Patients 496 patients (289 male/207 female, 19.7 ± 9.4 years) presented with 561 concussions in 1471 visits.

Assessment of Risk Factors Concussions were subdivided into acute and PCS by time from injury to first appointment.

Main Outcome Measurements Demographics, injury mechanisms, Standardized Concussion Assessment Tool (SCAT) scores, management, and recovery timelines.

Results Acute concussions accounted for 88% of injuries and 12% were PCS. Females (RR=1.4) and adults ≥ 25 years (RR=3.6) were more likely to be diagnosed with PCS. In both, injuries occurred most commonly in hockey, football, and soccer. Family physicians were the most frequent referral provider (58% acute, 76% PCS). Median injury-appointment time was 11.0 days (acute) compared to 182.0 days (PCS). Initial total SCAT symptom score was significantly greater ($p < 0.001$) in PCS (56.0 ± 33.0) compared to acute concussion (39.8 ± 31.9). Therapies (i.e. referral, medication, intervention) were prescribed in 44% of acute injury visits compared to 73% of PCS visits ($\chi^2 = 88.6$, $p < 0.00001$). Recovery timelines for return to work, school, and sport were significantly longer in PCS patients than in those with acute concussions ($p < 0.05$).

Conclusions Athletes who are female and/or ≥ 25 years of age may be at greater risk for PCS progression, requiring closer monitoring and further injury prevention efforts. Considering the number of referrals from family physicians, further concussion education may better optimize initial management and shorten delays in seeking necessary sports medicine consultation.

412 ABSTRACT WITHDRAWN

413 METHODOLOGICAL CONSIDERATIONS FOR QUANTIFYING PRIOR INJURY HISTORY TO STUDY RISK OF INJURY RECURRENCE

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Background History of injury is an important predictor of future injury risk. Accurately assessing injury history can be challenging as it is influenced by the period of time used for the 'lookback window'.

Objective Compare two lookback window definitions to quantify injury history and assess impact of this definition on the association between history of ankle sprain and incident game ankle sprain: 1) '1-year lookback period' limited to a history of ankle sprain within the past year and requiring ≥ 1 year of NBA participation, and 2) 'all-comers lookback period' including any history of ankle sprain regardless of the timing of the prior sprain or the number of years of prior participation.

Design Retrospective Cohort Study

Setting U.S. National Basketball Association (NBA)

Participants All NBA players who participated in at least one game from 2013–14 through 2016–17.

Assessment of Risk Factors History of ankle sprain included prior game and non-game ankle sprains.

Main Outcome Measurements Game ankle sprains were obtained from the audited NBA electronic medical record, which is standardized across all 30 teams.

Results Across this 4-season study, 554 game ankle sprains were reported among 946 players and 122,010 player-games. Using the primary definition, players with a history of ankle sprain in the past year were 1.41 (95% CI 1.13, 1.74) times as likely to sustain an incident game ankle sprain, relative to players with no history of ankle sprain. These results are consistent with prior research and pathobiology of ankle sprain. In contrast, the 'all-comers lookback period' definition led to an entirely different conclusion with a null result (IRR=1.01, 95% CI 0.80, 1.27).

Conclusions In this analysis, accounting both for a defined exposure time via a fixed 1-year lookback period and for the recency of the prior sprain(s) yielded robust and interpretable results.

414 POPULATION TESTING FOR COVID-19: AN APPROACH FOR INFECTION PREVENTION

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Background Population screening with highly sensitive diagnostic tools, such as nucleic acid amplification testing (NAAT), can enable early identification and isolation of cases and reduce transmission of SARS-CoV-2.

Objective To describe the results of a rigorous, large-scale COVID-19 testing and monitoring program with confirmatory processes and adjudication of positive results.

Design Descriptive Epidemiology Study

Setting 32 U.S. National Football League (NFL) Clubs during the 2020 season

Participants NFL players and staff

Methods The NFL/NFL Players Association instituted a COVID-19 Testing and Surveillance Program for the 2020 Season, which included daily testing for players and staff, full medical follow-up and adjudication of cases. Clinical adjudication was based on subsequent daily testing, symptoms, and clinical history; persons remained in isolation during adjudication.

Results Between August 1 and November 14, 2020, a total of 632,370 RT-PCR tests were administered to 11,668 individuals; 270 (2.4%) confirmed cases were observed. PPVs of the initial positive result ranged from 73–82% across RT-PCR platforms. Initial positive results were positive on re-processing 61–79% of the time. PPV increased when both results were positive to $>95\%$; however, initial positives that were negative on confirmatory processing resulted in true cases a portion of the time, depending on machine and population prevalence. High Ct values (33 to 37) could indicate onset of infection.