Non-compliant training loads and undetected health problems may cause serious health disturbances, which may even lead to sudden death. PHE of young athletes assures the early recognition of health problems and properly timed restriction from sports activities provides safety in sporting.

**PURPOSE:** To establish the most common health problems in young athletes and to analyse the associations between confirmed diagnosis and athletes’ age, anthropometric characteristics, training load.

**METHODS:** Young athletes (n=1479) in the age range from 7 to 19 years (70% boys), who were involved in 54 different sports disciplines (training > 5 h/week) were screened during 8 consecutive months in the Sports Medicine Centre, Tartu University Hospital. PHE consists of family and personal history, physical examination, 12-lead ECG. In case of positive findings, further examinations were carried out, e.g. an exercise test, echocardiography etc. The ICD-10 was used for classification of health problems. For statistical analysis, descriptive analysis, χ² - test and correlation analysis were used.

**RESULTS:** In 830 (56%) young athletes, diseases or related health problems were established. The most common health condition problems were related to musculoskeletal, cardiovascular and endocrine system - 41%, 30% and 11%, respectively. The health problems were more prevalent in ages 13 to 17 years and in track and field, football and volleyball sports disciplines. The participation restrictions were applied in 171 (11.6%) young athletes (68% boys); in one case the athlete was disqualified from a certain sport. Cardiovascular (46%), musculoskeletal (29%), and respiratory (12%) conditions were most frequent for participation restrictions. Correlation analysis revealed significant positive associations between male sex, age and cardiovascular health condition problems.

**CONCLUSIONS:** Our study results reveal a relatively high prevalence of health problems related to the musculoskeletal and cardiovascular system in young athletes. The main reason for the participation restriction is related to the cardiovascular system. Further descriptive studies in larger cohorts are needed for a better understanding of sports-related health problems.

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**CONCLUSIONS:** The most typical form of ultramarathon associated visual impairment appears to be a painless clouding of the vision due to corneal edema, which is self-limited but tends to recur in certain runners. A history of refractive surgery experienced a mean of 7.0 episodes. Compared with controls, runners with visual impairment were nearly twice as likely (23.7% vs. 12.1%) to have had refractive surgery (p<0.001). Corneal edema was the most frequent diagnosis reported by survey participants who were examined while vision loss persisted. Night running, cold temperatures and a high level of exertion were common factors under which it occurs.

**PURPOSE:** To investigate the characteristics under which ultramarathon-associated visual impairment occurs and seek to identify its physiological basis and risk factors.

**METHODS:** Through an online questionnaire, distributed worldwide to ultramarathon runners, we obtained information from athletes who had experienced vision impairment during an ultramarathon. In this preliminary study, we attempted to characterize this vision impairment: its symptoms, duration and the conditions under which it occurs.

**RESULTS:** Ultramarathon-associated visual impairment was typically characterized as painless clouding of vision that resolved in a median of 6 hours (range 0-48 hours) upon cessation of running. The mean (±SD) distance at which vision impairment occurred was 73 ± 40 km and the 161-km distance was the most frequent race distance (48.3%) in which vision impairment occurred. Visual impairment was recurrent, with a mean of 4.7 episodes among study participants; those with a history of refractive surgery experienced a mean of 7.0 episodes. Compared with controls, runners with visual impairment were nearly twice as likely (23.7% vs. 12.1%) to have had refractive surgery (p<0.001). Corneal edema was the most frequent diagnosis reported by survey participants who were examined while vision loss persisted. Night running, cold temperatures and a high level of exertion were common factors associated with vision impairment. The use of protective eyewear and lubricating eye drops were often listed as helpful preventative strategies.

**CONCLUSIONS:** Exercise affects cortical inhibition & reduces pain in patellar tendinopathy: A randomised cross over trial. Ebonie K. Rio1, Jill Cook1, Dawson Kidgell2, 1Monash University, Hawthorn, Australia. 2Deakin University, Melbourne Burwood, Australia.

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**Board #206**
**Retrospective Review of the Duke University Men's Basketball Team Eye Screening**

Gary L. Legault, Mark Hansen, Terry Kim. Duke University Eye Center, Durham, NC.

*No relationships reported*

The Duke Eye Center has routinely screened the Duke University Men’s Basketball team for the past thirteen years.

**PURPOSE:** To assess the utility and effectiveness of eye screenings on young healthy athletes.

**METHODS:** Retrospective review of the eye screening cards of the players from 2001-2011. Visual acuity, intraocular pressure, portable slit lamp exam and undilated direct ophthalmoscopy were recorded for each subject and analyzed. Any patient with an abnormality during screening received a comprehensive exam while vision loss persisted. Night running, cold temperatures and a high level of exertion were common factors under which it occurs.

**RESULTS:** A total of 60 players were screened. 14 out of 60 (23%) of athletes were contact lenses. 9 out of 60 (15%) of athletes had uncorrected refractive error. 6 out of 60 (10%) of athletes were diagnosed as glaucoma suspects.

**CONCLUSIONS:** Eye screening of healthy athletes is beneficial to identify refractive error and glaucoma suspects as well as to provide education on contact lens hygiene.

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**Board #207**
**Preliminary Investigation of Ultramarathon-Associated Visual Impairment**

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*No relationships reported*

**PURPOSE:** To investigate the characteristics under which ultramarathon-associated visual impairment occurs and seek to identify its physiological basis and risk factors.

**METHODS:** Through an online questionnaire, distributed worldwide to ultramarathon runners, we obtained information from athletes who had experienced vision impairment during an ultramarathon. In this preliminary study, we attempted to characterize this vision impairment: its symptoms, duration and the conditions under which it occurs.

**RESULTS:** Ultramarathon-associated visual impairment was typically characterized as painless clouding of vision that resolved in a median of 6 hours (range 0-48 hours) upon cessation of running. The mean (±SD) distance at which vision impairment occurred was 73 ± 40 km and the 161-km distance was the most frequent race distance (48.3%) in which vision impairment occurred. Visual impairment was recurrent, with a mean of 4.7 episodes among study participants; those with a history of refractive surgery experienced a mean of 7.0 episodes. Compared with controls, runners with visual impairment were nearly twice as likely (23.7% vs. 12.1%) to have had refractive surgery (p<0.001). Corneal edema was the most frequent diagnosis reported by survey participants who were examined while vision loss persisted. Night running, cold temperatures and a high level of exertion were common factors associated with vision impairment. The use of protective eyewear and lubricating eye drops were often listed as helpful preventative strategies.

**CONCLUSIONS:** The most typical form of ultramarathon-associated visual impairment appears to be a painless clouding of the vision due to corneal edema, which is self-limited but tends to recur in certain runners. A history of refractive surgery is significantly associated with ultramarathon-associated visual impairment. Supported by the Western States Endurance Run Foundation.
CONCLUSIONS: M patients have decreased affective response and increased perceived exertion response to a physiologically equivalent, moderate-intensity AE session compared to fitness-matched healthy subjects. These results have implications regarding exercise prescription for M patients.