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Ankle Joint Trauma During NCAA Football Games On Artificial Turf And Natural Grass Surfaces

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Disclosures: **J.L. Mitton:** Enter Name of Ineligible Company with Whom You Have a Financial Relationship; FieldTurf, USA; Enter the Nature of the Financial Relationship; Consultant.

Trauma to the ankle joint can be detrimental to an athlete's health and performance. However, limited longitudinal research has adequately examined ankle trauma on various field surfaces at the collegiate level of play. **PURPOSE**: To quantify ankle trauma during NCAA college football games on heavyweight artificial turf and natural grass. **METHODS**: A total of 44 universities participated over 19 seasons (2006-2024) across all NCAA Football Bowl Subdivision conferences. Outcomes of interest included injury severity, joint location, primary type, mechanism, category, situation, occurrence, player and skill position, imaging and surgery, field and environmental conditions, and turf age. Injury incidence rates [IIR, (95% CI)] were calculated as injuries per 10 games.
RESULTS: Of the 2564 games documented, 1255 occurred on a heavyweight (≥9.0lbs/ft²) artificial infill system, and 1309 games on natural grass. In sum, of 10623 total injuries, 1389 ankle injuries were documented with 672 occurring on artificial turf, and 717 on natural grass. MANOVAs indicated significant surface effects by injury severity ($F_{2,1386}$ = 9.844; P <.001), primary type of trauma ($F_{3,1385}$ = 7.528; P <.001.), injury category ($F_{2,1386}$ = 2.699; P = .044), skill position ($F_{7,1381}$ = 2.464; P = .012), imaging and surgery ($F_{4,1384}$ = 8.763; P < .001), temperature ($F_{6,1382}$ = 5.646; P = .008), and turf age ($F_{3,1385}$ = 5.570; P < .001). Post hoc analyses indicated significantly (p < .05) lower incidence of substantial [1.4 (1.2-1.6) vs 1.7 (1.6-1.9)] and severe [0.1 (0.0-0.2) vs 0.4 (0.3-0.5)] trauma, less ligament tears [0.1 (0.0-0.1) vs 0.3 (0.2-0.4)] and shoe surface-noncontact trauma [0.4 (0.3-0.5) vs 0.7 (0.5-0.8)], injuries to receivers [0.5 (0.4-0.7) vs 0.8 (0.7-1.0)], MRI's [0.3 (0.3-0.5) vs 0.7 (0.6-0.9)], and surgical procedures [0.1 (0-0.1.0) vs 0.3 (0.2-0.4)], during hotter temperatures [1.1 (1.0-1.3) vs 1.6 (1.4-1.8)], and on new fields [0.6 (0.5-0.7) vs 0.8 (0.7-1.0)] while competing on the heavyweight artificial turf surface as compared to natural grass, respectively. No significant differences (p > .05) in specific ankle joint locations were documented between surfaces.
CONCLUSIONS: Findings indicate that more extensive ankle trauma occurred on natural grass than on a heavyweight artificial infill system during collegiate play.

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Assessment Of Thermal Asymmetries In Professional Soccer Players According To Field Position

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(No relevant relationships reported)

PURPOSE: Infrared Thermography is a valid and non-invasive tool to evaluate skin temperature. Analyzing changes in temperature in response to physiological processes is important to detect fatigue and risk factors for injury. The main aim of this study was to assess thermal asymmetries (TA) in the rectus femoris (RF) and biceps femoris (BF) in professional soccer players according to position.
METHODS: Thirty-seven professional soccer players, 19 males (age = 16.1 ± 0.6 years; height = 1.76 ± 4.9 cm; body mass = 63.4 ± 15.6 kg; BMI = 20.5 ± 5.0) and 18 females (age = 22.3 ± 3.7 years; height = 1.64 ± 5.0 cm; body mass = 58.6 ± 15.2 kg; BMI = 21.5 ± 5.4). TA was assessed in bilateral RF and BF during the competitive period (CP) and transition period (TP). Infrared thermography and ThermoHuman® software were used to analyze the average temperature values for each muscle and bilateral thermal differences. Descriptive statistical analyses were performed. The Wilcoxon signed-rank test was used to analyze the differences between CP and TP. The significance level was set at p<0.05. Statistical analysis of the data was performed using version 25 of Statistics Software Package®(SPSS® Inc., Chicago, IL, EE. UU.).
RESULTS: For the men's team, the TA in the RF was 0.19°C ± 0.14 during the CP and 0.28°C ± 0.27 during the TP; in the BF, TA was 0.16°C ± 0.15 during the CP and 0.24°C ± 0.28 during the TP. For the women's team, the RF was 0.22°C ± 0.20 in the CP and 0.28°C ± 0.33 in the TP; the BF was 0.27°C ± 0.3 in the CP and 0.22°C ± 0.17 in the TP. No significant differences were found between the competitive and transition periods in the men's team in RF (p = 0.33) and BF (p = 0.64); and in the women in RF (p = 0.68) and BF (p = 0.33). The TA by position were as follows: goalkeepers: RF = 0.09°C ± 0.06; BF = 0.16°C ± 0.13; defenders: RF = 0.12°C ± 0.17; BF = 0.19°C ± 0.21; midfielders: RF = 0.27ºC ± 0.29; BF = 0.29ºC ± 0.29; forwards: RF = 0.24ºC ± 0.15; BF = 0.21ºC ± 0.13.
CONCLUSIONS: Male players have higher TA in the RF and BF during the transition period. Female players have higher TA in the RF during the transition period and in the BF during the competitive period. In relation to position on the field, midfielders have higher TA in the RF and BF. Performing assessments during the different periods of the season and according to position on the field facilitates personalization of training and recovery.

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UTMB Mont-Blanc: Photoprotection Behaviors Among Endurance Athletes

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BACKGROUND: Skin cancer is one of the most common and preventable malignancies. Ultraviolet (UV) light exposure is a leading risk factor. Endurance athletes, who spend substantial time outdoors training and competing, face increased risk, yet little is known about their UV protection behaviors. **PURPOSE**: Evaluate sun exposure and protective behaviors among UTMB Mont-Blanc endurance athletes using the Sun Exposure and Protection Index (SEPI). **METHODS**: A cross-sectional study of 2,535 athletes ≥18 years who electronically completed the SEPI, a validated two-part instrument to assess sun habits and protection behaviors, in English or French, before or during race week. SEPI 1 evaluates sun exposure/protection habits (0-32; higher = riskier behavior). SEPI 2 evaluates propensity to increase sun protection (0-20; higher = lower propensity). Athletes' scores were calculated for SEPI 1 and 2. One-way ANOVAs compared SEPI 1 and 2 by self-reported sex, Fitzpatrick skin type, age group, race event, and athlete type. Post-hoc Tukey's HSD tests studied pairwise differences. **RESULTS**: Overall mean SEPI 1 score was 10 (SD 4) and SEPI 2 score 6 (SD 4). Scores varied by skin type, age, race event, and athlete type (all p<0.05), but not by sex (p>0.9). Athletes with medium/darker skin scored 1.1 pts higher in SEPI 1 (p<0.001, 95% CI 0.8, 1.4) and 0.6 pts higher in SEPI 2 (p<0.05, 95% CI 0.2, 0.9) than those with very fair/fair skin. Younger athletes (18-29y) scored 2.6 pts higher in SEPI 1 (p<0.001, 95% CI 1.3, 3.9) and 1.7 pts higher in SEPI 2 (p<0.05, 95% CI 0.4, 3.1) vs the oldest group (60-79y). CCC and UTMB athletes had higher SEPI 2 scores vs MCC and TDS athletes (all p<0.05). Amateur athletes had lower scores than adaptive athletes in both SEPI 1 and 2 (10 vs 12 and 6 vs 8; all p<0.05) and lower SEPI 2 than professional athletes (6 vs 8; p<0.001). **CONCLUSION**: UV exposure risk and protective behaviors vary by skin type, age, event, and athlete type. Athletes with medium/darker skin types, younger athletes, CCC and UTMB participants, and adaptive and