEYLERİ VE ALIŞKANLIKLARI ÜZERİNE BİR ÇALIŞMA

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Amaç:

Bu çalışma, amatör futbolcuların beslenme bilgi düzeylerini belirlemek ve beslenme alışkanlıklarını ortaya koymak amacıyla yapılmıştır.

Yöntem:

Araştırmamıza Bursa çevresindeki amatör takımlarda ortalama beş yıldır futbol oynayan, yaşları 18-25 (x=22.5 ± 0.2) arasında değişen toplam 100 sporcu gönüllü olarak katılmıştır. Deneklere beslenme bilgi düzey ve alışkanlıkları ile ilgili 30 soruluk bir anket uygulanmış ve değerlendirilmiştir.

Bulgular:

Araştırmaya katılan sporcuların beslenme bilgi düzeyleri incelendiğinde %55.4 oranında yöneltilen sorulara doğru yanıt alırken, bilgi kaynağı olarak %56.4'ü antrenörleri, %44'ü kendi tecrübeleri ve eski sporculardan edindikleri izlenimleri göstermişlerdir.

Deneklerin beslenme alışkanlıkları incelendiğinde ise %72.3' nün günde 3 öğün % 15.4'nün ise 4 öğün %11.9'unun 5 öğün beslendikleri belirlenmiştir. Ayrıca deneklerin %46.8'i antrenmana ve maça çıkmadan 3 saat önce %26.7 sının 2, %26.1'inin ise 4 saat önce yemek yedikleri % 84.2' sinin vitamin kullandıkları belirlenmiştir.

Sonuç:

Araştırmamızdan elde edilen sonuçlar çalışma veriminin arttırılmasında önemli etken olan uygun beslenme alışkanlıklarının sporculara kazandırılmasında antrenör ve sporculara konu ile ilgili bilgi aktarımının gerekliliğini ortaya koymaktadır.

FPT# 87 HOW TO USE THE INTERNET RESOURCES IN ORTHOPADICS AND SPORTS MEDICINE

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Karşıyaka Devlet Hastanesi, Ortopedi ve Trovmatoloji Kliniği İZMİR,

Nowadays almost every scientist and orthopaedic surgeon who deals with sports medicine surely knows something about using the Internet and aware of exponential growth of this world wide opportunity, which recent estimates claim about 115 million users and two million Web sites!

In this paper the availibility of current Internet sources in Orthopaetic and Sports Medicine Surgery in Turkey and the World are discussed.

1. Online Organizations
2. Online Textbooks
3. Online Journals
4. Link Sites
5. Mailing Lists
6. Chat Rooms
7. Online Consulting
8. Case Presentations
9. Continuing medical education
10. Available data bases in Turkey

are the major headlines of the study.

While the Internet resources are widely used in the world, the

situation is rather different in my country because of the technical problems and the slowly-turning wheels of burcaucracy. The fiberoptic technology must replace the classical phone lines. This project will start in the middle of this year and unexpected disconnections and painfully low speed data transfers will be problems of the past.

In the future of Internet, online consultations, rapid x,ray transfers, all-electronic libraries and such are expected to be widely used in developing countries which have growing needs for access to medical literature. That means that multi-institutional and multicentric clinical studies will be facilitated over the Internet, placing information within everyone's reach.

FPT# 88 THE HEALTH SERVICE ORGANIZATION MODEL IN SOCCER STADIUM

M. Z. Taşyürek, M. Gürsoy
GSİM Sporcu Sağlık Merkezi

The soccer stadiums have a great risk ratio obscured by a charming atmosphere.

In our country with a viewer amount reaching the number of 50000 sometimes; including significant amount of fanatics with the flags, paper strips and inflammable materials in their hands; 22 players and three referees performing competitive activity in the middle; reporters, photographers and cameraman of media and etc.: It is a huge responsibility indeed!

In this study we tried to arrange a health service organisation model for the soccer stadiums in Türkiye. While making this we tried to combine the health service systems of some other countries which are advanced in soccer scientifically with our country's present conditions.

In our country the health service organisation of the soccer stadiums is a very important issue and it must be solved as soon as possible by the concerned federation and establishments.

POSTER EXHIBITION

27 April 1999

Poster Hall
P1 - P30

P # 1 SURGICAL TREATMENT OF ACHILLES TENDON RUPTURES

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Purpose of the study:
Achilles tendon ruptures are the most third common ones out of ruptures and are seen more frequently within middle-aged athletes. Rupture widely occurs during sport activity by dorsiflexing foot. If the Achilles tendon ruptures are not treated they cause good deal of loss of function. The treatment of the neglected ruptures has always been problem for a long time. Within our decleration we have reviewed the results of surgical treatment by using Lindholm method for the neglected cases under the light of literature.
Materials and Methods:
Between years 1994-1997, 16 patients had been operated for achilles tendon ruptures at the Istanbul Vakıf Gureba Hospital using Lindholm method and 12 patients who went through the final checking were taken into the survey. Patients were 11 males and 1 female, average age 41 (32-65), with 8 right and 4 left ruptures, the way of injury for 7 is by sport activity, for 3 is by failing, for 2 is by direct trauma, average time for surgery is 22 days (8-75). After surgery long-leg cast for 6 weeks, walking cast for 4 weeks and orthez is allowed plantar flexion and rehabilitation for 3 months are applied for the patient.
Results:
Average time for follow up is 29 months (17-41). The results have been evaluated as per Hooker criterions. 8 patients were very good, 4 of them were good, no bad result has been found. No complication such as re-rupture, infection, and nörologic deficite has been seen, only on the two patients superficial skin necrozis has been found but also are cured without any treatment in a short time.
Conclusions:
The purpose of the treatment of Achilles tendon ruptures is are ; to regain strength of the tendon, to repossess range of motion of the ankle and to make patients get back to their active life and sport. Nowadays the discussion of conservative or surgical treatment are leaving their place to the discussions of what kind of surgical method should be used and necessity of funcional rehabilitation instead of immobilitation. The shortness of the time period before surgery and effective rehabiltation are coming first in importance rather than the method of surgery to obtain good result out of treatment. Lindholm strenghtened the sutures by covering them with live facia and presented tendon from being stuck to under skin his method. We have come to a conclusion in our work that the Lindholm operation is a good method provided that the surgery is done by the rules in early stage and along with effective rehabilitation.

P # 2 THE V-Y GASTROPLASTY TECHNIQUE IN THE TREATMENT OF DELAYED TENDO ACHILLES RUPTURES

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S.S.K. Göztepe Eğitim Hastanesi I. Ort. va Trav. Kl. İSTANBUL

The Achilles tendon is susceptible to acute and chronic injury as a consequence of its structural and functional demands. The purpose of this study was to evaluate the effectiveness and the median term results of the surgical treatment using the V-Y gastroplasty technique.

We evaluated 8 patients with delayed Achilles tendon rupture. There were 7 males and 1 female. The mean age was 33 (27-49). All of the patients had positive Thompson's test. Three of them could actively plantarflex the affected foot.
We used the V-Y gastroplasty techique described by Abraham. An invented V shaped incision is made in the gastrocnemius aponeuroisis; the intermediate segment between the inverseted V legs is advanced distally and the gap in the tendon repaired according to the Bunnel suture tecnique using no5 nonabsorbable suture. The proximal incision in the aponeurosis is closed as a Y in the lenghtened position. A long leg cast with the foot in 20° plantar flexion ins made for 4 weeks, then a short leg walking cast with the foot in 10° of plantar flexion is applied for another 4 weeks.
All the patients were allowed to weight bear partially for two weeks and full weight bear as tolerated thereafter. The mean followup was 18 months (14-30). There were no infection. Two patients had minor complaints in the incision site. No patients reported rerupture or persistent pain. But all the patients reported that they did not return to thier preinjury level of function.
After this review, we concluled that surgial treatment using the V-Y gastroplasty is an effective method in the management of delayed Achilles tendon ruptures. But the long term results should be assessed and the functional results could be hoped to improve if more patient compliance is provided.

P # 3 BILATERAL RUPTURE OF THE QUADRICEPS MUSCLE: A CASE REPORT

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Partial rupture of the quadriceps muscle is most commonly observed in the middle aged or elderly and it could either be a result of direct trauma or secondary to diseases such as diabetes, hyperparathyroidisim and uremia. Rarely, in athletes, the rupture occurs with forces that cause a sudden contraction of the quariceps muscle while the knee is in flexural position.
We report a case of bilateral quadriceps muscle rupture in a 21 year old athlete which has occured during sprinting. Our patient had first ruptured his left quadriceps muscle 3 years ago and rupture of the right side had followed one years later. He had been given medical teatment only and was able to resume athletic activity within 3 months.
This case is found to be of special interest for two reasons: The first reason is the patient's age. Such injury is quite rare in young athletes. The other point of interest is that the rupture is bilateral. A discussion of possible aetiopathological mechanisms to explain this case is presented along with a review of literature on the outcome of various treatment options.

P # 4 ACUTE ANTRERO LATERAL COMPARTMENT SYNDROME IN THE LEG FOLLOWING STRENUOUS TRACKING ACTIVITY.

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Elmikrocerrahi Hast. 1418 Sok. No: 14 Kahramanlar IZMIR

We usually encounter acute compartment syndrome as a complication of major lower extremity trauma. Although chronic compartment syndrome is rare.
We reported an adult male patient who suffered from pain on his right leg and ankle. Patient admitted to our hospital at 3th day of

injury. Pain had appeared after strenuous tracking activity for four hours. Unfortunately diagnosis of compartment syndrome was late due to diagnostic confusion. First the patient had been diagnosed as an ankle sprain and a cast brace had been applied at the another hospital. But the symptoms increased following few hours in spite of the classical treatment. Pain did not disappear.
He wasn't able to dorsiflex his ankle. He had a hypoesthesia on his first ray. We performed fasciotomy for anterolateral compartments of his leg as soon as possible. According to operation findings, lateral
and anterior muscles were pale and noncontractile. After 6 months of operation, all anterior muscles function improved completely. But peroneal muscles didn't recover at the late period. We performed literature review and reported patient's end result.
Failure to recognize the onset of an acute exertional compartment syndrome may lead to serious comlications. Careful patient evaluaiton, and early fasciatomy must be done promptly.

P#5 PRELIMINARY RESULTS OF ACL RECONSTRUCTION WITH AUTOGENOUS PATELLAR TENDON

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Purpose of the study :
Preliminary results of ACL (anterior cruciate ligament) reconstruction with autogenous patellar tendon were presented.
Material & Method
A retrospective review was done to 24 consecutive patients who had chronic deficient anterior cruciate ligament underwent autogenous patellar tendon reconstruction between January - September 1998. All the patients had participated in high activity level or active sports. Indication for operation was that the patients had to have (+++) Lachman & pivot shift test with giving way. Surgically, ipsilateral autogenous middle third bone-patellar tendon - bone was used for reconstruction with single insicion. Grafts were fixed in bony tunnels with intreference screw or staple. 16 (%66) of the patients were soldier. Mean patient age was 22 years (19-26) and mean follow up period was 8 months (6-13). All of them were evaluated with Lysholm score.
Results:
Preoperative and postoperative Lysholm score were 54 (42 -59) and 81 (76-95) respectively. 21(%88)of them had (-) Lachmann & pivot shift test postoperatively.. The tests were (++) in 2 patients and in one. 10^0 to 30^0 flexion lag were experienced by 4 patients and 10^0 extension lag in one. Also reflex sympathic dystrophy was observed in one patient. 3 patients complained with anterior knee pain.
Conclusion:
Our preliminary results suggest that ACL reconstruction with autogenous patellar tendon graft is safe and effective technique with reasonable complication rate.

P#6 LATERAL PATELLAR RELEASE ARTHROSCOPIC AID UNDER LOCAL ANESTHESIA

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YYÜ Tıp Fak. VAN

Patellofemoral disorders are especially seen inthe young ages, and among the etilogical factors of anterior knee pain. All these pathologies are defined incorrectly as Chondromalasia Patella.
Fourteen patients with clinically and radiologically proven lateral patellar tilt were treated. Patellar subluxation with tilt according to Marshant graphy were the selection criteria. All patient underwent physical therapy to strengthen vostus medialis. Lateral patellar release was applied by arthroscopy aid to nine patient who did not yet benefit during last 6 months therapy. Physical therapy was continued after the removal of the sutures in these who experienced surgical intervention. Three of five patients who underwen only physical therapy was treated completey. Threree of five patients who underwen only physical therapy was treated completely. The complaints of one patient decreased enough not to continue the treatment. The other patient who still had the same complaints did not accept surgical treatment. The treatment result was excellent in seven of the nine patients who experienced surgery and good in the other two patients. No noticable complication was reported.
Lateral patellar release with arthroscopy aid under local anesthesia is regarded as a proper alternative procedure.

P#7 CASE REPORT: TUBEROSITAS TIBIA AVULSION FRACTURE IN TWO ADOLESCENT FOOTBALL PLAYERS

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Avulsion fractures of the tibial tuberosity are uncommon Salter-Harris type III injuries of the proximal physis. This injury is infrequent because few ligaments are directly attached to the proximal tibial epiphysis. Ogden suggested that this fracture is related with Osgood-Schlatter disease and classified it according to the intraarticular extension of the fracture and comminution of the tuberosity. In 90% of the cases the mechanism of injury is sports related and caused by a jump with a bad landing.
In this case report, two patients referred to SSK Göztepe educational Hospital I Orthopaedic Clinic between September 1996 and November 1997 were evaluated. They were 14 and 16 years old soccer players. Both injuries were caused by a fal after stepping 2 according to Ogden's classification and surgically fixed by ORIF using minimal osteosynthesis.
Postoperatively they were held in long leg splint for two weeks, then began passive ROM exercises. They began partial weight bearing as tolerated after the 6. week. Radiological consolidation of the fractures were achieved by 2.5 months. At 6 months, full range of motion and functional capacity were restored. They returned to play soccer 10 months after the initial injury.

P#8 MENİSKÜS YARALANMALARINDA (MAGNETIC RESONANCE IMAGING) MRI'IN PREOPERATİF TANISAL DAĞERİ

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Çalışmamızın amacı Magnetic Resonans Imaging (MRI) ın ameliyat öncesi dönemde menisküs yaralarının tanısal değerlendirilmesi ve cerrahi planmanın saptanmasındaki rolüdür.
1998 yılı içerisinde Artroskopik girişim uyguladığımız 153 hastanın Preoperatif döneminde MRI'ı mevcut 63 tanesi bu çalışmanın kapsamı içine alınmıştır.
MRI çekilmesi ile Artrokopi arasında geçen süre ortalama 46 gündür. Mevcut olguların 61 tanesinin Medial Menisküs 60 tanesinin lateral Menisküsü çalışma kapsamı içine alınmıştır.
Medial menisküs için sensitivite korpusta % 75, Arka boyunda % 91, Ön boyunda % 76, toplam % 83, Lateral Menisküs için Sensitivite,

kopusta % 92, Arka boyunda % 100, Ön boyunda %75 toplam % 86 olarak değerlendirilmiştir. Spesifite Medial Menisküs için, Korpusta % 90, Arka boyunda % 63, Ön boyunda % 93 toplam % 93, Loternal Menisküs için Kopusta % 92, Arka boyunda, Ön boyunda % 96, toplam % 93 olarak değerlendirilmiştir.
Mevcut sonuçlar Klinisyen ve Spesifik radyoloji ile birlikte MRI'ın menisküs lezyonlarının değerlendirilmesinde iyi bir kriter olduğunu göstermekle birlikte, pahalılığı ve yorum hatalarının fazlalığıda gözden uzak tutulmalıdır.

P # 9 CAVERNOUS HEMANGIOMA WHİCH BEHAVES LİKE PERONEAL TENOSYNOVİTİS CASE REPORT

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Akdeniz Ü. Tıp Fakül. Ort. ve Trav. A.B.D. ANTALYA

Hemangiomas are seen more frequently in children and young adults and they may localize to different tissues. Different histologic types are seen more frequently in certain anotomic locations. Large vascular type lesions are seen more in lower extremity.
Cases which don't regress spontaneously, complain about cosmatic, functional (related to local aggresive effect, muscle weakness, motion restriction) or chronic pain complaints.
21 year old male patient, applied with hypoesthesia, pain increased edema on lateral side of his right ankle difficulty in wearing shoes. At first, patient was treated as a peroneal tenosynovitis but patient complaints didn't regress. With diagnostic tests like USG, MRI, it was diagnosed as soft tissue tümör (hemangioma) which spreads till 5. Metatars and localize to peroneal muscle and excisional biopsi was applied. Histologic diagnosis was determined as cavernous hemangioma.
Although cavernous hemangiomas demostrates very different locations, in literature, cases related to tendons were limited (15 cases). Cavernous hemangiomas may mimic different clinical representation like bursitis, ganglion, tenosynovitis and similar diseas. In such situations, cavernous hemangioma should come into mind.

P # 10 INJURIES IN SPORT PARACHUTING

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Popularity of sport parachuting has been increasing notably both in the world and in Turkey in recent years. Although parachute jumping is considered as a hazardous activity, its risk of injury is rather low. In the present study, sportive jumps in Turkey between 1990 and 1996 were evaluated, and injury sites were investigated. Data was collected from the records of Turkish Aeronautical Association.
In the seven -year period, 162.460 jump were made in Turkey. There were 137 injuries requiring emergency and no fatalities. The injury rate was 0.08%. Lower extremity injuries covered 87% (117 cases) of the whole injuries. Ankle was the most injured site (69%, 85% cases) as expected. Fractures were 64% (77 cases) of the injuries while sprains were 40% (55 cases). Ankle leaded the fractured sites (29%, 40 cases).
Although the distribution of the injured sites were similar, injury rate was considerably lower than those of the other countries. The Main factors causing injury were 1. Torsion and dragging forces during landing, 2. Falling backwards, 3.opening shock and sudden slowing down at the development of the canopy. The majority of the injuries happened during landing. Assuming of a correct "prepare to land attitude" ant the execution of a good. parachute landing fall may prevent a great part of the injuries.
Parachuting is a performance sport. Jumping in proper weather conditions and drop zones, appropriate equipments, and finally, continuous theoretical, physical and mental training reduce the risk of injury in parachute jumps.

P # 11 EFFECTS OF SEX IN PROPRIOCEPTION

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This study was carried out at Hacettepe Univercity (H.U.) School of Physical Therapy and Rehabilitation for the purpose of determining the sensibility threshold of shoulder proprioception at different angular positions of dominant and nondominant shoulder joints and to study the differences they would show according to sex at 96 univercity students that they are 18 - 23 years old. All measurements were done on "a proprioception device" which was developed in the department appropriate to the shoulder biomechanic features and was adjusted according to the different arm length. It measured 180° range of motion. Results of statistical analysis showed a range from an average "best" of 0.83° to "worst" of 1.34° There were no significant differences between the sex according to the sensibility threshold of proprioception ($p>0.05$).

P # 12 HAEMATURIA AND PROTEAINURIA IN YOUNG BOXERS

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This study was done to determine whether haematuria and proteinuria that observed in adult athletes due to physical activity, occurred in the young boxers.
The urinary samples of 40 boxers (aged between 15 to 16 years) who joined the 1st European Stars Boxing Championship were taken before and after their first matches. Proteinuria was detected in the urine samples by a reagent strip. Then, samples were santrifugated at 3000 rpm for 2 min, To detect haematuria in the light microscope. While there were no haematuria or proteinuria in all boxers proceeding the match, significant proteinuria (18 of the boxers, 45%) and haematuria (in all boxers, 100%) were seen following the match. That incidence of haematuria for young athletes was considerably higher than that those reported for adult athletes in the previous studies.
Such haematuria might be due to both severe physical activity and/or trauma. It should be taken into consier that young boxers are more vulnerable and prone to kidney damage.

P # 13 POST- EXERCISE PROTEINURIA IN THE BOYS

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Purpose of the study:
Although excess protein excretion in urine following exercise has been recognised in healthy adults, there has not been much information about this point for children. The aim of this study is to investigate protein excretion in urine following exercise of children.

Material and methods:
We studied 17 volunteer boys aged 7 to 15 years old. The subjects were practised with swimming exercise in a pool for 30 minutes and following this exercise they were rested. This procedure was repeated three times. So the subjects were practised with swimming exercise in the pool for 90 minutes totally. Urine collection was made prior to and 30 minutes after completion of the total exercise. Total protein (TP) and $ß_2$-microglobuglin ($ß_2$ - m) levels which is low-molecular-weight protein were determined for each sample. We comparedpre and post exercise proteinuria with paired t test.
Result:
Resting and post-exercises values of total protein excretion rates were 20.05± 6.85 and 30.64±13.62 (mg/dl± SE) (p>0.05). ($ß_2$-m) excretion rates in resting and post-exercises period were 6.93±2.95 anad 42.09±14.39 (µg/L±SE) (p<0.05).
Conclusions:
These data demonstrate that increased level of urine $ß_2$ - m boys with exercises may be a measure for dysfunction of renal proximal tubules caused by exercises.

P # 14 DEPRESSION AND ANXIETY IN INJURED ATHLETES

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To investigate depression and anxiety levels in injured athletes, and to determine the effects of rehabilitation program on the psychological status of the athletes, 30 injured athletes (aged 16 to 38 years old) and 14 injured sedentary volunteers (aged 21 to 42 years old) completed Spilberges's Trait-State Anxiety and Beck Depression Inventories. The results showed that there are not significant differences between both groups, the levels of state anxiety and depression were decreased (p<0.05) in injured athletes but not in sedentary subjects. According to the results itcan be cocluded that the rehabilitation programs designed for injured athletes could not merely improve physical characteristics, but can also improve psychologial chacteristics of the athletes.

P # 15 THE EVALUATION OF NUTRITIONAL STATUS AND HEMATOLOGIC VALUES OF YOUNG FEMALE ATHLETES

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The aim of study was to make comparison between the elite female athletes with minimum one year regular exercise past and control group who have similar characteristics and have a sedentary life with respect to nutritional status and some blood parameters that could be an indicator of good nutrition.
All of the athletes and controls were asked to fill a questioning about their nutritional habits, smoking and alcohol habits. Elite athletes were also asked about regularity of their sports activities and nutritional status before and after the competition periods. The height, weight and skin fold thickness of all subjects were measured and blood samples were taken to evaluate valous blood parameters. 59 elite athletes and 37 control subjects were included in study. Using Yuhasz, Lenge and Thenk-tipton formulations, the averages of body fat ratios were determined significantly lower in athlete group. (P<0.001) No difference was found between the groups for alcohol habit. (P>0.05)
Both groups showed no difference for ferritin, iron binding capacity, saturation and total iron mean values. Mean hemologlobin was lower in athlete group. (P<0.01)
We conclude that young people need a good education for nutrition and athletes must be known ledgeable about good nutrition before and during the sports activities.

P # 16 THE EFFECTS OF WEARING HIGH HEELED SHOES ON THE ANGULAR VALUES IN THE LUMBOSACRAL REGION

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This study has been carried out to evaluate the differences of the angular values in the lumbosacral region while standing in a vertical position without wearing shoes and with wearing high heeled shoes. Lateral lumbosacral radiographies of thirteen healthy women wearing hign heeled shoes for more than one year were taken with out shoes (bare foot) and with high heeled shoes index of lordosis, angle of of lodosis total lumbal, angle, sacral, angle, sacral inclination angle and pelvic tilt were measured from these graphics. In addition to these, trunk and muscles of lower extremities were evaluated with manual test of muscle and shorthness tests.
In radiographic measurements, the values measured while wearing heeled shoes was less then the values measured with bare food. However, it has been understood that these values have no statistical importance.

P # 17 DISTANCE CHARACTERISTICS OF GAIT IN THE WEARERS OF HIGH HEELED SHOES

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In thisstudy, the effects of the heel height on distance characteristics of gait in 13 healthy women who had worn high heeled shoes for at least 1 year were evaluated.
Thirteen women walked with barefoot and their own high heeled shoes on a platform. Step length, stride length, stride width and foot angle were measured with the footprint analysis. The tests for the muscle shortening and strength in trunk and lower extremity were applied. The ranges of motions of the joints of the lower extremity were measured with a universal goniometer.
The women had shorter step length, stride length and stride width in high heeled gait than that in bare food gait but These were not statistically significant (p>0.05), however foot angle decreased significantly at high heeled gait (p<0.05). Harmstring muscle hortening was present in the 7 of 13 women. The range of motion of dorsi flexion of ankle decreased ($\bar{X}$±SH=13.08°±1.45°) and the range of motion of plantar flexion increased ($\bar{X}$±SH=63.15°± 2.78°) compared to normal joint motions.
These findings indicate that walking with high heeled shoes may result in change at the distance characteristics of gait, and compensatory changes may occur in the knee and ankle joints.

P # 18 DIFFERENCES BETWEEN EXTENSION AND FLEXION STRENGTH ON KNEES WHEN HIP IS ON THE NEUTRAL POSITION AND 90° FLEXION

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The purpose of this study was to indicate the relationship between the forces of flexion and extension of knees. That is why 20 amateur soccer players aged 18-20 involved in the study. The diffrences of the forces was shown by using Cybex 350 Extremity System dinamometer. Two positions were chosen for the tests. The first one was the sitting position in which the hip and knee had 90° angle. The second position was the supine position in which the hip had neutral position. The isokinetic extension and flexion tests of the soccer players were made before the season. There was a full day in between 2 different tests. In tests of harmstring and quadriceps were measured in 60, 180, and 300 °/ sec. According to statistical studies extension and flexion forces in 60, 180, and 300 °/ sec. in sitting position were greater than the supine position. At the same time, diffences in forces of flexion were greater than extension. All the results were evaluated by means of T-tests paired samples. ($p<0.005$)

P # 19 ISOKINETIC TORQUE PRODUCTION OF THE SHOULDER IN PROFESSIONAL ATHLETES

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The purpose of this study was to evaluate and compare the power production of the shoulder in a group of professional athletes in functional movement patterns with various speeds. For this reason professional male handball (n=20), basketball (n=20) and volleyball (n=20) players were included in this study. Each subject performed reciprocal contractions of both shoulder in the movement patterns of flexion/ abduction/ external rotation and extension/ adduction/ internal rotation at 60,90,120,180 degrees per second on a Cybex 6000 isokinetic dynamometer. Significant differences in mean torque production were found between the two movements for both arms. Mean torque production decreased significantly ($p<0.05$) as the contraction speed increased for both arms and movements. No significant differences were found between groups. Peak torque values in the pattern of extension/ adduction/ internal rotation were higher than flexion/ abduction/ external rotation. The ratios of flexion/ abduction/ external rotation to extension/ adduction/ internal rotation were significantly higher in the left arm. There is significant differences between dominant and nondominant arm ($p<0.05$). The results showing no significantly different isokinetic torque production in functional movement patterns between handball, basketball and volleyball players imply that they are trained with similar strengthening and endurance programs.

P # 20 THE EFFECT OF KNEE POSITION ON MUSCLE STRENGTH DURING PF/DF MOVEMENTS AT THE ANKLE

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The purpose of this study was to compare the effect of knee position on the muscle strength during the isokinetic movement of PF and DF at the ankle.
Mean peak torques values at 30°, 60°, 120° and 150° /sec were collected from 40 subjects, ages 15-26 from two test positions. The knee was stabilized in 90° of flexion for the first test position and 0° for the second.
At the both speeds, mean peak torque values of the PF/DF movements, was significantly lower in 90° of knee position ($p>0.05$). It was concluded that isokinetic testing at the ankle with knee in a close packed position near full extension, provides a more valid representation of isolated muscular performance than testing with the knee in a loose-packed position of midrange flexion.

P # 21 THE REHATIONSHIP BETWEEN Q-ANGLE AND PATELLOFERMORAL PAIN

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The purpose of this study was to investigate the relationship between Q-angle and patellofemoral pain in professional soccer players. We examined 32 subjects who were professional soccer players in a team of second division of Turkish Professional Leagues. Each subject was measured by the same person prior to the season for bilateral Q-angle of the knee which estimated as a narrow angle between 1) the line connecting the anterior superior iliac spine and the midpoint of the patella and 2) the line connecting the tibia tubercle with the same reference point on the patella. During measurements, we maximally paid attention that each subject had supine position and knees were fully extended but not hyperextended All patellofemoral pain cases were recorded during the season. Although three players had patellofemoral pain, only one of them missed a game due to patellofemoral pain and that subject had the biggest value (21°) of Q-angle of all subjects. Average of Q-angle of the knee for injured players was 19.33± 2.08 and it wa 10.09 ± 3.08 for right knee of all players and it was 10.16 ± 3.19 for their left knees. This study demonstrates a relationship between Q-angle of the knee and patellofemoral pain in soccer players.

P # 22 COMPARISON OF SERUM IRON, FERRITIN, TOTAL IRON-BINDING CAPACITY, TRANSFERRIN, TRANSFERRIN SATURATION LEVELS IN SPORTSMEN AND SEDENTARY INDIVIDUALS

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Purpose of the study:
Previous studies suggest that iron depletion may impair physical performance because of iron's essential role in oxygen transport. The aim of this study is to compare serum iron, ferritin total iron-binding capacity (TIBC), transferrin, transferrin saturation (TS) values of sportsmen and sedentary people
Purpose of tne study:
Previous studies suggest that iron depletion may impair physical

performance because of iron's essential role in oxygen transport. The aim of this study is to compare serum iron, ferritin total iron-binding capacity (TIBC), transferrin, transferrin saturation (TS) values of sportsmen and sedentary people.
Material and methods:
The study was performed on 24 sportsmen (12 women, 12 men) aged 18 to 23 years and 24 sedentary subjects in the same range of age were chosen from Pamukkale University sport teams. Blood samples of the two groups were taken and serum iron, ferritin, levels were calculated from these values.
Results:
Serum ferritin levels of female sportsmen were signifcantly lower than those of sedentary women ($p<0.05$), and TIBC were significantly higher ($p<0.05$). Serum iron and TS values of male sportsmen were significantly lower than those of sedentary men ($p<0.01$, $p<0.01$). Serum iron, ferritin and TS values of male and female subjects who are attending regularly sporting activities were significantly lower than those of male and female sedentary people ($p<0.05$, $p<0.05$, $p<0.05$).
Conclusions:
These results show that exercise is closely associated with the increased risk of iron deficiency state.

P# 23 AVULSION FRACTURE OF THE SPINA ILIACA ANTERIOR INFERIOR

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While overuse and competitive sports avulsion fractures are very frequent coincided at adolescents. According to avulsion fractures of the Spina iliaca anterior superior, fractures of Spina iliaca anterior inferior are very rare. The characteristic of these regional fractures is pain which abruptly develops right after trauma at the inguinal zone. As a result of compulsion by excess flexion and abduction while kicking the ball with the right hip, conservative therapy was applied to an amateur football player boy about 15 years of age whom had been diagnosed with an avulsion fracture at the Spina iliaca anterior inferior, had turned back to active sport within 12 weeks of treatment. After a careful and fastidious rehabilitation program it has been noticed that all functions had turned to normal within 4-6 weeks.
Particularly, the avulsion fractures of the Spina iliaca anterior inferior forms after an abrupt contraction of the rectus femoris while sportive activities such as football are in action. This case is rarely encountered so the formation mechanism of fracture, the choices of treatment and specifies of the rehabilitation program were reviewed and discussed.

P # 24 AN EPIDEMIOLOGICAL SURVEY ON ANKLE SPRAIN IN ATHLETES

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Ankle sprain is common sports injury and is often regarded as trivial by athletes and coaches and is the most common acute injuries treated in physiotherapy departments.
Purse of the study:
This epidemiological study was conducted among three categories of Turkish athletes: national teams, competitive athletes, and recreational athletes.
Material and Methods:
156 subjects ranging in age from 18 to 39 years participated in this study. Subjects were patients who treated with ankle sprains in Sports Medicine unit, School of Physiotherapy and Rehabilitation, Hacettepe University, Ankara-Turkey as retrospective between 1991 and 1996 years.
Results:
This study shows that as much as 67% of all athletes had recurrent ankle sprain, and 47% of these athletes had significant disability and residual symptoms which led to impairment of their athletic performance. According to grades of ankle sprains, physiotherapy and rehabilitation program in four phases applied all athletes. Treatment program included RICE, electrotherapy modalities, exercises (isometrics, strengthening, stretching, progressive resistive exercises (PRE), proprioceptive training, training for sportive activities-walking, running,jumping.
Conclusion:
This study indicates that a proper approach toward injury prevention and a comprehensive rehabilitation program are required.

P # 25 PRIMARY AND SECONDARY PROPHYLAXIS OF SOCIALLY SIGNIFICANT DISEASES

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University of Economics, National Sports Academy, University of Rousse BULGARIA

One of the major tasks of the national programme for combating the socially significant diseases in Bulgaria is securing high vitlity and improving the nation's healthful way of life by applying a large-scale health and remedial physical culture. The active involvement in the organisation and treatment of a team of outstanding research associates in the field of medicine, pedagogy, sociology, psychology and of collaborators in the health and educational system activities contribute to the successful solution to the problem dealt with. By modern methods of organization, investigation and assessment of tne state health using indices of tne cardio-vascular, physical overtaking and techniques of prophylaxis and treatment of students'psychic-physical-physiological state. The problem of primary and secondary prophylaxis of the socially significant diseases of students has been dealt with completely both from a theoretical and from point of view of applying the means and methods of medicine as well as those of physical culture for healing, prophylaxis, recuperating and rehabilitation.

P # 26 MINIMALLY INVASIVE SURGERY FOR TREATMENT OF TIBIAL PLATEAU FRACTURES. PROPOSING NEW DEVICES FOR INDIRECT REDUCTION.

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To evaluate the effect of milimally invasive surgery (MIS) in treatment of tibial plateau fractures the results in 44 patients were studied prospectively. Twenty one patients were terated by MIS and 23 by ORIF, The average age of patientswaz 46.2 years and average follow up was 4.5 years. The fractures were classified accoding to Schatzker. The MIS techniques included closed reduction under X-ray control for pure depression fractures (III type), and percutaneous fixation by canullated screws or K-wires. The own construction devices were used for indirect reduction. The ORIF was performed in usual manner with buttres plates and lag screws. The results were assessed using the 100-point Knee Rating Sheet of Hospital for Special Surgery (HSS) and processed statistically by the software package "BMDP". All MIS operated patients had excellent and good functional results of mean 89.3 comparing to an mean 82.8 for the

ORIF treated ones ($p<0.05^*$). There were no loss of reduction or malunion in both groups. The rate of wound infection was 0% in MIS and 7.4% in ORIF cases. The authors consider Mis as safer and effective method for I, III and IV types, while ORIF is advocated for remain fracture types.

P # 27 SURGICAL TREATMENT OF ANKLE FRACTURES IN ATLETES

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Purpose:
To evaluate the results of surgical treatment of sport ankle fractures.
Materials and Methods:
Sixteen acute ankle fractures due to sport activities in 12 males and 4 females at an average age of 21.5 years were treated with immediate open reduction and internal fixation between 1989-1997. There were 8 socker players, 2 tennis players and 1 of each of runners, jumpers, skiers and paraplane fyers. According to Dannis - Weber scheme the fractures were classified as 1 Type A, 9 Type B and 6 Type C. Perfect reduction and stable fixation was achieved in all cases. Immediate PCM was conducted in 12 cases, followed by active exercise programme. Because of prolonged swelling and delay of functional recovery in some of patients, later postoperative management has been changed to splinting for first 7-10 days, followed by PCM.
Results:
The results were evaluated according Modified Weber's Ankle Protocol. The average follow up was 2 years. Eleven exellent, 4 good and 1 satisfactory results were recorded. Eleven patients restored preinjury sport level, in 4 it was slightly reduced and one patient seased sport activity.
Conclusions:
Early operation, perfect reduction, stable fixation and active rehabilitation are essential for successful treatment of sport ankle fractures. Immediate postoperative PCM of operated ankle leads to prolonged swelling and pain. The authors recommend splinting for first week, followed by PCM and active exercises.

P# 28 MUSCULAR FORCE RECOVERY AFTER SURGICAL TREATMENT OF ANKLE FRACTURE

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Purpose:
The functional treatment of ankle fractures with steady metal osteosynthesis provides possibilities for early kinesitherapy. The **purpose** of the present study is to explore the efficiency of two different methods for muscle force recovery of subjects with ankle fractures.
Material And Methods:
Thirty subjects with ankle fractures, who has underwent surgical treatment at the Second Traumatology Clinic of the National Institute of Emergency Medecine "N. Pirogov" from 1990 to 1995, were studied. The steady metal osteosynthesis was followed by functional treatment, including early mobilization of ankle joint and late gravity loading (after the 45th day), in all cases. According to the used kinesitherapy methods the subjects were divided in to two groups. The kinesitherapy, traditionally used in the clinic and modified for the purpose of this study, was different parts of the m. triceps surae, based on the first one, was used in the experimental group (14 subjects).
Results:
The method of Olerud C. and H. Molander, (1984) for evaluation of the results, was used, including six criteria: stiffness of the ankle joint; swelling; muscle strenght; walking ability; interference with work and sports activities. A statistically significant improvement of static and dynamic force capacity of studied muscle was established especially in the kinesitherapy, traditionally used in the clinic - excellent in 43.7%, good in 43.7%, acceptable in 12.5% - compared to those in experimental group - excellent in 57.1%, good in 35.7%, acceptable in 7.1%.
Conclusions:
The comperative analysis of two groups showed the difeerentiatedmethod to be more efficient for the m. triceps surae recovery. The recovery of muscular force has a marked beneficial effect on the general functional recovery of subjects.

P # 29 CHRONIC SACROALGIA PROVOKED BY ORGAN PATHOLOGY

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Contemporary neurophysiology attributes many clinical discomforts to the two reciprocal reflexes: the viscevertebral reflex and the vertebrovisceral reflex.
The sacral area is included in two kinematic chains-the one being the longitudinal which builds the lumbal part of the vertebral column on the sacrum and the other being horizontal and is represented by the pelvic ring in which both coxofemoral joints are included.
The reason for lowback pains or the so called sacralgias could be troubles in the sacroiliac joints themselves; sacroiliitis, distorsion, block (but mainly they are secondary determined and perform) fulfil a protective function, are of a reflex origin compensatory character as a result of blocked or lack of movement in some other part of the chain.
This presentation aims at summerizing personnal experience as a result of long pratic in the field of manual therapy as well as at presenting therapeutical models applied to different cases.

P# 30 MEDİCAL GYMNASTICS ON CHILDREN WITH ESSENTIAL HYPERTENSION

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The purpose of our investigation was to study the effect of physical exercises on children with essential hypertension. We had it as a task to follow up the dynamics of some haemodynamics, electrocardiographic indices and subjective sate.
Physical activities were carried out for a period of two years of six months each, five times a week. The physical programme comprised procedures of medical gymnastics two times a week and bicycle ergometric loadings three times a week.
The investigation was carried out with 20 children average age 14 years suffering from essetial hypertension. We followed up the dynamics of the haemodynamic indices at rest and under physical loading. A significant decrease of heart rate, pulse pressure, systolic pressure was established. Electrocardiographic changes supply evidence for an improvement in cardiac activity. A decrease in subjective symptomatics was noticed.

POSTER EXHIBITION

28 April 1999

Poster Hall

P31 - P60

P# 31 SOME INEDITED CARDIOVASCULAR ASPECTS IN ELITE ATHLETES

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In sports medicine practice it is possible to meet some unexpected cardiovascular aspects: Clinical ECG, echocardiographic.
Some of them are congenital; the others can appear in conditions of inadequate medication, while some unexpected cardiovascular aspects can be the signs of the overtraining. Also, the athletes can present, accidental, some acquired, rare cardiovascular diseases.
In cardiological department from the romanian national institute of sports medicine we met the following inedited cardiovascular aspects:
- Prolonged QT syndrome romano-ward (familial).
- Acute arrhytmias as paroxysmal atrial tachycardia, paroxysmal atrial fibrillation, idioventricular rhythm, in conditions of an inadequate therapy.
- False ECG aspect of acute non Q myocardial infarction in overtraining state.
- Right ventricular dysfunction (on ECG and echocardiography) with limited exercise capacity.
- Hydated cyst in left ventricular wall.
A disputable problem is the significance of the "u" waves on ECG in top athletes.
The athletes who presented these rare ECG and/or echocardiographic aspects could continue the sports activity after medical treatment and under sports medical supervision.

P# 32 FEMALE ATHLETES AND BONE MINERALY DENSITY

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Weight-bearing activities, particularly those that involve impact loading, such as gymnastics, basketball, volleyball, and similar endeavours, yield more favorable skeletal effects. Extremely intense physical activity can be accompanied by amenorrhea in young women. Although there are exceptions, this condition is usually associated with reduced bone mass have been carried out in high performance professional sport players.
The purpose of this cross-sectional study was to investigate the bone mass status in female athletes in comparison to non-athletic controls. These athletes were amateur sports players who started sports-specific traninig in childhood, and they were compared to weight, height and body mass index matched controls recruited from university students not engaged in regular sport activity. Quantitative ultrasound of the calcaneous were performed for estimating bone mineral density, speed of sound, broadband ultrasound attenuation and quantitative ultrasound index. Nutritional assessments were performed using a questionnaire and menstrual status had been reported by the subjects. Differences between the groups were estimated using unpaired t-tests and correlation relationships between the variables were tested using correlation coefficients.

P# 33 BONE MINERAL DENSITY AND ITS CHANGE IN SWIMMERS, FOOTBALL PLAYERS AND CONTROLS

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Osteoporosis is a major health care problem in the world today. Low bone mineral density (BMD) is an important risk factor for osteoporosis and related fractures. It has been demonstrated that peak skeletal mass is a determinant of osteoporosis. Physical activities, especially weight-bearing exercises are important for bone accumulation during the pubertal growth spurt. The purpose of the present study was to investigate the influence of puberty, different types of physical activity, anthropometric data on bone mineral density. Three different groups were investigated. The groups consisted of swimmers, football players and controls. The three different groups were matched for pubertal stage, age and height. BMD of the calcaneus were measured using ultrasound bone densitometry (Sahara Clinical Bone Sonometer). We measured speed of sound (SOS), broadband ultrasound attenuation (BUA),and quantitative ultrasound index (QUI) with the same equipment.
Physical exercise level had been reported by the subjects. The subjects were divided into different pubertal stage according to Tanner by the same physician (B.D). Weight, height, and arm length was measured using standardized equipment. Differences between the three groups were estimated using analysis of variance (ANOVA). Differences in BMD was also tested using analysis of covariance (ANCOVA).

P# 34 EFFECT OF THERAPEUTIC EXERCISE ON GALL BLADDER KINETICS OF PATIENTS WITH CHOLELITHIASIS

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Physiotherapy and particularly exercise therapy has proved to be efficient in the treatment and rehabilitation of many kinds of diseases. The significance of physiotherapy in cases of hepatic-biliary pathology and especially of choletihiasis increases with the increasing social consequences of this disease.
The present research aims at specifying the cholecystokynetic effect of a therapeutic exercise session (TES) on 20 patients with cholelithiasis. After an overnight fast the volume alteration of the gall bladder before and following a TES was recorded by ultrasound method.
TES consisted of exercises (incolving muscles of the trunk and extremities in supine, prone, side, sitting and standing position, and abdominal-diaphragmal breathing) having a mild massage and reflex impact on the organs in the abdomen area, respectively on the liver and gall bladder. Stimulation of blood and lymph circulation in the biliary system, and gall bladder kinetics was expected and as a result-an augmentation of the gall bladder excretion.
Results show reduction of gall bladder 5% to 45% after TES in all patients observed and prove reasons suitable therapetic exercises to be recommended as a preventive, curative and rehabilitative means for patients with cholelithiasis.

P# 35 PSYCHOLOGICAL AND PHYSICAL METHODS OF CARDIOVASCULAR DISEASES

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With a view to establish the effectivity degree of every part of the given Rehabilitation Program three groups of students with cardiovascular diseases were observed for a year. Each group included 26 subjects, similarly distributed as to age and sex. All the three groups were treated by various therapy methods during a year: the 1 st group-authogenic training without kynesitherapeutical program; the 2nd group - therapeutical physical training with elements of sporting games; the 3rd group - invertal veloergometric or treadmill training.

There was also a 4 th (control) groups of students with cardiovascular disorders which were not treated at all.

All students, both at the start and at the end of intervention underwent psychological, clinical, ergometric and kynesiological examinations. A number of physiological parameters were observed during the very procedures (telemetric control, ECG, arterial pressure).

Advantages and shortcomings of the independently applied therapies were discussed.

P# 36 PARTICULARITIES OF MORBIDITY AND TRAUMA EVOLUTIONS

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Sports medicine is a complex speciality, that comprises aspects of general medicine and specific sport problems.

The purpose of the study is the presenting the sport medical assistance over one year paying special attention on the morbity evolution in Brasov county (Romania) in 1998.

Material and methods: the type of study is retrospective, including all our medical assistance over 1998, classified over month activity, age groups, sport groups. The study comprises all the cases of our Sport Policlinic from Brasov in 1998. There were 11250 medical assistance from whic trauma cases 1090(9,68%), medical pathology 1310 (11,64%), the rest 8850 being regular check ups (78,66%).

Age distribution was as following: regular check-ups < 16 years 3011 sportmen and women, > 16 years 5839; medical pathology < 16 years 260,> 16 years 1050; trauma<16 years 260, > 16 years 830.

Month distribution was as follows: january 917, february 917, february 1069, march 1125, april 1589, may 1530, june 854, july 782, august 44, september 1221, october 1012, november 783, december 324. Medical and trauma pathology is further analyzed on sport groups.

Conclusion:

our study underlines the variety of medical assistance in a sport medicine center, revealing the complexity of the knowledge that a sport medecine doctor has to possess for a proper diagnoses and treatment.

P# 37 EXERCISE THERAPY IN SECONDARY PROPHYLAXIS AGAINST SCOLIOSIS IN A FAVOURABLE ENVIRONMENT

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To attain spinal correction during secondary prophylaxis against scoliosis II-III degree, it is necessary to consider the rigid structures and the presence of osteodystrofic changes.

The corrective exercises in scoliosis may prove effective provided due consideration is given to:

- Stalilization of the respective spinal segment by fusion of the convex articular surfaces one to another in the horizontal plane, with displacement of the concave surfaces rather than the convex ones. The corrective force of the exercise should act tangentially on the vertebral surface in extension of the verterae involved in the scoliotic curve. To set the convex articular surfaces of the vertebrae in a single level, rotation to the concavity of the scoliosis is required, which rotation is effected from the top downwards, and is maintained at scoliotic apex level.
- Securing tissue flexibility on the concave aspect of the curvature by exerting effect on the oblique pectoral muscles from a flexion position of the trank in combination with spinal rotation. - Strengthening of the lower limb muscles (to secure better balance in the frontal plane) and of the hip ad and abductors (owing to their role as sagittal stabilizers of the feet).
- Selective strengthening of the short oblique dorsal muscles (without strengthening of the long dorsal muscles) by extension and rotation of the dorsal segment on the concave side.

During secondary prophylaxis agains scoliosis using physical exercises, abdominal musculature strengthening is likewise needed, as well as refinement of the automation of the basic spinal structures and all body segments.

P# 38 REHABILITATION OF KNEE AFTER INJURIES, USING A THEORETIC MODEL, BY ECCENTRING CONTRACTION

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Purpose of study:

In this work we try to purpose a theoretic model, using the values of mechanic work, of angle of flexion and extension, and how we can obtain good results in rehabilitation of knee to eleven players of volleyball, that have injuries of knee.

Material and methods :

We had studied 11 players that have injuries of knee like contusions, injuries of knee ligaments or surgical intervention To all we had determined the values of mechanic work, for flexors muscles and extensions muscles of knee, using the theoretic values for normal flexion 135° and extension 175°, that are 45,725 and 142,976 that had been determined by R.FICK? In the same moment we had measured muscles tonus for extensors (quadriceps muscle).

Because the knee is a lever of third degree a part of muscles forces are transmit to the shank, so we can estimate the mechanic work of the shank, and if we know this values (theoretic) after that we can know how is the weight that can be use on the posterior or anterior face of shank, like resistant, because we want to make eccentric contraction for reinforce the muscles and for increase the mobility of knee. We had use the goniometric values, scale Pol Le Coeur for

force and myotonometric values.
Results:
The values of flexion angles (initial) were 25°-90°; extension 0°-135°. After our exercise they growwith 25% for a white between 7 days to 35 days. The values of tonus are growing with 0.5% at 80% patients from 80-125 to 80.4-125.62 Uz. The weight that we had used for make resistant are contents from 0.386 kg to 0.686 kg for flexors and for extensors from 1.83 kg to 23 kg. But we used for the beginning half from these values and we had obtained good results. The muscle forces are between 2-5.
Conclusions:
We had observed a decrease of rehabilitation period from two months to a short period like 7 days to 35 days. Also we think that if we make these theoretic estimations before we shall begin the rehabilitation program, we can obtain good results becauce we know where is our patient, and so we can make a good program or exercise with resistant using weights that are suitables.

P# 39 THE EFFICIENCY OF THE TREATMENT WITH ACUPUNCTURE AND LASER IN SPORTS TRAUMATOLOGY

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Between 1997, november and 1998, october for various traumatic injuries of the soft tissues, during trainings and/or competitions, a number of 36 athletes: 29 men (80.55%) and 7 women (19.45%) came to the laboratory of traumatology and rehabilitation.
The most frequent diseases were:
- tendinitis = 21 cases = 58.33%
- mioentesitis = 8 cases = 22.22%
- miotendinitis = 3 cases = 8.33%
- tenosinovitis = 3 cases = 8.33%
- entesitis = 1 cases = 2.77%

The most frequent cases took place at: athletic 11 cases (30.55%), football 10 cases (27.77%), power lifting and lawn tennis 3 cases (8.33%) and gimnastics 1, baschetball 1, box 1, handball 1, skating 1, shooting 1, water polo 1, voleyball 1, skying 1 cases.
The months of the year with the most frequent traumatology diseases were 1997, nowember and december and 1998, march and june.
Against pain treatment was composed by drugs (antiinflamatory and muscle relaxant), physiotherapy (laser, acupuncture), kinetoterapy (izometric and izotonic exercises). Treatment was maximum 16 days (1 case) and improvement began from the second day 17 cases (47.22%) and the complete healing began from the fifth day 8 cases (22.22%) and at the most dificile cases at the twelveth days 2 cases.
We remark the benefitial effect of the association of the laser and acupuncture, this combination decreased the time of rehabilitation from 8 days to 5 days in the most of the cases comparing with the classic treatment.
We used athermic laser Cosmogamma IR 95 with emission in the field IR, 2-4 J/cm^2 in function of the treatment area.

P# 40 MORPHOFUNCTIONAL STATE OF THE HEART OF ATHLETES WITH EXTRASYSTOLIA

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The purpose of this search was to reveal morphofunctional peculiarities of the heart in trained athletes with extrasystolic arrhythmias.
18 male and 16 female well-trained athletes of mean age 17.6±0.5 were studied. In all of them we observed extrasystolic arrhythmias of different grades without evidence of any underlying cardiac diseases.
Routine ECG, ECG-monitoring, Echo- CG, electrostimulation of the heart through the gullet, PWC-170 and orthostatic tests were used as investigation methods.
All the morphologic indexes were at normal level even in athletes who suffered of extrasystolia for 5 years or more.
Some alterations of indexes reflecting the functional state of the heart were revealed using ECG and electrostimulation of the heart mainly in athletes with more than 5 years history of extrasystolia.

P# 41 RED BLOOD CELL PARAMETERS IN HIGHLY TRAINED PUBESCENT ATHLETES

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A suboptimal hematological status has been often recorded in athletes involved in intensive physical activity (1). Even a "sports anemia" is reported to occur with intensive physical exercise (2). But there are few studies on the influence of different types of exercise, practiced for a long period of time, on the red blood cells parameters in pubescent athletes (3). The aim of this study was to assess the basic red blood cells parameters in highly trained pubescent athletes ofdifferent sports and to compare the results obtained with those of control, non-trained group. An assessment of sex variation of the values of these parameters also has been performed.
Subjects:
876 highly trained athletes (559 boys and 317 girls) were investigated. The mean age, weight, sports practice, and sexual maturity index (by Celler) were (X±SEM): 14.01±0.06 years, 56.24±0.52 kg, 3.52±0.07 years, and 16.03±0.20 respectively. The control group consisted of 357 non-trained subjects (171 boys and 186 girs). Their mean age, weight, and sexual maturity index were: 14.58±0.09 years, 57.75±0.67 kg, and 16.11±0.24 respectively. The group of athletes has been divided in 7 subgroups in accordance with the practiced sport: athletics (105), swimming (107), rowing (230), wrestling (225), weight lifting (47), games (92), and others (67).
Red blood cell parameters:
Venous blood samples were drawn from the cubital vein and the red blood cell count (RBC), hematocrit (Hct), hemoglobin (HB), and mean corpuscular volume (MCV) were measured.
Statistics:
Statistical indices were computed for each group and for all parameter, and ANOVA-factorial analysis was carried out to value the significance of found differences.
Results:
The highly trained group manifested lower (P<0.001) RBC, Hct, and

HB values in comparison with the control, non-trained group (4.61+/-0.01*10^{12}/1 vs. 4.75+/-0.02*10^{12}/1, 133.01±0.38g/1 vs. 139.97±0.62 g/1, and 0.389±0.001 1/1vs. 0.404±0.002 1/1 respectively). Lower values of these parameters were found in the boys and girls of the trained group in comparison with the boys and girls of the control group (P<0.001). Lowest RBC, Hct, and HB were measured in the blood samples obtained from the boys of the swimming subgroup - 4.54±0.06*10^{12}/1, 129.38±1.80 g/1, and 0.386±0.0061/1 respectively, and in the rowing subgroup - 4.66±0.03*10^{12}/1, 136.21±0.94, and 0.400±0.0031/1 respectively. The same distribution of these parameters were found out in the girl's subgroups -lowest in rowing (4.32±0.04*10^{12}/1, 124.27±0.93 g/1, and 0.314±0.003 1/1), and in swimming subgroup (4.40±0.05*10^{12}/1, 125.90±1.30 g/1, and 0.375±0.005 1/1). No differences werefound out in the MCV measurements.

Conclusions:

The evidence of this study suggests that the long-lasting (more than 1 year) high-intensive (twice a day/5 days a week) sports training causes decreased values of the basic red blood cells parameters in pubescent boys and girls, which finding is extremely distinguished in the submaximal sports. References: 1. Biancotti, PP, A Caropreso, et al. J Sports Med Phys Fitness, 1992, 32(2): 70-5. 2. Radomski MW, BH Sabiston, P Isoard. Aviat Space Environ Med, 1980, 51(1): 41-5. 3. Schobersberger W, M Tschann, W Hasibeder,et al. Eur J Appl Physiol, 1990, 60(3):163-8.

P# 42 SERUM IMMUNOGLOBULIN PROFILE IN PUBESCENT ATHLETES

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It has became clear that the immune system responds to the increased physical activity and may be given some of the credit for exercise-related reduction in illness. In contrast, it has repeatedly been shown that intense exercise causes immunosuppression (1,2). It is belived that immunodepression may occur if athletes do not allow the immune system to recover after exhaustive exercise training, but initiate a new exercise while still immunodepressed. In contrast to the large number of studies on the immune response to acute exercise, much less is known concerning the effect of long-termphysical training on immune function (3,4). The aim of this study was to assess the immune status by measuring the serum IgA, IgG, and IgM concentrations of young healty athletes practicing different sports, and to compare the results obtained with a control, non-training group.

Subjects:

Blood samples have been taken from 582 highly trained sportsmen (age: 14.01+/-0.06 years; weight: 56.35+/-0.49 kg; height: 164.9+/-0.52 cm; sports practice: 3.44+/-0.06 years), which were practicing six groups of sports - athletics (n=66), swimming (n=70), rowing (n=143), wrestling (n=149), weight lifting (n=40), and sports games (n=90). They all trained 5 days a week, 90 min twice a day. The control group consists of 61 nontrained subjects (age: 14.32+/-0.09 years).

Methods:

Venous blood samples were drawn from the cubital vein and the IgA, IgG, and IgM concentrations (g/1) were determined by the method of immune precipitation on polyethylene glycol (PEG) at 340 nm by using analyzer Optima (Kone, Finland).

Statistics:

Statistical indices were computed for each group and subgroup and for all parameter, and ANOVA-factorial analysis was carried out to value the significance of found differences. The data are presented as X+/-SEM.

Results:

It was found out that the serum IgA concentrations were higher in the group of sportsmen, than in the control group (1.96+/-0.03 vs. 1.39+/-0.10 g/1, P<0.01). The serum IgG levels were found higher in the blood samples obtained from the trained group (12.37+/-0.16 vs. 11.06+/-0.44 g/1, P<0.01). The mean values of all subgroups of sportsmen were found to be in the normal ranges. The highest concentrations of IgA were found in subjects practicing athletics, and the lowest - in swimmers (P<0.001). The highest concentrations of IgM also were found in athletes, and the lowest - in weight lifters. The highest serum concentrations of IgG were measured in sportsmen from sports games subgroup, and the lowest - in wrestlers.

Conclusions:

The data obtained confirmed the direct link between the type of sport and the duration of the sports practice, on one hand, and the serum immunoglobulin pattern, on the other.

Preferences: 1. Pedersen BK, T Rohde, M Zaho. J Sports Med Phys Fitness, 1996, 36(4): 236-45.2. Mackinnon LT. Int J Sports Med, 1997, 18 Suppl 1: 62-8.3. Eliakim A, B Wolah, E Kodesh, et al. Int J Sports Med, 1997, 18(3): 208-12. 4. Gleeson M, W A Mc Donald, AW Cripps, et al. Clin Exp Immunol, 1995, 102(1): 210-6.

P# 43 THE INFLUENCE OF PHYSICAL ACTIVITY AND FACTORS OF THE NATURE IN MOUNTAIN ON STUDENTS WITH SLIGHT HYPERTONIA AND OBESE STUDENTS AFTER TERM EXAMINATIONS

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In 1996 in Semcovo resort (1710m.) in Rila there was made aresearch of 24 students with slight aberriance in health conditions. It was made during a studying course in mountain sports and determined pressure.

The hypodynamia and becoming fatter are socially essential deseases that determines the permenant interest in their treatment. We are investigating the influence of walking through slightly rough mountain terrain, ski teaching, combined with the climate and meteorological conditions. The means and methods are essencially considered and aimed towards the moving activity and limited towards the diet. There are conclusions and advises made according to the results.

P# 44 THE INFLUENCE OF PHYSICAL ACTIVITY IN MOUNTAIN AND THE CHANGE OF HYPODINAMIC INDICATORS/ AT REST/ DURING GETTING OVER DIFFERENT ALTITUDES

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In 1996 in Pirin mountain near the peak Vihren (2915 m.) there was made research of 34 students during 7-day sport-studying course of mountain-climbing. The measurements of the hypodynamics were studied several times at different hights. The measurements included: arterial pulse, the maximum and the minimum of the arterial pressure, pulse difference, percussive and minute volume of

the heart. Mathematics and statistic methods were used during the information proceeding. Based on the analysis of many days marches in mountain.

P# 45 BODY COMPOSITION AND WORK CAPACITY OF BULGARIAN CHILDREN

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The evaluation of aerobic fitness is a significant factor in the determination of children's health. The generally accepted physiological criterion of aerobic fitness is maximal oxygen uptake.
The aim of the present study was to investigate the physical working capacity of Bulgarian children as major component of their fitness and to elucidate the influence of the growth and body size on it. A group of 170 boys and 155 girls aged between 11 and 16 years was tested. After anthropometric measurements were estimated percent body fat and lean body mass by skinfold equation. The heart rate responses to progressive submaximal intensities, performed on a cycle ergometer (Eurofit for children, Council of Europe Publ. 1995), have been employed in predicting physical working capacity and maximal aerobic power.
The results of our investigation showed that submaximal working capacity (PWC_{170}), maximal working rate (Wmax) and maximal oxygen uptake ($VO_{2\ max}$) of the tested boys increased with growth in absolute terms, but not per kg body weight. The changes of these parameters in girls, aged above 12 years were relatively slight and were insignificant. The boys as compared to girls had higher absolute and relative values. The relation of physical working capacity to lean body mass was determined too.
In conclusion, this study provided an information about the growth, body composition and cardiorespiratory fitness of Bulgarian children.

P# 46 BODY COMPOSITION AND WORK CAPACITY IN FORMER BULG. ATHLETES

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There is lack of information about changes in body structure and work capacity of athletes after stopping their training and competition activity. The aim of this study was to examine body composition. Somatotype and work capacity of former Bulgarian athletes. 42 former qualified sportsmen (men and women from different kind of sports) have been investigated. Body composition (body weigth, % body fat, lean body mass, muscle mass, body mass index),somatotype (by heat-carter method) and submaximal work capacity (PWC_{170} - euro - fit) have been determined. A comparison between former sports-men and sedentary men and women at the same age have been made. Our results indicate serious negative changes in body structure and work capacity of regular sports activity. Their parameters are very close to these of sedentary people at the same age.

P# 47 A SYSTEM FOR CONTROL AND COMPARATIVE ASSESSMENT OF THE RESULTS OF KYNESITHERAPEUTICAL MODELS

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The observation covers three groups of university students with chronic morbility, and one group of healthy student presenting reduced psychophysical fitness (evenly distributed by morbidity rate, sex and age).
Evaluation is made of the efficiency degree of the kynesitherapeutical models used: exercise therapy containing elements of sports games, autogenous training free of physical stress, interval bicycle ergometric training and dosed mountain hiking.
Over a 4-year period, the students undergo periodic examinations using psychophysical and physiological tests with microcomputerization of the obtained data.
The individual results of the tests are preserved in files throughout the full course of the kynesitherapeutical program, and serve for dynamic control of the students' health state. If necessary information (tables and graphs) concerning the changes in each student, or group of students assigned to the same by a common sign (sex, age, diagnosis, university, exercise therapy model) is retrieved from the computer.
The automated system for control, depending on the individual psychophysical and physiological fitness, enables to pick out the optimal model for prophylaxis and treatment of students with various chronic diseases, and of healthy ones with a decreased capacity for work.
The long- term data accumulation makes possible to set up and improve the normative basis for assaying the psychophysical andphysiological fitness of students with health disorders. The system outlined is applicable in any school-age group.

P# 48 CLASSIFICATION OF SPORTS DEPENDING ON THE OXIDATIVE STRESS

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The study is making an attempt to classify sports in dependence with the production of free radicals (FR) in the human body during training and competitions. The increase of free radicals is connected mainly with the general stress and the antioxidant defense system.
1st group: Sports with anaerobic characteristics like sprinting disciplines in running, swimming, jumping...
The FR are produced after the end of the competition, when the athletes pay off the Oxygen duty.
2nd group: Sports with aerobic - anaerobic characteristics like long-distance running, swimming and sport games. The FR are produced during the competition.
3rd group: Sports with weight-categories of the athletes (like boxing, wrestling, power-lifting). The FR are produced before the competition during the periods of descending weight.
4th group: Sports with lower weight of the athletes during the whole year like gymnastics, acrobatics, ballet, aerobics. The FR are potentially higher for the whole year.
This classification could be very useful for coaches.

P# 49 CORRELATION BETWEEN VO_2 MAX AND ANAEROBIC PARAMETERS IN TOP ATHLETES

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The purpose of this study was to make evident the possibility to increase at the same time, through a specific training, both aerobic and anaerobic capacity. We performed in 1095 top athletes from 16 different disciplines, three specific tests: Astrand, total work performed 5-10-15s on cycloergometer and Bosco ergojump, during the same day.

After statistical analysis by anlinear correlation coefficient between VO_2 max.and the parameters of the anaerobic power we noticed as follows:

for 396 subjects (volleyball, football, handball, rugby, cycling, basketball) the correlation was not significant: R=0,22-0,47;# for 339 athletes (sprint, jumps, boxing, greco-roman and free wrestling)the correlation was relatively significant: R=0,51-0,64;

#for 360 subjects (judo, gymnastics, kayak-canoe, rowing, bobsleigh) the correlation was significant:R>0,7.

To conclude a specific training may lead to the improvement of both forms of the working capacity.

P# 50 ADEQUATE FLUID INTAKE-THE ROLE IN IMPROVING THE PERFORMANCE OF A FEMALE VOLLEY-BALL TEAM

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Purpose of the study:

Hard exercise poses a major challenge to the ability of the body in maintaning the constant internal environment that is essential for its optimum functioning. Too many athletes do not drink enough before, during or after exercise. Loosing water and electrolytes will reduce the exercise capacity. For this reason their replacement is necessary for both physical and mental performances. The present study investigates the impact of an adequate Fluid intake (as quantity and electrolyte's content) in the case of a female volleyball team.

Material and methods:

The study was developed for twelve months in different training periods. For each period we measured VO_2 max, calcium and magnesium blood concentrations. The weight of each player was measured before and after exercise. Weekly we performed a simple test measuring the hearth rate and blood pressure before exercise, after warming-up, in the peak moment of the exercise, at the end of the exercise and after 3 minutes of resting. Drinks with adapted formulas were given before, during and after exercise. The quantities and components of the drinks were established to provide water and electrolytes to replace sweat loses and carbohydrates for replacing the energy stores. In some case C,B_1,B_6,B_{12},E vitamins were added. During the whole period the study monitored the results of the gamesand the number of the played sets.

Results:

During the experiment the effort parameters improved 15% for all subjects. We also found an increasement of the blood calcium and magnesium reported to the previous values that showed defficiencies in 43% of the cases. The games won by the team were in greater number comparing to the previous season, permitting to the team to accede into the highest league (First National League).

Conclusions:

1. Fluid intake can improve performance and properly formulate sports drinks containing carbohydrates and electrolytes are an effective factor in maintaining exercise capacity.
2. It is important to begin exercise fully hydrated and to use rehydratation as an important part of the post-exercise recovery process.
3. Maintaining an adequate fluid and electrolytes balance by monitoring the process will improve the blood values of calcium and magnesium, important factors especially for women.

P# 51 ELECTROMYOSTIMULATION BASICS, CHANGES AND LIMITS

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The changes of charge and its density at the biological membranes is discussed from the point of nonequilibrium thermodynamics. From the fundamental equations (Gibbs 1948) it can be derived that the process of muscular contraction is the result of electrostrictive behavior respectively of the reciprocal piezoelectrical effect. Only the process of restoration of nonequilibrium state of the membranes is an energy-demanding process.

Another point of discussion is the fact that the electrical current conducting structures of the muscle fibers are build like small tubes (tubules, cisterns and sarcoplasmatic reticulum). The idea to build such structures could be that they act as waveguides which are able to transfer much higher wave frequencies than hitherto assumed.

According to this new basics, the skeletal muscle fibers must be able to respond to stimulation with electrical impulses of much higher frequencies than is generally belived. Since the 1980s it has been prooved that indeed the muscle fibers of animals and men can respond to electrical impulses with frequencies in the order of magnitude of 10^3 and 10^4 impulses per second. The advantage of the application of such small and high frequent electrical signals applied to the muscular membrane systems is discussed and compared to the effects of broader impulses with lower frequencies.

P# 52 DETERMINATION OF IBW THROUGH SKELETAL FRAME & BODY COMPOSITION

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In this study we have confronted two methods of determination of IBW, the one with skeletal frame and the one of body composition. 90 student subjects (24 females and 66 males) involved in sport activities were examined. According to the sports they practiced, they were divided in to groups. We have calculated Body Density (BD), according to Jackson and Pollooh (1978,1980) and through it, IBW, according to the mean of optimal quantity of Body Fat (BF) (15% fesmales, 21% females). Through the method of the skeletal frame, we have calculated IBW as well, to the same subjects.

Results of both methods were compared.In all groups the calculated BF was in the minimal level of the norme (12%) exept basketball players (BB) (13%). The calculated IBW demonstrated no significant

difference between the groups (p 0.05).
All the groups were found underweight (exept BB) according to calculated IBW.
Using both methods anhance the exacteness of the results, differentiating the componets of body weight, and alowing to judge about the factors that influence BW.

P# 53 SPORTS TRAUMAS TREATED AT THE SPORTS MEDICINE CENTER

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The increasing of the sports activities-competitions, matches, different kinds of training and as a result, the involvement of a great number of athletes in them, causes the growth of the sports traumas. These traumas have always been treated as all the general traumas. But with the creation of the sports Medical Center in Tirana in 1979, and with the qualification of the Sports doctors, it was made possible to treat these traumas seperately. Since its foundation of the Sports Medicine Center, a great quantity of sports traumas have been treated there.
Each injured athlete has a personal index-card which is registered in the check-up register of S.M.C. There you will see written down the examinations which are made, as well as local and general treatment, including here all the manipulations (physiotherapy, massage, infiltration, immoblization etc.) In this study, we have assumend ourselves the task to study the frequency of the traumas according to the diagnosis. These data have been processed in the Institute of Informatics which you'll see presented in detail in the full material.

P# 54 IMPORTANCE OF EXERCISE TRAINING FOR WORKERS IN O I L INDUSTRY

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The aim of this investigation was to work out optimum rational regimens of physical activity at leisure time for oil workers based on the assessment of their physical development, health status and daily physical activity.
We observed 50 male workers using questionnaire, somatometry, clinical observation with blood analyses, functional tests for respiratory and cardiovascular systems. Considering the length of service of the workers they were divided into 3 groups. There were differences in health status and physical activity of patients in these groups.
In order to raise the physical fitness level of the workers we recommended them acceptable training programs at leisure time, taking into consideration their opportunities and desires.

P# 55 REACTION TIME OF ELITE TAEKWONDO ATHLETES TO VISUAL AND AUDITORY STIMULI

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The purpose of this study was to determine reaction times of elite teakwondo athletes, who are highly specialized on fast actions and reactions in competition, to visual and auditory stimuli in comparison with a control group.

We used electronically generated visual and auditory stimuli. Visual stimuli were presented from the left only, from the right side only, bidirectional and in random order.

Tones were presented only frontally. reaction times were measured by an integrated software We measured reaction times of 8 men and 6 women teakwondo athletes 5mean age 21.54+/-2.7 years) of the national Turkish team preparing for the Europaen Championship before (at rest) and after training on two successive days. The control group consisted of 10 students (mean age 18.2+/-1.5 years) at high schools of technical education for computer and orthopaedics.
Our result indicate that for men teakwondo athletes there are no differences in reaction times before and after training sessions. Women teakwondo athletes had significantly prolonged reaction times only for auditory stimuli after training compared with at rest (p=0,02).
At rest, reaction times did not differ between men and women athletes. After training reaction times of women athletes were longer than that of men athletes for left sided visual stimuli (p=0,014) and auditory stimuli (p=0,001). In comparison with the control group reaction times of teakwondo athletes were shorter (p<0,05) except for left sided and random order light stimuli.
We conclude that
a) because men and women athletes are trained together to the same extent women show prolonged reaction times as a sign of exhaustion,
b) because the control group consists of technicians with high attentive abilities their reaction times equalize especially for random stimuli.
c) At the whole elite teakwondo athletes show shorter reaction times than controls because of their specialization in this martial and favouring speedy reactions.

P# 56 BODY IMAGE SATISFACTION LEVEL OF ARTISTIC GYMNASTS, RHYTHMIC GYMNASTS AND NON-ATHLETES

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Purpose:
The purpose of this study was to determine the body image satisfaction level of female Artistic Gymnasts, Rhythmic Gymnasts and Non-Athletes.
Method:
The sample of this study was 21 female Artistic Gymnasts (M_{age} 10.38±0.97) Rhythmic Gymnasts (M_{age} 10.32±1.08) and 40 non-athletes (M_{age} 11.08±0.86). To determine body image satisfaction level of subjects "Berscheid, Walster and Bohrnstedt Body Image Questionnaire" was used.
Result:
Although one-way ANOVA showed no significant difference in mean body image satisfaction levels of the groups ($F_{(2,91)} = 2.34$; $p > .05$). MANOVA results revealed overall significant differences in body image satisfaction level among groups ($T^2 = 1.81$, $F_{(50,128)} = 2.31$; $p > .01$). Follow up univariate analysis demonstrated significant differences in satisfaction level of body proportion ($F_{(2,89)} = 3.16$; $p > .05$), body posture ($F_{(2,89)} = 4.18$; $p > .05$), arms ($F_{(2,89)} = 6.67$; $p > .01$), hands ($F_{(2,89)} = 7.10$; $p > .01$), chest & upper body ($F_{(2,89)} = 22.16$; $p > .01$), and sexual organ ($F_{(2,89)} = 6.73$; $p > .01$). Post hoc test indicated that item scores of Rhythmic Gymnasts and non-

athletes were higher than Artistic Gymnasts on arms, hands, chest & upper body. In addition, non-athletes had higher score than Rhythmic Gymnasts on body proportion, body posture, chest & upper body and sexual organ.

Conclusion:

The results of the study might indicate that the types of sport participation effect on the body image satisfaction level of individual. Actual physical characteristic of a individual is not a real indication of their perceptions of body.

P# 57 EVALUATION OF VISUAL ATTENTION OF BASKETBALL PLAYERS, REFEREES, COACHES BY USİNG ERPs (Event related potentials).

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The participiants of basketball, regardless of their profession, are continiously subjected to intensive visual tasks during games and training sessions. The aim of this work is to evaluate the visual attention of players, referees and coaches by using event-related brain potentials (ERPs). Event related brain potentials (ERPs) are EEG changes recorded in respons to a certain stimulus pattern in any sensory modality. The stimulus pattern needs to be repeated, and the EEG epochs corresponding to the stimulus pattern need to be averaged so that the brain responses become remarkable. There are several different ERP's which reflect different features of cognitive processing of the brain and can be evoked by different patterns of stimuli. P300 wave of ERPs is a strong correlate of the directed attention, hence seems to be useable as a measure of the attentional performance. To obtain a P300 response, we used an oddball paradigm where white bars on a computer screen could be located on the right or left of a fixation point (spatial difference). Subjects were told to fix their eyes on the fixationpoint and to count mentally the stimuli appearing on a certain side of the fixation point (targets) and to ignore the stimuli on the opposite side (non-targets). In two recording sessions the targets were once on the right and once on the left to be comperable with the non-targets appearing on the same visual field in the other session. The directed attention of the subjects by counting the targets created a positivity about 300 ms after the onset of the targets (P300) whereas not after the non-targets. Different features could be created to obtain a P300 response but the attention of players, referees and coaches during games and practises is directed to abrupt changes of the relative position of the ball to the player, the player to player, and player and ball to the basketball court. Thus, spatial differences were more relevant. The present results obtained by nine elite players, ten level (A) referees, six high level coaches and ten sedentary person show that there are clear differences in the latencies appearing on the right side referees showed longer N170 latencies in comparison to sedanters at C4 and O2, to coaches at O2 and P300 amplitudes of players were obtained at O1 in comparison to sedanters and referees, at O2 to sedanters and coaches, at Oz to sedanters. For the targets appearing on the left side, coaches showed longer N170 latencies at Cz and Oz in comparison to players and referees showed bigger N170 amplitudes at F4 and C3 in comparison to coaches. Shorter P300 latencies of basketball players at Fz and Cz in comparison to sedanters and referees were obtained as the amplitudes were bigger for coaches than referees at Fz, for referees than sedanters at P3 and for players than sedanters at Oz. We conclude that the training of visual attention processes are reflected in ERPs, and hence ERPS can be used as a reliable and objective evaluation method of visual attention of sportsmen.

P# 58 OPTIC REACTION TIMES OF THE ELITE JUNIOR MALE AND FEMALE HANDBALL PLAYERS ACCORDING TO THEIR POSITIONS

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In the present study, we measured optic reaction times of 166 female and 160 male (between 14-18 years of age) elite handball players, who are playing in high school teams throughout Turkey, and the results compared according to their positions. A computerized packet program (Reaction Time Movement) was used for the measurements.

In A junior male teams (between 16-18 years of age), centre (241.28±15.93) and right (244.11±17.85) playmakers had short optic reaction times (ORT), but pivots (265.78±14.37) had long ORTs.

In B junior male teams (between 16-18 years of age), the mean ORTs of goal keepers and right playmakers were 245.44±8.07 and 248.06±6.6 respectively, whereas that of pivots was 276.80±6.80.

In A junior female teams, it was found that right wingers and right playmakers had short ORTs (249.87±14.56 and 251.11±18.60 respectively), but pivots had long ORT (272.38±21.40).

In B junior female teams, the mean ORTs of goal keepers (248.21±5.53) and right wingers (248.96±17.68) were short, whereas that of pivots (272.98±20.39) was long.

Because right playmakers and right wingers are left-handed and their ORTs are short, left-handed players must be prefered when a team is being formed. In addition, goal keepers must be selected among players having short ORTs.

P# 59 THE EFFECTS OF NASAL DOMINANCE ON CARDIOVASCULAR SYSTEM DURING EXERCISE IN MALE AND FEMALE ATHLETES

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In the present study, we investigated the effect of nasal dominance on systolic and diastolic blood pressure and heart rate during exercise in 129 (88 males and 41 females) students from Physical Education and Sports Academy of Atatürk University. First, the nasal dominances were determined. Then measurements were made at rest and after 6 minutes running with the two nostrils open, with the right nostril closed (RNC) and with the left nostril closed (LNC). Athletes ran 30% of their maximum rate.

resting systolic pressures of the right dominant athletes were found higher than those of the left dominant ones, whereas there was no difference between post-exercise values.

Systolic pressure and heart rate but not the diastolic pressure after exercise with LNC were lower in the right dominants when compared with those in the left dominants.

Systolic pressure of the right dominants with RNC was higher than that of the left dominants, whereas there was no difference between the two groups in terms of diastolic pressure and heart rate.

Systolic pressure with LNC was significantly higher than that with RNC in the left dominants .in the rignt dominants, sytolic pressure and heart rate with RNC were significantly higher than those with LNC.

Nasal dominance obviously affects blood pressure depending on the side of closed nostril. However the cause of this is not clear and requires further investigations.

P# 60 **BREASTSTROKER'S KNEE; ISOKINETIC TORQUE CHANGES IN THE SWIMMING ATHLETE**

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Breaststroke-related knee injuries have a high incidence among competitive swimmers. Athletes with knee problems are commonly referred to the Physical Therapy and Rehabilitation Department for treatment. The purpose of this study was to examine the isokinetic torque of knee flexion-extension and the torque ratio between the muscle groups incompetetive swimmers and to compare them with controls.

Breaststroke specialists and nonbreaststrokers were assessed by using an isokinetic dynamometer (Cybex-Norm ™ Testing and Rehabilitation System). Subjects performed isokinetic strength tests for evaluating peak torque, average power and hamstring/quadriceps ratios. Age, weight, years of competitive swimming, specific training characteristics (how long a day, how many a week, etc.), swimming performance (taken from the last national swimming competition) were noted.

The relation between the variables were investigated by correlation coefficients. Differences between the two groups the two groups were estimated using Mann-Whitney U test.

POSTER EXHIBITION

29 April 1999

Poster Hall

P61 - P90

P# 61 THE EFFECTS OF ELECTRİCAL STIMULATION ON MUSCLE FATIGUE

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The beneficial effects of electical stimulation on muscle rehabilitation are documented. Fatigue is produced in the muscle after each type of exercise application. Treating the fatigue muscle excessively is therefore not a suitable way of reaching a productive level. In this study, before reaching fatigue we stimulated nondominant biceps brachii muscle of 20 students (age between 19-23 years) with (bipolar technique) electrical stimulation by giving surging faradic currents (50 cycle frequency) during 1 hour. Lactic acid level was evaluated before and after electrical stimulation (1cc blood sample was taken from brachial vein). Students did not give a subjective complaint of fatique after one hour application. The mean lactic acid level was 13.6±0.958 mg/ 100ml after electrical stimulation. T- test was used in statistical analysis. No statiscally significant difference was found between pre and post electrical stimulation lactic acid levels ($p>0.05$).

P# 62 COMPARISON OF THE VITAL CAPACITY AND HAND GRIP OF RIGHT AND LEFT HANDED FEMALE ATHLETS IN BASKETBALL, VOLLEYBALL AND HANDBALL BRANCHES

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Purpose of The Study:
The aim of this study was to compare of the vital capacity and hand grip of right and left handed sportswomen in basketball, volleyball and handball branches.
Material and Methods:
Hand preference was participated voluntarily to this study as subjects (16 basketball players, 17 handball players and 17 volleyball players). Their average vital capacity, right and left hand grip datas were as follows:
Basketball, right handed (n=11): 3.59±0.59, 23.08±2.18, 22.38±2.52.
left handed (n=5): 4.46±0.43, 24.20±1.76, 23.50±1.98.
Volleyball, right handed (n=12): 3.92±0.60, 27.51±5.59, 27.00±4.63.
left handed (n=5): 3.82±0.27, 27.48±2.63, 25.67±2.77.
Handball, right handed (n=14) : 3.82±0.41, 27.14±4.17, 26.90±3.82.
left handed (n=3): 3.20±0.26, 26.76±3.14, 25.10±2.92.
Conclusions:
At the end of the study in right and left handed basketball, voleyball and handball female athletes showed no significant relationship between vital capacity, right and left hand grip. There were some significant differences between branches of all groups ($p<0.05$).

P# 63 THE ANALYSIS OF POSTURAL AND BIOMOTORIC CHARACTERISTICS OF PUBESCENT BASKETBALL PLAYERS AND THE SEDENTARY

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This study aims at determining the postural and biomotoric characteristics of the pubescent who play basketball in terms of physical development.
50 men (25 basketball players, the 25 sedentary), 50 women (25 basketball players, the 25 sedentary) voluntarily attended this study. Turkey's pubescent norm was formed by both the men at the age of 12-14 and women at the age of 10-14 who has played basketball at least for 3 years.
In this study postural analysis, cross pattern method; anterior, posterior as visual, head (neck), shoulders, vertebral colon, buttocks, knees from lateral and deformities in feet were examined. In biomotoric tests, Flamingo Balance Test, Hitting Discs, Sitting Stretch, Long Jumping as Stopping, Hand Dunamometer, Sit Up, Hanging with folded arm, 10x5 sit Up Jogging got applied.
The findings of this study shows that deformities of male and female basketball players were lower than those of the sedentary, except for dominant sided shoulder droppiness. However, biomotoric characteristics of male and female basketball players were higher than those of the sedentary.
As result, it has been seen that the postures of basketball players and their biomotoric characteristics were in better position compared to the sedentary, but the dominant side shoulder droppiness become evident, as well. In order to avoid postural defects, it can be expressed that putting pressure on dominant and non-dominant sides should be balanced. It has also been examined that Kypholortic structure and scherman defects are in high amounts in the sedentary groups of men and women.

P# 64 MATURATION LEVELS AND PHYSICAL BODY COMPONENTS OF YOUNG RHYTMIC SPORTIVE GYMNASTS

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Purpose of the Study : Ther purpose of this study was the estimation of maturation levels with different methods and the evaluation of the relation of growth and physical body components of young rhytmic sportive gymnasts (RSG).
Material and Methods : 12 RSG attended the study (age 10.36+/-1.09). After kinanthropometric measurement were performed, the subjects were examined for secondary sex charecteristics (Tanner Method) and a hand-wrist x-ray was taken and scored with the Greulich-Pyle method.
Results : The skeletal age of th subjects was retarded, compared to the chronological (difference -1.25+/-0.80 years). High relation was found between the skletal and chronological age ($r=0.82$). Medium or high correlation was found between skeletal age and height ($r=0.80$). The secondary sex charecteristics showed the subjects in normal sexual developmental boundaries. Formulas and indexes showing the body fat composition were below the normative values (body density 1.050+/-0.004, %fat %7.85+/-2.54, LBW 25.28+/-3.21, BMI 15.07+/-0.82).
Conclusion : In this study, the subjects had retarded maturation. Body fat components were below the norm values, which showed their appropriateness for RSC. But the low body fat may cause retardation of menarche and of sexual development.
In the direction of this preliminary study, the growth and development and potential dangers to the young RSG should be investigated by examining more subjects longitudinally and using a control group.

P# 65 THE ANALYSIS OF POSTURAL AND BIOMOTORIC CHARACTERISTICS OF ADOLESCENT BASKETBALL PLAYERS AND THE SEDENTARY

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This study aims at determining the postural and biomotoric characteristics of the adolescent who play basketball in terms of physical development.
50 men (25 basketball players, the 25 sedentary), 50 women (25 basketball players, the 25 sedentary) voluntarily attended this study. Turkey's adolescent norm was formed by both the men at the age of 15-21 and women at the age of 14-18 who has played basketball at least for 3 years.
In this study postural analysis, cross pattern method; anterior, posterior as visual, head (neck), shoulders, vertebral colon, buttocks, knees from lateral and deformities in feet were examined. In biomotoric tests, Flamingo Balance Test, Hitting Discs, Sitting Stretch, Long Jumping as Stopping, hand Dunamometer, Sit Up, Hanging with folded arm, 10x5 sit Up Jogging got applied.
The findings of this study shows that deformities of male female basketball players were lower than those of the sedentary, except for dominant sided shoulder droppiness. However, biomotoric characteristics of male and female basketball players were higher than those of the sedentary.
As result, it has been seen that the postures of basketball players and their biomotoric characteristics were in better position compared to the sedentary, but the dominant side shoulder dropiness become evident, as well. In order to avoid postural defects, it can be expressed that putting pressure on dominant and non-dominant sides should be balanced.

P# 66 ANTHROPOMETRIC MEASUREMENTS IN YOUNG ADULTS

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Purpose:
Antropometric measures differ according to sex, race, some diseases and physical activities and therefore used widely in medicine. There are lots of published papers regarding the antropometric measurements and their standardization. In socioeconomically developing countries like Turkey, the mean anthropometric measures may change and therefore in order for the future researchers to use it, we performed a study on anthropometric measurements.
Materials and Methods:
We performed measurements on 473 male (mean age: 19,86±7,96) and 115 female (mean age : 18,43±1,83) in our univercity. Standart methods of anthropometric measurements are used to measure skinfold thickness in biceps, triceps, wrist, subscapular, chest, abdomen, suprailiac, hip, knee, calf regions, height, weight, upper and lower extremity and fathom lengths, biiliac and biacromial distance in both sexes.
Results
There are no statistically significant differences between both sexes in heigth, weight, upper and lower extremity measurements. Also, there are no statistically significant differences in regard to fathom length, biacromial and biiliac distance measurements in both groups. The most significant differences are noted in the skinfold measurements. The mean values of skinfold measurements of abdomen, biceps, calf, subscapular, suprailiac, hip, triceps in females are significantly higher than males. There are no differences in skinfold measurements in the areas of ankle, chest, and knee in both sexes. Only the wrist skinfold thickness measures of males are higher than females.
Conclusions
In our study we couldn't find a difference in height, weight, extremity lengths, biacromial and biiliac distance measurements in males and females. The skinfold thickness was found to be greater in females. We think that this study which was held in healthy adolescent, will help to pursue the changes of anthropometric measurements in disease states and in sportsman.

P# 67 THE EXAMINING OF MORPHOLOGICAL AND BIOMOTORIC CHARACTERISTICS OF CANDIDATES TAKING THE SPECIAL SKILL EXAMINATION OF PHYSICAL EDUCATION AND SPORTS

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Training of teachers of physical education and sports has been shaped by taking the students who are successfull on the special aptitude test to faculty of departments in physical education. Suitable training of chosen students to the aim necessiates not only giving good education, but also using a well qualified selection system. In Turkey, the selection of students to physical education departments has been made by determining the biomotoric characteristics, evaluating morphological characteristics will help an extended selection come true and more qualified students be chosen.
In this study it is aimed at determining the effective level of morphological structure and biometrics characteristics of students in success. In the period 1997 to 1998, 500 candidates were taken in this study's scope by thinking to evaluate the results of the exam held by physical education depertment at Dumlupınar University in Kütahya. Anthrometric and biometrics measurements, which include vertical gumming, push up and the like, were used in determining the morphological structure.
In general, the result of study showed that the morphological structure affects biometrics characteristics. Therefore, it can be said that taking the morphological structure into the systems of exam will give an advantage in guilty and quantity.

P# 68 TURKISH MALE NATIONAL HANDBALL TEAM WERE ANALYZED MOTORIC ATTRIBUTIONS AND ANTHROPOMETRIC STURUCTURES

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19 Mayıs University Physical Education and Sport High School SAMSUN

In this study, some motoric and anthropometric structures of Turkish Male National Handball Team were determined and analyzed, and compared to the other researches.
12 players of Turkish Male National Team aged between 20 and 25 were measured. Totally 47 measurements were taken respectively (age, height, weight, back and grip strength, percent body fat, fat-free mass, length measurements from 8 sites, skinfold from 8 sites, diameters measurements from 9 sites, circumferences from 14 sites).

Minimum (Min), maximum (Max), mean (X) and standard deviation (SD) were taken and compared with other researches.
There were no significantl differences about weight, age and anaerobic structure between Turkish National Handball Team and other National Handball Teams. On the other hand, there were significant differences considering anthropometric structure, diameter, circumferences and height.
As a result, when handball players compared with other branches, according to the t-test results, significant differences were observed.
Key Words : Handball National Team, anthropometric, physical fitness.

P# 69 AZERBAIJAN AND TURKISH JUNIOR FEMALE NATIONAL HANDBALL TEAMS CONSIDERING ANTHROPOMETRIC AND SAME MOTORIC STURUCTURES

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The aim of this study is to compare Azerbaijan and Turkish Junior Female National Handball Teams considering anthropometric and some motoric structures. In this study, there were 16 subjects from Turkish Junior Female Handball Team (T.J.F.N.H.T.), and 11 subjects from Azerbaijan Female National Handball Team (A.J.F.N.H.T.) N=27 in European Handball Championship, aged 15-17 years. All subjects' height, age, weight, hand-grip left/right, back strength, leg strength, vertical jump, anaerobic power, percent boyd fat and fat-free mass were measured. Their skinfolds (biceps, triceps, subscapula, chest, suprailiac, abdominal, thigh, culf and total skinfold, circumferences (head, neck, chest, shoulder, abdomen, hip, biceps, ext/flex., forearm, wrist, thigh, knee, calf, ankle), length measurements (upper body, arm outstretched, forearm, upper arm, total arm, thigh, calf) and diameters (ankle, femur/humerus bicondular, bitroconteric, biiliac, wrist, chest width, blacromial) were measured. Then mean (X) and standard deviation (SD) of all variables were compared between T.J.F.N.H.T. and A.J.F.N.H.T. After that t-test was calculated for each variable.
As a result; the measurement parameter scores of T.J.F.N.H.T. were significantly different in length; upper body (t=9.10), leg (t=9.8), upper arm (t=5.76), and calf (t=5.30), in circumference; hip (t=-2.2) and shoulder (t=3.5), in diameter; bitroconter (t=2.36), at df=25, two-tailed $p<0.05$ level. The other variables weren't different from each other.
Key Words :
Junior Handball National Team, anthropometric, physical fitness.

P# 70 THE EFFECTS OF A THREE MONHTS EXERCISE ON PHYSICAL FITNESS, BODY COMPOSITION AND SOME BLOOD PARAMETERS IN SEDANTER MIDLLE AGED WOMEN

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The Purpose of The Study :
The aim of this study was to examine the effects of a 3-months aerobic exercise and aerobic exercise with training on the physical fitness, body composition and some blood parameters in middle aged women.
The Material and Method :
All measurements were taken before and after three moths training. Three times a week and daily one hour aerobic exercise and aerobic exercise with weight training were performed by two different groups. The intensity of exercises were controlled by heart rate monitor. Heart beats Per minute was between 130 and 140 beats for each subjects. In statistics, two way ANOVA was used to determine the effects of a 3-months aerobic exercise and aerobic exercise with weight training on the physical fitness, body composition fitness, body composition and some blood parameters.
Results :
Results of this study showed that there were no stastiscally significant differences between two groups' aerobic power ($p>05$). On the other hand, in the weight %8.19, systolic blood pressure %9.96, diastolic blood pressure %6.10, cholesterol %14.65, triglycerides %31.74, LDL-C %22.08 and percentage of body %25.4 decrease were found, while in grip strength %28.22, max VO_2 %85.83, anaerobic power %6.5, HDL-C %34.05 increase were observed. Training had significant effects systolic blood pressure, heart rate, handgrip strength, vertical jump, HDL-C, APO-A1, at 0.05 confidence level, while max VO_2, LDL-C, percentage of body fat and cholesterol were effected by training at 0.01 significant level.
It can be said that three months low intensity aerobic and aerobic exercise with weight training may increase the physical fitness of middle aged women and decreased cardivascular risk factors.
Key Words :
Physical fitness, exercise and blood parameters.

P# 71 EFFECTS OF LATERAL DOMINANCE ON ISOTONIC ELBOW STRENGTH DEVELOPMENT

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The Purpose Of This Study :
The aim of this study is to determine effect of isotonic strength training on elbow strength development of 18 to 25 students according to their deminant hand preferences at Giresun Education Faculty of KTU in the academic year of 1996-97.
Methods :
For determination of subject groups lateralization inventory was applied on 700 sedentary male students. According to Geshwind scores and anthropometric measurements, left hander (n=12), weak right hander (n=12) and strong right hander (n=12) groups were selected respectively. Following pre-test, 12 weeks strength training was applied and then post-test was performed. During pre and post-test, one way ANOVA was used to determine the differences among groups. To get source of difference, TUKEY'S HSD test was employed. In addition, two way ANOVA was used to determine the effect of laterality and training on strength development.
Results :
Results of this study showed that there were significant increase in the right and left isotonic elbow flexion and extension strength of three groups after 12 weeks training. Strength increases in the right

elbow of left handers were significantly higher than right handers, while there were no statistically significant difference in the amount of left elbow' strength development of right handers. There were opposite asymmetry between left and right handers' left and right elbow strength. In right and left elbow, strength of flexion and extension were significantly affected by laterality and training factors.
Conclusion :
0It seems important to consider left and right arm strength training with respect to lateral dominance of athletes.

P# 72 THE CORRECT RECOVERY AND THE HIGH PERFORMANCE

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The high performance is possible due to systematicaly training and in the same time due to a correct and intensive recovery.
We had studied the effect of modern and individual methods of recovery on the male lot of judo juniors during precompetitional and competitional periods (Mondial Championship-Cali-Columbia-september 1998 and European Championship-Bucuresti-Romania-october 1998).
To set a value on recovery we used the following methods: somatometry (optimal weight and optimal leanmass), dynamometry, force index and Flack test.
We concluded that an intensive training and a correct and intensive recovery of athlets are able to restore to optime state of own physical possibilities and to get medals.

P# 73 A STUDY ON THE FACTORS FORMING UNIVERSITY STUDENT'S SPORTS INTERESTS IN BULGARIA

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THE AIM of this study is to analyse the factors influencing the formation of univercity student's interests for sport over the past ten years.
THE GOALS attained to achieve this aim were the following:
1. An analisys of the social and economic changes in Bulgaria during the past ten years and there effect on the activities of univercities.
2. An investigation on the changes in the system of sports performance classes at the higher education institues.
3. An investigation on student's personal opinion on sports interests and their correlation with the objective realities of life and univercity education.
THE METHODS of study were a study on literary sources, an interview, an inquiry variation analysis, theoretical analysis and synthesis.
The following CONCLUSIONS have been drawn from the analysis of the results :
1. The past ten years have been marked by significant qualitative changes in the social and economic conditions in Bulgaria. Democratization, market economy and development of private property are the objective basis for changing the factors forming certain personality interests.
2. The major factors influencing interest for sports activities in university students in Bulgaria are the following : social significance of sport, media influence, traditions and manifestation of personality.

P# 74 GAMES AND SPORT OCCUPATIONS IN KINESITERAPY ATTACHED TO SICH OR PULLED THOUGH STUDENTS

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Kinesiterapentist
With the current work we aimed to break the conservatism in Kinesiterapy and help for wider attachement of the sport method in practising it. The strong emotional effect, the free natural movements in the games satisfy completely the motive hunger of the sick and pulled through students. By the games, the feelings of depression and undererration with which the students with helth clevlation are overburdened are easily overcome because before, the hypodinamics have had priority in their motive regimen. Games and sport occupations with their emotional charge make the students from the special medical group wanted and overtax the whole organism and reflect positivly on their psycho-physical tone. The elaborated methods and the obtained results allow without any risk the games and sport occupations to find a place in the whole kinesiterapeutic practise.

P# 75 WATER QUALITY CONTROL FOR SWIMMING POOLS AND ITS SIGNIFICANCE FOR SPORTS-TRAINING ACTIVITIES

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Studies on the water quality in several swimming pools in Sofia were carried out durring a period of one year. The testing programme included the determination of pH, suspended solids, total dissolved solids, dissolved oxygen and chlorine. Their values are briefly discussed.
The importance of the doses of the chlorine disinfectant is discussed also.
Particular mention is made of the halogenated byproducts produced in the water. Too large doses of disinfectant must be avoided in order to prevent harmful effects on the swimmers.
The quality requirements on swimming pool water that have to be met are discussed also.

P# 76 SOCIAL LEARNING THEORY AND HIS IMPORTANCE IN PHYSICAL EDUCATION

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A. Bandura has become one of the important scientists of the socialcognitive current by developing social learning theory since the beginning of 1970's in the USA. His theory defines the role of social environmental factors with psychological factors by relating them with each other in a learning process.
The success of social learning theory has been realized in a huge area, from health education to physical education, with many applied researches since 1980's.
This paper purposes to realize theoritical frame of social learning theory and its contribution to the physical education.

P# 77 THE EFFECT OF LOCAL TV-STATIONS ON PROPAGATION OF SPORTS IN COMMUNITY

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It is assumed that sports on TV is a way of participating in sports in terms of emotion, challenge, fan behavior and match character. Passive participation may be enhanced but there is much doubt that active participation in sports will increase in this manner.
Beginning with the one-station TRT 1 area, the enormous increase in the number of TV stations and sports programmes wat not accompanied by a parallel increase of the number of athletes and propagation of sports in community. Priorieties, politics, quality, quantity, duration and sending hours of sports programms were investigated on the basis of national TV-stations, but not so far ... the local ones. This study aims to show the effects of local TV-stations on the propagation of sports in community.
For this purpose we applied a questionnaire, especially designed to evaluate the expectations regarding sports on TV, to 211 people living in three districts of Istanbul, namely Kartal, Maltepe and Pendik. The local TV-station of this three districts KMP was our main target. Statistical analysis was performed on grounds of "frequency distribution", "percentage", and "chi-square", while answers on a percentage scale were commanted.
Our results show that community members wish an increase of the number of local TV-sport programms dealing with education of sports, decumentary sports programmes, different disciplines and explanation of rules. The fact that students are the greatest group watching sports on the local TV KMP shows the importance of sport activities for students in scholls, between different scholls and out of scholl.

P# 78 COMPARATIVE SOCIAL PSYCHOLOGICAL STUDIES ON DISABLED SPORTS : EXAMPLE OF TURKEY AND AUSTRALIA

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Purpose:
The Purpose of this study is to explain; Comparative Social Psychological Studies on Disabled Sport: Example of Turkey and Australia
Material anda Methods:
The related sources were collected from Turkey and Australian Libraries. The Applied study was made in both countries. The informations which were provided as theorical, practical and applied study were investigated systematically
Results:
The related International Disabled Sport Symposiums were followed in Türkiye. Field study was made in Ankara, Van, İstanbul, Samsun, Edirne and Antalya; in the department of physical. Education and their Colleges in there. There were some investigations in Melbourne, Canberra and Sydney cities of Australia; in Victoria and New South Walles States and in the Territory of the Capital City Türkiye took examples from the wide experiences of Australia.
They used from the programmes of Australia Physical.
Education Colleges, Deakin, RMİT, Ballarat, Victoria Technology Universities The programmes of Hacettepe, Akdeniz, Marmara, Yüzüncü Yıl, Gazi, Ondokuz Mayıs Üniversities and etc; and the programmes of Formel Youth and Sport Academies were examined.
Conclusion:
Taken example from the experiences of Australia and Turkey; the studies on the 2. İnternational Disabled Sport Education Symposium in Akdeniz University. "The programme of Miner Subject on Disabled Sport" was examined. The programme of Sport Expertness on Disabled has opened since 1998-1999. Comparative social Psychological studies on Disabled Sports explained in this programme about sport Expertness on Disabled at first time in Turkey.
Turkey is a part of Sport Expertness on Disabled; and it is thought that it will be very useful for other univercities.

P# 79 COMPARATIVE SOCIAL SECURITY ON DISABLED SPORTS: EXAMPLE OF TURKEY AND AUSTRALIA

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Purpose :
The purpose of this study is to explain : Comparative social Security on Disabled Sports : Example of Turkey and Australia
Material and methods:
The related sources were collected from Turkey and Australia. The informations which were collected, investigated systematically.
Results :
General Monogement of Youth and Sports, Social Security, Youth and Sports Association Law, Constitution, Development, etc. were examined according to Social Security on Disabled Youth and Sports. The approach of Youth and Sports Clubs to Disabled Sportsman was researched.
The subjects of Disabled Sportsman and Social Security of these Sportsmen in the associations like Australia Federal Health and Social Security Ministries, Development Plans, Master Sports, Plans, Development Plan on Disabled, Sports and Recreation Ministries of Federal and States, Federal and States Sport Council on Disabled, Australia Ethnic Societies Council Action on Disabled, Youth and Sports Clubs were investigated. There will be reorganization in Turkey.
Conclusions:
It mentioned that Turkey must take example from other countries about Disabled Sportsman. It mentioned that Australia is the chief country with its General Health Insurance and Umberalle Social Security System. The advantages of these two countries' cooperation were explained. And it mentioned that the problems of Social Security on Disabled Sportsman in Turkey can be solved in a short time by the experiences of Australia.

P# 80 COMPARATIVE SPORT FACILITY COMPLEX DESIGN AND MANAGEMENT ON DISABLED EXAMPLE OF TURKEY AND AUSTRALIA

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Purpose:
The purpose of this study is to explain; the subjects of Comperative Sport Facility Complex Design and Management on Disabled : Example of Turkey and Australia
Material and Methods:

Filled studies and documents were collected in Turkey and Australia were appraised systemetically.

Results:

Besides, the studies of Turkey National Olympics Committee, Organization Committe of the Olympic Games, General Management of Youth and Sport Development Plans on Disabled, Youth and Sport, Specialization Committe about Leisure Study time were examined. The studies of VI. and VII. Development Plans for five years were made in the Youth, Sport and Leisure Study Committee. Some studies were made in the Preparation Committee of 1996-Melbourne and 2000- Sydney Olypic Games; Federal Health, Sport and Recreation Ministries, and the States parts of these in Australia. Besides, filled studies about Sydney Olympic Summer and Disabled Olympic Games were made.

Conclusions:

Turkey wanted to arrange the summer and Disabled Olympics Games are being made in İstanbul. But, the studies about Summer Olympic Games haven't been started, yet. Disabled Olympics are being made in Sydney at 18 October 2000, and Summer Olympics are being made at 16 November 2000 in Australia. Field Studies were made in the related centres, too. In addition to this, Sydney 2000 Disabled and working in Summer Olympics where given to the researcher, too. Comparative Sport Facility Complex Design and Management on Disabled is being told in Ondokuz Mayıs University in Turkey, too. This study is an example because of these charecteristics, of it.

P# 81 COMPARATIVE PRACTICAL STUDIES ON DISABLED SPORTS: EXAMPLE OF PHYSICAL EDUCATION AND SPORTS COLLEGES IN AUSTRALIA AND TURKEY

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Ondokuz Mayıs University, Yaşar Doğu Physical Education and Sports College SAMSUN

Purpose:

The purpose of this study is to explain : Comparative Practicum studies on disabled Sports :

Material and Methods:

The related sources were collected from Turkey and Australia. The informations which were provides as Field study were investigated systematically.

Results : Sports Practicum Studies on Disable were examined in the Department of Physical. Education and Sports and their Colleges in there üniversities of Australia. Sports Studies on Disabled were followed by helps of Australia Federal Health Ministry. Documents of Australia Disabled Sports Council and Disabled Sports Council of Victoria State were taken. Some meetings were followed the programs of Deakin, RMIT and Victoria Tecnical University were examined the studies of Ethnic Disability Action Council of Australia were examined.

Ondokuz Mayıs University Yaşar Doğu Physical Education and the Sport Collage Expertness programme of Disabled Sports was investigated. Practicul studies were made by the students in Samsun, Ankara, İstanbul. The research are continued in National Education, Private Schools and in the all related associations.

CONCLUSIONS : There were taken a lot of positive developments in the research of Australia and Turkey Practicol Studies were made about Sports Expertness Programme on Disabled at first time in Turkey. We can take a lot of useful knowledges from telling the similan Filed Studies and examples from the other countries.

P# 82 THE EVALUATION OF BASKETBALL-COACHES BY THEIR PLAYERS IN COMPARISON TO THEIR EVALUATION

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Marmara Üniversitesi - Beden Eğitimi ve Spor Yüksekokulu İSTANBUL

Harmony between coach and players is necessary for success in sports. To establish such a harmony the behavior of coaches and interaction of coaches and players has to be analysed and evaluated carefully. In the process of coach-player interaction both sides may perceive the other one in a different way. This can lead to a misunderstanding of the partner. Not solving this communication difficulties will result in exageration of conflicts and decrease of team performance.

Investigations of sports groups focus on two basic items : leadership and communication in the group. We followed this approach and studied the self-perception of the coaches as a leader in comparison to the evaluation of the coach by his players. The latter one is related to the way or perception of coach behavior by the players. Shortly, we tried to find an answer to the question "How is the personality of the coach, his behavior in the training and his communicative abilities perceived by himself and by his players.

We studied 214 players and 26 coaches participating in the men and women Turkish Basketball First Division in 1996-1997. We applied the "Trainer-Player Interaction Scale" consisting of 95 items. In a preleminary application we analysed the obtained data by the item analysis technique to develop the final scale. We used the "item-total corelation", "Cronbach alpha coefficient", "alpha if item deleted quarters. Items with high reliability and validity in the item analysis were included in the final scale.

The results of our study are in line with prior investigations. There is a significant difference in the way of perception of players and coaches. Coaches perceive themselves more competent and effective than their players see them.

P# 83 CAUSAL ATTRIBUTION OF YOUNG MALE AND FEMALE TRACK AND FIELD ATHLETES.

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Purpose :

The purpose of this study was to investigate differences in causal attribution between young male and female track and field athletes.

Method :

In total, 114 track and field athletes, 68 female (M_{age} = 15.8, SD=1.74) and 46 males (M_{age} = 16.20, SD=1.49) were participated in this study. To measure the causal attribution of the subjects Wingate Sport Achievement Responsibility Scale was administered.

Result :

The result of this study indicated that the causal attribution score of female track and field athletes was 73.40±9.19 and the score of male track and field athletes was 72.96±10.37. The results of independent t-test revealed no significant difference in causal attribution ($t=-0.23$; $p>.05$) between male and female track and field athletes.

Conclusion :

The result of this study supported the results of Tenenbaum and Furst (1984) study which showed that there is not a significant difference between male and female athletes' enduring attribution but conflicts with the studies of Zeintek and Breakwell (1986).

P# 84 REACTION TIME OF ELITE TAEKWONDO ATHLETES TO VISUALL AND AUDITORY STIMULI

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The purpose of this study was to determine reaction times of elite taekwondo athletes, who are highly specialized on fast actions and We used electronically generated visuall and auditory stimuli. Visuall stimuli were presented from the left side only, from the right side only, bidirectional and in random order. Those were presented only frontally. Reaction times were measured by an integrated software. We measured reaction times of 8 men and 6 women taekwondo athletes (mean age 21,54+/-2,7z years) of the National Turkish Team preparing for the European Championship before (at rest) and after training on two successive days. The control group consisted of 10 students (mean age 18,2+/-1,5 years) at high schools of technical education for computer and orthopaedics.

Our results indicate that for men taekwondo athletes there are no differences in reaction times before and after training sessions. Women taekwondo athletes had significantly prolonged reaction times only for auditory stimuli after training compared with at rest ($p=0,02$). At rest reaction times did not differ between men and women athletes. After training, reaction times of women athletes were longer than that of men athletes for left sided visuall stimuli ($p=0,014$) and auditory stimuli ($p=0,001$). In comparison with the control group reaction times of taekwondo athletes were shorter ($p<0.05$) except for left sided and random order light stimuli.

We conclude that

a) Because men and women athletes are trained together to the same extent women show prolonged reaction times as a sign of exhaustion,

b) Because the control group consists of technicians with high attentive abilities their reaction times equalize especially for random stimuli.

c) At the whole elite taekwondo athletes show shorter reaction times than controls because of their specialization in this martial art favouring speedy reactions.

P# 85 THE TRAINER'S IMPORTANCE FOR DEVELOPMENT OF AN EFFECTIVE TEAM AMBIENCE

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ESKİŞEHİR

In recent years, winning; being productive and retaining the current performance for the sport clubs has brought out the importance of 'trainers'. Turkish sports clubs, like other sports clubs around the world, are in need of effective trainers who would make their clubs number one both in local and national sports arena (1).

No matter how talented and hard working an athlete is, he always needs a good trainer. A trainer is a person who needs to be knowledgeable in various different areas of sports science. To train a science and a philosophy to be an effective trainer, one needs to be able to lead, be able to foresee the future, and set goals accordingly which is a crucial part of training. For competitive athletes who like challenge, a trainer has to sets his goals clearly from the beginning and keep up to these goals.

Competitiveness is not a quality found among many Turkish athletes. Thus to make athletes more competitive, training sessions are generally in one from of competition. However to make every training session competitive among athletes may result in stress, arguments, and other undesirable situations.

Thus, there is a need for an effective training philosophy which would help improve athletes' abilities, increase team devotion and team dicipline.

P# 86 DETERMINING THE SIMILARITIES AND DIFFERENCES ABOUT THE LIFE-STYLES AND PHYSICAL ACTIVITIES ON THE REPRESENTATIVES OF SPORT FOR ALL IN PROVINCES

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This study is a survey, indicating some physical fitness results of 64 people who have been the representatives Federation of Sport For All aged between 24 and 64 with different professions, and a survey about sports and health.

The people who have been questioned in the survey have been asked their ages, their weight, their height and the number of their heart rates and 40 questions including their marital status, their education, their working athmosphere, their present status, their professions, leisure activities, the level and frequency of taking exercises and the money they spend on sport activities and exercises. And the results have been evaluated according to their adithmetic avarages and percentage values.

According to statistical analysis, average age for men representatives Federation of Sport For All is 42.3; average height is 171.0 cm; average weight is 73.1 kg; average heart rates is 73.7 per minute; on the other hand average age for women is 37, average height is 164.8, average weight is 62.4 kg, average heart rates is 74.5 per minute.

Those who took part in the survey indicated that 84% of men were married; 12% of men were single. 52% of men had a univercity degree (graduate) 36% of men had a secondary school diploma, 84% of men were still working; 61% of men had on intensive working athmosphere both physically and mentally. %42 of men took exercises three times in a week. The women representatives in the survey indicated that 58.5% of women were married, 28% of women were single, 50% of women had a univercity degree (graduate) 35.5% of women had a secondary school diploma. 79% of women were still working, 50% of women took exercises three times a week. These results have been obtained with a arithmatic comparison of averages and percentages.

As a results, indicate that when compared with the women representatives and as for as the age, weight and height are concorned, men representatives older, taller and heavier than women representatives they also indicate that 50% of the whole group have a university degree and 38% of the group have a high school diploma 42% of men, 50% of women representatives take exercises more than 3 times a week 30% of men and 7.33% of women representatives do sports irregularly; 12% of men and 28% of women representatives do not take any exercises. Federation of Sport For All representatives chosen for each province to encourage people to do sports have been found that they do not show enough interest in sports.

P# 87 8-10 YAŞ ÇOCUKLARDA AKADEMİK BAŞARI İLE DENGE BECERİSİ ARASINDAKİ İLİŞKİNİN İNCELENMESİ

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Bu çalışmada, motor öğrenme ve bilişsel öğrenmede beynin ortak kullanılan merkezlerin olduğu ya da kullanılan bölgelerin birbirini etkilediği düşünülerek, bilişsel öğrenme için akademik başarı, motor beceri öğrenimi için denge ve koordinasyon becerisi kriter olarak alınıp, akademik başarı ile denge ve koordinasyon becerisi arasında bir ilişki olup olmadığı araştırılmıştır. Çalışmaya 8-10 yaş arasındaki ilkokul 2. 3. ve 4. sınıflarında eğitim gören 44 kız (boy ort. 135.85+7.73), 48 erkek (boy ort. 137.10+7.9, ağırlık ort. 34.48+8.2) toplam 92 çocuk seçilmiş ve karşılaştırmalı bir inceleme yapılmıştır. Gruplara Statik Test olarak "Stork Stand" ; Dinamik Test olarak "Johnson Modification of the Bass of Dynamic Balance" uygulanmıştır. Akademik başarının ölçütü olarak, Özel Doğuş İlkokulu ölçme değerlendirme bürosunun hazırladığı ve deneklere uygulanan ünite tarama ve başarı testleri uygulanmıştır.
Bu uygulama sonuçları değerlendirmeye alınmıştır. Matematik yetenek testi olarak, Erken Matematik Yeteneği Testi-2 uygulanmıştır. Bu testin korelasyon katsayısı 98 olarak bulunmuş olup P<0.01 düzeyinde anlamlıdır. İç tutarlılık katsayısı ise tüm yaş grupları için 958 olarak bulunmuştur. Norm çalışmaları 1178 çocuğa uygulanarak tamamlanmıştır. Deneklerin boy ve kilo ölçümleri metrik skala ile yapılmıştır. Elde edilen verilerin, Pearson momentler çarpımı korelasyon kat sayısı, aritmetik ortalama, standart sapma, en küçük ve en büyük değerleri alınmış olup, gruplar arası farka bakmak için bağımsız grup "t" testi ve varyans analizi yapılmıştır.
Sonuç olarak; Akademik başarı ile statik ve dinamik denge arasında, pozitif ilişki bulunmuştur. Statik denge ile dinamik denge arasında anlamlı ve pozitif bir ilişki bulunmuştur (p>0.05). 9-10 yaş kız çocuklarının aynı yaş grubu erkeklere nazaran statik denge ve dinamik denge becerilerinin daha iyi olduğu görülmüştür. Serebellumun motor gelişim sürecinde olduğu gibi bilişsel gelişim sürecinde de etkili olabileceği öngörüşü ile özellikle denge ve koordinasyon egzersizleri içeren egzersiz programlarının, bu yaş grubu çocuklarına uygulanmasının faydalı olacağı görüşündeyiz.

P# 88 SPOR EĞİTİMİNE ADAY GENÇLERİN BEDEN PROPORSİYONLARI VE MOTOR ÖZELLİKLERİ ARASINDAKİ İLİŞKİLERİN DEĞERLENDİRİLMESİ

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Bu araştırmanın amacı, Marmara Üniversitesi Beden Eğitim ve Spor Yüksekokuluna girmek isteyen aday öğrencilerin, birinci aşama yetenek sınavındaki testlerde almış oldukları başarı puanları ile beden proporsiyonları arasındaki ilişkilerinin değerlendirilmesidir.
Araştırmaya, yaş ortalamaları 20±2.16 olan 793 erkek (boy=176 ±0.07cm, ağırlık = 66.22±7.45kg), 171 kız (boy=164±0.07 cm, ağırlık = 54.2±6.83) olmak üzere toplam 964 aday katılmıştır. Tüm grupların biometrik (bacak uzunluğu, kulaç uzunluğu, gövde uzunluğu) ve motor özellikleri (sürat beceri, kol çekme, mekik, dikey sıçrama) ölçülmüş, bu özellikler arasındaki ilişkiler SPSS istatistik paket programı ile değerlendirilmiştir. Antropometrik ölçümler Heath Carter protokolüne göre yapılmış olup, motor test ölçümlerinde ise optik okuyuculu elektronik bir sistemden yararlanılmıştır.
Sonuç olarak, erkeklerin dikey sıçrama ile cormique index değerleri arasında negatif anlamlı bir ilişki bulunmuşken, kızlarda istatistiksel olarak anlamlı bir ilişkiye rastlanmamıştır. Kız ve erkeklerde mekik ve gövde uzunluğu arasında yüksek bir ilişki bulunmamışken, kulaç uzunluğu ile kol çekme arasında ise kızlarda anlamlı bir ilişki bulunmuştur. Erkeklerde ise istatistiksel olarak anlamlı bir ilişkiye rastlanamamıştır. Sürat beceri ile oturma yüksekliği değerleri arasında erkeklerde ve kızlarda negatif yönde anlamlı bir ilişki rastalnmamıştır. Her iki grupta boy ile dikey sıçrama arasında anlamlı bir ilişki görülürken, kızlarda boy ile sürat-beceri değerleri arasında negatif yönde anlamlı bir ilişkiye rastlanmıştır. Erkeklerde mekik ve boy değerleri arasında anlamlı bir ilişki bulunamazken, kızlarda ise istatistiksel açıdan anlamlı bir ilişki olduğu tespit edilmiştir.
Bu bağlamda, beden eğitimi ve spor yüksekokullarının giriş sınavlarında kullanılan test bataryalarının oluşturulmasında, popülasyonun farklı biometrik özellikleri göz önüne alınarak belirlenmesi önerilmektedir.

P# 89 SEKİZ HAFTALIK MAKSİMAL KUVVET ANTRENMANININ VÜCUT KOMPOZİSYONU TESTOSTERON VE KORTİZOL, HORMONLARI ÜZERİNE ETKİSİ

M. Hazar
G.Ü. Beden Eğitimi ve Spor Yüksek Okulu ANKARA

Yaşları, x=21.53, ağırlığı, x-69.63 kg olan, on dokuz Beden Eğitimi ve Spor Yüksek Okulu öğrencisiyle, sekiz hafta, haftada üç gün, kas yapıcı maksimal kuvvet antrenmanın vücut kompozisyonu parametreleri yanında, testosteron ve kortizol hormonlarının antrenmana cevabı araştırıldı. Deneklerden ilk antrenman öncesi ve sonrası ölçümlerle birlikte kan örnekleri alındı. Sekiz hafta sonra başlangıçta yapılan ölçüm işlemleri tekrar uygulandı.
Sonuç olarak; vücut ağırlığında (p<0.01) ve vücut yağ yüzdesinde anlamlı bir (p<0.05) azalma tespit edildi. Biceps curl, bench press, mekik, military press, squat, ters mekik, leg curl, rowing, dikey sıçrama ve sırt kuvvetinde (p<0.01), sağ el pençe kuvvetinde (p<0.05) anlamlı artışlar bulunmasına rağmen, sol el pençe kuvveti ve bacak kuvvetinde ise önemsiz değişiklikler tespit edildi.
Serbest testosteron seviyesinde ilk antrenman öncesi ve sonrası (p<0.01), son antrenman öncesi ve sonrası ölçümlerinde (p<0.05), anlamlı bir artış tespit edilmiştir. İlk ve son antrenman öncesi İlk ölçümlerde anlamlı bir değişiklik bulunamazken, ilk ve son antrenman sonrası ölçümlerinde; ilk antrenman sonrası ölçümlere göre son antrenman sonrasında anlamlı bir azalma tespit edildi (p<0.05).
Kortizol hormonunda, ilk antrenmanda anlamlı bir artış görülürken (p<0.05), son antrenmanda anlamlı bir azalma tespit edildi (p<0.01). İlk antrenman ve son antrenmanı ön test değerleri arasında anlamlı bir fark bulunmazken son test değerleri arasında önemli bir fark bulundu (p<0.01).
Araştırmada antrenmanın hormon seviyelerini değiştirdiği fakat rezervleri artırmadığı kanaatine varılmıştır.

P# 90 THE NUTRITION OF THE ATHLETES FROM THE SPORT SCHOOLS

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The paper present our study upon the food intakes of young athletes in Bulgarian sport schools. We calculated the content of proteins, fats, carbohydrates, antioxidants and structural information in dietary feeding.

The results indicate that the nutrition in school canteens responds to the energetic needs of the different sports disciplines and categories. But this is due to the higher consumption of fats- 2.2 g/ kg (norm 1.5-1.7 g). The proteins are lower - 1.9 g/ kg (norm 2.0-3.0 g) and also carbohydrates - 7.5 g/ kg (norm 8.0-12.0 g).

The most important antioxidants (vit. E, vit. A, vit. C and Selenium) and the structural information calculated by formula in the food intake were not sufficient during the winter-spring period.

This research clearly indicates that the level of proteins and carbohydrates for the whole year should be increased, together with the antioxidants and structural information during the winter-spring period.

P# 91 SELF-CONCEPT & PHYSICAL SELF CONCEPT OF ACTIVE & NON-ACTIVE PHYSICAL DISABLES

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Purpose:

The purpose of this study was to investigate the self-concept and physical self-concept of the active and non-active physical disables.

Method:

In total, 38 physical disables active and 32 physical disables non-active males and females participated to this study. Tennessee Self-Concept Scale (TSCS) and Physical Self-Perception Profile (PSPP) were administered for measuring self-concept and physical self-concept of subjects respectively.

Result:

MANOVA results revealed that there were overall significant differences in the physical self-concept of two disables groups (T^2=0.29, Exact $F_{5,63}$= 3.70, p<0.01). Follow-up univariate analyses demonstrated group differences in sport competence ($F_{1,69}$= 15.81, p<0.01) and physical conditioning subscales ($F_{1,68}$= 11.47, p<0.01) of Physical Self-Perception Profile in favor of physical active disabled. MANOVA results indicated no significant differences in two disables groups with respect to self-concept (T^2=0.10, Exact $F_{7,60}$=0.87, p< 0.05).

Conclusion:

The results obtained in this study indicated that sport commitment has positive effect on improving physical self-concept, but has no effect on self-concept of physical disables.

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