

Oral Presentation

Intervention Studies

0490 A RANDOMISED CONTROL CROSSOVER TRIAL OF A THEORY BASED INTERVENTION TO IMPROVE SUN-SAFE AND HEALTHY BEHAVIOURS IN CONSTRUCTION WORKERS: STUDY PROTOCOL

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Exposure to sunlight can have both positive and negative health impacts. Excessive exposure to ultra-violet (UV) radiation from the sun can cause skin cancer, however, insufficient exposure to sunlight has a detrimental effect on the production of Vitamin D. In the construction industry there are already proactive behaviours for safety onsite, but sun-safety and health remains a low priority. There is limited research in understanding the barriers to adopting sun-safe behaviours and the association this may have with Vitamin D production. This paper reports the study protocol for a text messaging (SMS) and supportive smartphone app intervention, which aims to reduced UV exposure and promote appropriate dietary changes to boost Vitamin D intake. Approximately 60 adult construction workers will be recruited across Scotland and southern England. Randomisation to the intervention will occur at site level and participants will receive both the control (no text service) and intervention (daily text message and supportive app). The intervention messages will be delivered daily to participant's smartphone; they will also be sent a link to download the supportive app. There will be three waves of data collection across the year, each study epoch lasting 21 days (intervention messages sent on workdays only). The primary outcome measure is Vitamin D level (using blood spot sampling) this will be taken at the start and end of each 21 day cycle (control and intervention). This study will provide important information about the effectiveness of a technology-based intervention to promote sun-safe and healthy behaviours amongst outdoor construction workers.

Oral Presentation

Neurological Effects

0491 BRAIN HEALTH AND AGEING IN RETIRED RUGBY PLAYERS, THE BRAIN STUDY

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Evidence is accumulating on the possible increased risks of neurodegenerative diseases in former contact sport athletes. Each contact sport – with different protections and different playing dynamics – exposes its players to different types of potential

traumas. Evidence suggest that these are not necessarily comparable in terms of pathophysiology, and hence in terms of their potential long-term adverse effects on health. Increasing evidence on poorer general and neurological health among professional sportsmen exposed to repetitive concussions is accumulating; however there is little evidence from rugby players specifically.

This study is designed to assess the associations between history of concussion and general and neurological health in retired elite rugby players aged 50 years or more. We are recruiting a sample of approximately 200 retired rugby players aged 50 years or more and collecting a number of general and neurological health-related outcome measures via validated tests, in addition to biomarkers of neurodegeneration (neurofilaments and tau). We will also carry out a GWAS. This study will investigate the associations between concussion during the rugby career and subsequent measures of healthy ageing and subtle neurological and cognitive impairment. This evidence will be further explored using biomarkers and genetic characteristics of the participants, and investigating which playing history characteristics may be more relevant.

Thus, the study will estimate the burden of physical and neurological health of retired rugby players and will provide initial evidence on possible associations between rugby-related concussion and subsequent general and neurological health. This will both inform current policy, and inform the design of in-depth prospective studies if required.

Oral Presentation

Exposure Assessment

0492 ASSESSMENT OF EXPOSURE TO SUB-CONCUSSIVE HEAD IMPACTS IN FORMER PROFESSIONAL SOCCER PLAYERS

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There is a lack of information on the most appropriate way to assess exposure to sub-concussive head impacts from heading footballs. In terms of relevance for future potential cognitive effects amongst former professional footballers. Reliable quantification of exposure is key to undertaking informative epidemiological studies of cognitive function or neurodegenerative effects amongst former players and is a prerequisite for the design of appropriate interventions to prevent risk of disease. We propose to identify the potential determinants of exposure of chronic sub-concussive head impacts due to heading a football, and how these might relate to the putative disease processes of interest. Information about frequency and intensity of impacts will be collected retrospectively using interviews with subjects, consultation with a panel of former players, analysis of available records, and archive video of games. Important changes that may have affected exposure over time, such as the weight of balls and the pattern of play, will be identified. We will integrate these data into one or more metrics for energy transfer and/or acceleration from head impacts, based on a biomechanical model of the impact process.