**2D15-3 Increase in salivary taurine concentration in soccer players after repeated soccer matches**

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**Purpose:** The purpose of the present study was to investigate whether repeated intense exercise-induced fatigue increases salivary taurine concentration.

**Methods:** Forty young male soccer players (21 ± 1 years, 173.8 ± 0.1 cm, 65.8 ± 0.1 kg) participated in a soccer match program for 3 repeated days. To detect fatigued subjects, we measured awakening heart rate (HR) and body mass (BM) before and after program. We also collected saliva in all subjects for testing salivary taurine concentration and salivary secretory immunoglobulin A (slgA) secretion rate (salivary flow rate × salivary slgA concentration). We compared changes in salivary taurine concentration and salivary slgA secretion rate in non-fatigued (NF: n=15) and fatigued (F: n=25) groups, which were divided by the changes (cut off values) in HR and BM.

**Results:** In the F group, salivary slgA secretion rate was significantly decreased after repeated soccer match. Then, salivary taurine concentration in the F group was significantly increased. Furthermore, there was a significant correlation between changes in salivary slgA and taurine concentrations.

**Conclusion:** Our present results suggested that repeated soccer matches-induced fatigue increases salivary taurine concentration in young soccer players.

**Key words:** fatigue, saliva, soccer, taurine

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**2D15-4 Evaluation method for sport climbing-specific forearm endurance by blood lactate concentration**

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**Purpose:** While performing sport rock climbing, upper extremity muscular endurance is a critical component. I investigated the changes in blood lactate concentrations and other non-invasive cardiovascular parameters during the time-recruiting hanging task, which designed as a standard protocol for estimating climbing-specific forearm endurance, in non-climbers and climbers.

**Methods:** Seven male non-climbers and 10 male climbers performed a time-recruiting two-handed hanging task until the maximum exertion or the subject fall from the apparatus, and the changes in blood lactate concentration, heart rate, blood pressure, and rate of perceived exertion during the hanging task were estimated.

**Results and Discussion:** In the climber group, the increase in blood lactate concentration was suppressed in the early phase of hanging session, and the time which blood lactate concentration begins increase (lactate breaking point) significantly correlated with the best on-sight lead climbing grade (R = 0.867, P < 0.05). Furthermore, blood lactate concentration was significantly correlated with heart rate (R = 0.672, P < 0.0001), double product (R = 0.584, P < 0.0001) and rate of perceived exertion (R = 0.624, P < 0.0001). Our results suggest that the estimation of lactate breaking point during an incremental hanging task is a valid method for assessing climbing-specific endurance.