

processes were assessed using Pearson correlation. Framework and content analysis were used to qualitatively explore PHCT perceptions of teamwork effectiveness.

**Results** Mean PA during match congestion was 78.1% (95% BCa: 76.2, 80.4) compared with 84.2 (95% BCa: 80.6, 87.3) during uncongested periods. There were significant associations between match frequency and PA ( $r = -0.68$ ; 95% BCa: 0.32, 0.93;  $p = 0.008$ ) and PHCT processes and PA ( $r = 0.53$ ; 95% BCa: 0.09, 0.89;  $p = 0.035$ ). Having more PHCT meetings ( $r = 0.46$ ; BCa 95%: 0.22, 0.82;  $p = 0.048$ ) and greater satisfaction with those meetings ( $r = -0.41$ ; BCa 95%: 0.04, 0.07;  $p = 0.043$ ) were associated with higher PA, irrespective of match frequency. During match congestion the PHCT reported issues relating to resources and task co-ordination that negatively impacted their processes.

**Conclusion** The structure and processes adopted by a PHCT in professional football are related to PA, reflecting the influence of teamwork effectiveness. These findings have implications for injury prevention and management in professional football.

#### 425 ATTITUDES, BELIEFS, AND BEHAVIOUR TO THE ADDUCTOR STRENGTHENING PROGRAMME IN MALE PROFESSIONAL FOOTBALL: SUCCESSFULLY ADOPTED, BUT USUALLY MODIFIED

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**Background** The Adductor Strengthening Programme (ASP) is the first groin specific prevention programme proven to reduce the risk of groin problems in male football. Widespread dissemination of the programme and its preventative effect is recommended, however, successful implementation require researchers acquiring comprehensive knowledge of the implementation context. Using the Reach Effectiveness Adoption Implementation Maintenance (RE-AIM) framework is recommended for this procedure.

**Objectives** First, to investigate delivery agents' attitudes, beliefs, and behaviour regarding the ASP using the RE-AIM framework. Second, to present a 'best practice' protocol based on the reported usage of the ASP in a professional team setting.

**Design** Descriptive cross-sectional.

**Setting** Norwegian male professional football teams.

**Participants** The primary delivery agent of injury prevention exercise programmes in each team ( $n=32$ ).

**Intervention** Survey using a pilot tested questionnaire.

**Results** Twenty-nine (91%) participants responded. All respondents (100%) were familiar with the ASP and its potential to mitigate the burden of groin problems. All delivery agents (100%) adopted the ASP, however, only 10% used it in accordance with the evidence-based protocol. The main modifications were that players in 72% of the teams were instructed to perform a non-progressive number of repetitions during pre-season, and 86% of the teams performed more sets, but fewer repetitions per set during in-season. In total, 97% of delivery agents planned to continue using the

ASP in the subsequent season. The two most stated reasons for using the ASP, were first, its documented injury preventive effect and second, that it doesn't require any additional equipment.

**Conclusion** The delivery agents had positive attitudes and beliefs to the ASP. Moreover, they widely adopted and planned to maintain its usage in the next season. Most of the delivery agents modified the original ASP protocol, which warrant further investigations.

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#### THE ASSOCIATION BETWEEN COVID-19 AND PHYSICAL PERFORMANCE IN PROFESSIONAL FOOTBALL PLAYERS: A PROSPECTIVE COHORT STUDY

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**Background** COVID-19 substantially impacts cardiorespiratory functioning, potentially affecting physical performance of elite athletes.

**Objective** To investigate the association between COVID-19 and physical performance in elite male football players.

**Design** A prospective cohort study during the first half of the 2020–2021 season.

**Setting** Belgian professional football.

**Participants** 84 players of three elite football teams.

**Assessments** Strength tests (Nordbord and Groinbar), vertical jump tests (Squat jump and Countermovement jump) and the YoYo Intermittent Recovery test - Level 1 (YYIR1) were assessed at fixed time intervals throughout the season. Polymerase chain reaction (PCR) testing was performed before each official game to detect COVID-19 infection.

**Main Outcome Measurements** Athletic performance was evaluated by within- and between group comparison.

**Results** Twenty-two subjects tested positive for COVID-19 during the follow-up period. When comparing heart rate (HR) values (normalized to the athlete's maximal HR) during YYIR1 between formerly infected players and healthy controls of the first testing after infection ( $52 \pm 11.23$  days after positive PCR testing), a significantly higher HR was found in formerly infected players at 3 minutes ( $p=0.017$ ) and a trend towards significance was found at 6 minutes ( $p=0.061$ ). These in-between group differences were resolved at the second testing after infection ( $127.62 \pm 33.10$  days after positive PCR testing). When comparing the YYIR results before and after infection within the group of infected players, trends towards significantly higher HR at 3 ( $p=0.057$ ) and 6 minutes ( $p=0.068$ ) were seen, with no residual within group differences at the second testing after infection. Interestingly, none of the strength and vertical jump tests presented any association with COVID-19 infection.

**Conclusions** Intermittent aerobic endurance capacity evaluated by the YYIR1 test was established to be significantly lower in professional football players previously infected with COVID-19. These decrements appeared to resolve with time.