Prevalence and risk factors of MTTS in PETE students
Bliekendaal, S.; Fokker, Y.M.; Plomp, S.; Stubbe, J.H.

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LOWER LIMB ALIGNMENT AND FLEXIBILITY ASSOCIATED WITH KNEE ABDUCTION MOMENT AND ANGLE DURING SINGLE-LEG LANDINGS AND HOP & SIDESTEP

SAKU, S.1, KAGAYA, Y.1,2, TSURUIKE, M.2
1. SHOWA UNIVERSITY (YOKOHAMA, JAPAN) 2. SAN JOSE STATE UNIVERSITY (SAN JOSE, USA)

Introduction
Increased knee abduction moment and angle during movements such as landings and side-step cutting are suggested to be a risk factor for an anterior cruciate ligament (ACL) injury. A number of contributing factors have been reported to reduce knee abduction moment and angle. However, the relationship between lower limb function and increased knee abduction moment or angle doesn’t have just one point of view (Cronstrom et al., 2016). There is a need for an understanding lower limb function that contributes to increased knee abduction moment and angle. The purpose of this study was to investigate the correlation of lower limb function and knee abduction moment and angle during single-leg landings (SLL) and hop & sidestep (HSS).

Methods
Twenty-seven male and female university students (53 legs) participated in this study. Their mean age was 20.3 ± 4.4 years, height and weight were 167.4 ± 8.7 cm and 60.3 ± 10.7 kg. Subjects were measured for lower limb function (range of hip internal/external rotation, range of ankle dorsiflexion, thigh foot angle (TFA), Q-angle, and navicular drop). Additionally, subjects performed a minimum 3 trials of SLL and HSS on their both legs. This procedure was recorded using a three-dimensional motion analysis system (Vicon-MX) operating a 250Hz, and two force platforms for ground reaction forces on 1,000Hz. The Pearson correlation coefficient were used to explore relationships between lower limb function and knee abduction moment and angle during SLL and HSS.

Results
During SLL, peak knee abduction moment was found to be significantly correlated with TFA (p < 0.01, r = 0.51). Peak knee abduction angle was also found to be significantly correlated with TFA (p < 0.02, r = 0.32). During HSS, peak knee abduction angle was found to be significantly correlated with TFA (p < 0.01, r = 0.39) and Q-angle (p < 0.05, r = 0.29). Little has been reported on relationship between TFA and knee abduction. This study indicated that increased TFA correlated with knee abduction moment during SSL and knee abduction angle during SSL and HSS. Previous study reported that peak knee valgus during the single leg squat and static knee valgus were not significant greater in the high Q-angle group compared to the low Q-angle group (Pantano et al., 2005). Our study indicated that Q-angle correlated with knee abduction during HSS. It is useful to understand the factors of increased knee abduction moment and angle.

References

Contact
shohei.sato.830@gmail.com

THE EFFECT OF UPPER LIMB EXHAUSTIVE ACTIVITY ON CORTICOSPINAL EXCITABILITY AND MOTONEURON POOL RESPONSIVENESS OF LOWER LIMB

GHARAKHANLOU, R., KAVEHY, A., AMIRY, E., RAJABI, H.
TARIQAT MODARES UNIVERSITY

Introduction
The aim of the present study was to investigate the effect of upper limb exhaustive activity on corticospinal excitability and motoneuron pool responsiveness of lower limb.

Methods
Ten active male (age: 28.1 ± 2.99 years, body height: 1.77 ± 4.1 cm, body mass: 75.7 ± 4.9 kg) available and volunteered to take part in this study and reported to the laboratory on three different occasions. After measuring anthropometric features and familiarization with the pull up and stimulations in the session one, in the second and third visits, motor evoked potential (MEP), cervicomedullary motor evoked potential (CMEP) and maximum direct motor response (Mmax) were assessed immediately, 10 and 20 minutes after the protocol fatigue by the use of magnetic stimulation over the motor cortex and spinal routes and electrical stimulation of peripheral nerve, respectively.

Results
Our results by the use of one-way repeated measures ANOVA showed a significant decrease in MEP tibialis anterior muscle (uninvolved) immediately (p < 0.001) and after 10-minute (p = 0.001) the protocol compared to resting values. CMEP and Mmax did not show significant change relative to resting values (P = 0.38, P = 0.09).

Discussion
Based on data obtained looks at phenomenon of spread fatigue from upper limb to lower, supraspinal centers involved. Moreover, this supraspinal fatigue considerable time needed for recovery.

PREVALENCE AND RISK FACTORS OF MTSS IN PETE STUDENTS

BIEKENDAAL, S., FOKKER, Y.M., PLOMPS, S., STUBBE, J.H.
AMSTERDAM UNIVERSITY OF APPLIED SCIENCES

Introduction
Medial Tibial Stress Syndrome (MTSS) is one of the most common overuse injuries in the lower extremities. MTSS often leads to long lasting complaints and reduced ability to participate in sport activities. This study aims to investigate the prevalence of MTSS and risk factors associated with MTSS in Physical Education Teacher Education (PETE) students.

Methods
A prospective study design was used. All subjects were first year PETE students and were followed from September to December 2016. Prior to the start all students underwent a physical screening which consisted of the following tests: the navicular drop test, hip external and internal range of motion (ROM), hip adduction and abduction strength, shin palpation for edema and pain, 3000 meter run test, and measurement of body height and weight. During the follow-up period students filled out a MTSS score questionnaire (scale: 0-10, with 0
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as the lowest and 10 as the highest severity score) every 5 curricular weeks. The association between risk factors and MTSS injury risk was assessed using univariate logistic regression analysis for dichotomous variables (gender, MTSS history, shin pain, shin edema) and an independent samples t-test for continuous variables (navicular drop, height, weight, fat percentage, running performance, hip ROM, hip strength).

Results
A total of 257 subjects with a mean age of 19.6 (SD=2.2) for men (N=219) and 18.8 (SD=1.5) for woman (N=70) participated in this study. Preliminary results demonstrated a prevalence of MTSS of 7.2% prior to the start of the year. During the follow-up period prevalence increased to 15.7%. The average severity score was 2.4 (SD=2.1). At the end of the follow-up period 23.3% (N=60) of the PETE student suffered from MTSS.

The following factors were associated with MTSS: gender (women; OR=3.1, CI=1.6-5.7, p<.01), a history of MTSS (OR=8.6, CI=3.9-18.9, p<.01), pain at shin palpation (OR=2.7, CI=1.4-4.5, p<.01), and shin edema (OR=2.6, CI=1.3-5.9, p<.01). Significant differences between the MTSS and non-MTSS groups were found in the navicular drop (p<.01) and body height in men (p<.05). No significant differences were found for age, BMI, body length for women, body weight, fat percentage, 3000 meter running performance, hip exorotation ROM, hip endorotation ROM, hip abduction strength, and hip adduction strength.

Discussion
The prevalence of MTSS in PETE students is relatively high. Relevant risk factors are gender (women), a history of MTSS, shin pain at palpation, shin edema, navicular drop, and body length in men. These factors can be used to improve screening methods for identifying PETE students at risk for MTSS.

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WHY DO YOU COME TO PRACTICE? A QUALITATIVE STUDY OF MEMBERSHIP RETENTION IN A GERMAN SPORT-FOR-ALL VOLLEYBALL CLUB
ZAVADSKA, A., GIEL, T.
GERMAN SPORT UNIVERSITY COLOGNE

Introduction
There is an ongoing problem with recruitment and retention of members in sport clubs in Germany and since volleyball is also not the most popular sport in Germany (Petry & Hallmann, 2014), the challenge to keep young volleyball players in a sport club becomes extremely difficult. Little research has been conducted on how to retain members within a sport-for-all club as most research focuses on performance-oriented clubs or business entities.

Methods
A qualitative, exploratory research approach was chosen to find out what makes youth volleyball players that are members of a German sport-for-all club to come to practice as well as what the club can do to retain those players as members. 8 youth volleyball players from a Cologne-based sport-for-all club were interviewed and provided right insight into their behavior. Furthermore, the refined Sport Commitment Model by Scanlan et al. (2009) was adapted and a conceptual model of practice attendance and membership retention in a sport-for-all club was developed.

Results
The findings of this study show that the reasons why youth volleyball members of a sport-for-all volleyball club come to practice are because they want to have fun while playing with people they feel comfortable with and can use practice as distraction from everyday life and improve individually.

Discussion
The strategies that German sport-for-all clubs should use to retain its members need to focus on: (1) providing adequate number of players per team; (2) good coaching; (3) good equipment; (4) gym locations within the proximity of members’ school and house; (5) (good) communication through social events; (6) implementing member feedback; (7) attracting members through word-of-mouth; and (8) organizing events at local volleyball facilities. Future research should focus on using longitudinal studies with many measurement points to provide a thorough comparison of reasons why adolescents retain their membership and how managers of sport-for-all clubs can attract more members.

THE INFLUENCE OF EGO DEPLETION ON SPORTING PERFORMANCE: A META-ANALYSIS
XIANG, M.Q., LI, L.M., HU, M.
GUANGZHOU SPORT UNIVERSITY

This meta-analysis examined the effect of ego depletion, as well as potential moderators, on sporting performance. A search of relevant literature in both Chinese and English databases yielded a total of 31 papers (n = 1613 participants), which were all included in the meta-analysis. The results revealed that: (1) There was a moderate effect of ego depletion on sporting performance (d = 0.55, 95% CI [0.39, 0.71]), although this might be overestimated due to publication bias. (2) The effect of ego depletion on sporting performance was not moderated by the type of participant or sporting task, but was moderated by the type of ego depleting task and stress manipulation used. (3) There was no significant effect found for ego depletion on subjective perceived exertion, heart rate, or EMG activation in the sporting tasks. These findings support the generalizability of Baumeister’s Strength Model of Self-Control, as well as its integration with Eysenck and colleague’s Attention Control Theory. Future research should attempt to standardize the experimental conditions employed, and explore interventions designed to mitigate against ego depletion effects in sport.