



2022 Sports Medicine Australia Conference Poster Abstracts

(P2)

Headgear does not prevent sport-related concussion: a systematic review and meta-analysis of randomized controlled trials

W.S.A. Al Attar

Department of Physical Therapy, Faculty of Applied Medical Science, Umm Al Qura University, Saudi Arabia

Discipline of Exercise and Sport Science, Faculty of Medicine and Health Sciences, The University of Sydney, Australia

Department of Sport, Exercise and Health, Faculty of Medicine, University of Basel, Switzerland

Introduction: Sport-Related Concussion (SRC) is caused by a strong impact to the head that leads to neurological symptoms. Within the sporting community it is a widely held belief that Headgear (HG) protects against SRC leading some Australian football, soccer, and rugby clubs to mandate its use. The aim of this study was to evaluate the effectiveness of HG in reducing the incidence of SRC among athletes.

Methods: This systematic review with meta-analysis was based upon the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A systematic search for relevant studies published from 1985–2022 using the following databases: Cochrane Library, MEDLINE, AMED, PubMed, Web of Science, and PEDro was conducted. The keywords used in the search strategy were 'Headgear', 'Sport-Related Concussion', 'head injury', 'athlete', and variations of these search terms. Included studies had to be randomized controlled trials using HG for athletes with the primary outcome being SRC rate. There were no restrictions of age or playing level. The random-effects model by the RevMan Meta-Analysis software (version 5) was used in analysing the extracted data.

Results: The pooled results of 6311 athletes and 173383 exposure hours showed 0% SRC reduction per 1000 hours of exposure in the intervention group compared to the control group with an injury risk ratio [IRR] of 1.03 (95% confidence interval [CI] 0.82–1.30, $P=0.79$).

Discussion/Conclusion: This is the first meta-analysis of randomized controlled trials to evaluate the effectiveness of HG in reducing the incidence of SRC among athletes. The results showed no SRC reduction when soccer or rugby players wearing HG during their practice.

Impact/Application to the field: Players wearing HG may play more aggressively due to the feeling that the added head protection limits risk of injury. This meta-analysis demonstrates that HG does not prevent SRC among athletes and therefore the findings from this

meta-analysis does not support the use of HG to prevent SRC in soccer or rugby.

Conflict of interest statement: No conflict of interest of relevance to the submission of this abstract.

<http://dx.doi.org/10.1016/j.jsams.2022.09.110>

(P3)

The FIFA 11+ injury prevention program reduces the incidence of hamstring injury among soccer players: a systematic review and meta-analysis

W.S.A. Al Attar

Department of Physical Therapy, Faculty of Applied Medical Science, Umm Al Qura University, Saudi Arabia

Discipline of Exercise and Sport Science, Faculty of Medicine and Health Sciences, The University of Sydney, Australia

Department of Sport, Exercise and Health, Faculty of Medicine, University of Basel, Switzerland

Introduction: Hamstring injury are among the most common non-contact injuries in sports. In soccer, which is the most popular sport worldwide, hamstring injuries represent between 15 and 50 % of all muscle injuries. Sports injury prevention programs have been showing promising results in reducing the risk of hamstring injury. The purpose of this systematic review and meta-analysis was to investigate the effectiveness of the FIFA 11+ Injury Prevention Program on reducing the incidence hamstring injury among soccer players.

Methods: This systematic review with meta-analysis was based upon the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A systematic search for relevant studies published from 1985–2022 using the following databases: Cochrane Library, MEDLINE, AMED, PubMed, Web of Science, and PEDro was conducted. The keywords used in the search strategy were 'neuromuscular training', 'injury prevention programs', 'FIFA 11+', 'hamstring injury', 'soccer, and variations of these search terms. Included studies had to be randomized controlled trials using FIFA 11+ Injury Prevention Program for soccer players with the primary outcome being hamstring injury rate. There were no restrictions of age or playing level. The random-effects model was used in analysing the extracted data by the RevMan Meta-Analysis software version 5.

Results: The pooled results of 2949 players and 274032 exposure hours showed 66% hamstring injury reduction per 1000 hours of

exposure in the intervention group compared to control group with an injury risk ratio [IRR] of 0.34 (95% confidence interval [CI] 0.21–0.55, $P < 0.0001$).

Discussion/Conclusion: This is the first meta-analysis of randomized controlled trials to evaluate the effectiveness of FIFA 11+ Injury Prevention Program in reducing the incidence of hamstring injury among soccer players. This meta-analysis demonstrates that the FIFA 11+ Injury Prevention Program reduces the incidence of hamstring injury by 66% among soccer players.

Impact/Application to the field: The results showed a 66 % hamstring injury reduction. Therefore, it's recommended that soccer players and coaches implement the FIFA 11+ Injury Prevention Program in their current practice.

Conflict of interest statement: No conflict of interest of relevance to the submission of this abstract.

<http://dx.doi.org/10.1016/j.jsams.2022.09.111>

(P4)

The FIFA 11+ injury prevention program reduces the incidence of groin injury among soccer players: a systematic review and meta-analysis of randomized controlled trials

W.S.A. Al Attar

Department of Physical Therapy, Faculty of Applied Medical Science, Umm Al Qura University, Saudi Arabia

Discipline of Exercise and Sport Science, Faculty of Medicine and Health Sciences, The University of Sydney, Australia

Department of Sport, Exercise and Health, Faculty of Medicine, University of Basel, Switzerland

Introduction: Groin injuries are among the three most common and time-consuming injuries in soccer, accounting for 2-19% of all injuries, with an incidence of 0.1-2.1 injuries per 1000 hours of play. Sports injury prevention programs have been showing promising results in reducing the risk of groin injury. The purpose of this systematic review and meta-analysis was to investigate the effectiveness of the FIFA 11+ Injury Prevention Program on reducing the incidence of groin injury among soccer players.

Methods: This systematic review with meta-analysis was based upon the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A systematic search for relevant studies published from 1985-2022 using the following databases: Cochrane Library, MEDLINE, AMED, PubMed, Web of Science, and PEDro was conducted. The keywords used in the search strategy were 'neuromuscular training', 'injury prevention programs', 'FIFA 11+', 'groin injury', 'soccer, and variations of these search terms. Included studies had to be randomized controlled trials using FIFA 11+ Injury Prevention Program for soccer players with the primary outcome being groin injury rate. There were no restrictions of age or playing level. The random-effects model was used in analysing the extracted data by the RevMan Meta-Analysis software version 5.

Results: The pooled results of 7939 players and 695503 exposure hours showed 48% groin injury reduction per 1000 hours of exposure in the intervention group compared to control group with an Injury Risk Ratio [IRR] of 0.52 (95% Confidence Interval [CI] [0.37, 0.73] $P=0.0001$).

Discussion/Conclusion: This is the first meta-analysis of randomized controlled trials to evaluate the effectiveness of FIFA 11+ Injury Prevention Program in reducing the incidence of groin injury among soccer players. This meta-analysis demonstrates that the FIFA 11+ Injury Prevention Program reduces the incidence of groin injury by 48% among soccer players.

Impact/Application to the field: The results showed a 48% groin injury reduction. Therefore, it's recommended that soccer players and coaches implement the FIFA 11+ Injury Prevention Program in their current practice.

Conflict of interest statement: No conflict of interest of relevance to the submission of this abstract.

<http://dx.doi.org/10.1016/j.jsams.2022.09.112>

(P5)

The FIFA 11+ injury prevention program reduces the incidence of knee injury among soccer players: a systematic review and meta-analysis of randomized controlled trials

W.S.A. Al Attar

Department of Physical Therapy, Faculty of Applied Medical Science, Umm Al Qura University, Saudi Arabia

Discipline of Exercise and Sport Science, Faculty of Medicine and Health Sciences, The University of Sydney, Australia

Department of Sport, Exercise and Health, Faculty of Medicine, University of Basel, Switzerland

Introduction: Knee injuries are among the most common injuries seen in soccer, represent between 10- 50 % of all soccer injuries. Sports injury prevention programs have been showing promising results in reducing the risk of knee injury. The purpose of this systematic review and meta-analysis was to investigate the effectiveness of the FIFA 11+ Injury Prevention Program on reducing the incidence of knee injury among soccer players.

Methods: This systematic review with meta-analysis was based upon the guidelines of the Preferred Reporting Items for Systematic Reviews and Meta-Analyses (PRISMA). A systematic search for relevant studies published from 1985-2022 using the following databases: Cochrane Library, MEDLINE, AMED, PubMed, Web of Science, and PEDro was conducted. The keywords used in the search strategy were 'neuromuscular training', 'injury prevention programs', 'FIFA 11+', 'knee injury', 'soccer, and variations of these search terms. Included studies had to be randomized controlled trials using FIFA 11+ Injury Prevention Program for soccer players with the primary outcome being knee injury rate. There were no restrictions of age or playing level. The random-effects model was used in analysing the extracted data by the RevMan Meta-Analysis software version 5.

Results: The pooled results of 9647 players and 886001 exposure hours showed 46% knee injury reduction per 1000 hours of exposure in the intervention group compared to control group with an Injury Risk Ratio [IRR] of 0.54 (95% confidence interval [CI] 0.43, 0.69, $P < 0.0001$).

Discussion/Conclusion: This is the first meta-analysis of randomized controlled trials to evaluate the effectiveness of FIFA 11+ Injury Prevention Program in reducing the incidence of knee injury among soccer players. This meta-analysis demonstrates that the FIFA 11+ Injury Prevention Program reduces the incidence of knee injury by 46% among soccer players.

Impact/Application to the field: The results showed a 46% knee injury reduction. Therefore, it's recommended that soccer players and coaches implement the FIFA 11+ Injury Prevention Program in their current practice.

Conflict of interest statement: No conflict of interest of relevance to the submission of this abstract.

<http://dx.doi.org/10.1016/j.jsams.2022.09.113>