

## Preventing Sport Injuries: Improving Performance

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Approximately a decade ago, the FIFA Medical Assessment and Research Centre (F-MARC) developed an injury prevention program so-called “The 11” which was aimed to reduce injuries among male and female amateur football players aged 14 years and older. The “11” was designed on the basis of information and data which was available of research on injury and structured as warm-up program to reduce ankle and knee sprains, groin and hamstring strains in football players. The “11” – includes 10 exercises focusing on core stability, balance, dynamic stabilization and eccentric hamstrings strength and the 11th component was fair play. This program initially used in some countries such as New Zealand and Norway. Steffen and coworkers,<sup>[1]</sup> in a randomized controlled trial, investigated the effect of the “11” on injury risk in female youth football and reported no effect of the injury prevention program in the injury risk, probably due to its low compliance with the program. In contrast, Junge and coworkers,<sup>[2]</sup> found a positive effect of the 11 on Swiss amateur football players since 11.5% incidence of match injuries was decreased and because 25.3% incidence of training injuries was declined using the program. It should be noted that before the 11 prevention program, another program called prevent injury and enhance performance (PEP) was used by some athletes and Mandelbaum *et al.*<sup>[3]</sup> reported that this training program may have a direct benefit in minimizing the rate of anterior cruciate ligament injuries in female football players. Since the 11 and

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other program were not very successful at their effectiveness and had some weakness, so they led to an expert group including scientists from the Santa Monica Orthopaedic and Sports Medicine Research Foundation, the Oslo Sports Trauma Research Center and the F-MARC, developed the comprehensive warm-up exercise program.

The new comprehensive prevention program known as “The 11+” and it include important exercises and running exercises and is a favor warm-up program which can be used in matches and training. This program established in 2006. The 11+ consisted of running exercises, strength, balance and jumping exercises and finally speed running with some football-specific movements. This warm-up program “11+” should be implemented, at the initial of training sessions with frequency of at least twice a week for about 20 minutes. This prevention program is also useful to perform prior to matches, but only the running exercises should be performed. Soligard *et al.*<sup>[4]</sup> in a randomized controlled trial investigated the effect of a 11+ on the risk of injuries in female youth football and reported a significant lower risk of injuries overall, overuse injuries and severe injuries. They claimed that the 11+ program can prevent injuries and reduce risk of injuries in young female football players. Brito coworkers,<sup>[5]</sup> reported that 11+ training program improved muscle strength and balance around the knee joint. Since the results of Soligard *et al.*<sup>[4]</sup> cannot be generalized to male player, and also efficacy of

the 11+ program on physical fitness is unknown, Zarei, Alizadehh and Rahnama,<sup>[6]</sup> studied the effectiveness of “11+” program, on injuries and performance of Iranian young male soccer players. Daneshjoo and coworkers,<sup>[7]</sup> recently investigated the isokinetic strength effects of FIFA’s “the 11+” injury prevention training programs on youth professional male soccer players and reported an improvement in isokinetic knee strength in concentric and eccentric mode at different angular velocities in both dominant and non-dominant leg in youth professional male soccer players.

Although, the aforementioned studies are important which have looked at the role played by the 11+ on reducing injuries among youth football players, yet more prospective investigations should be conducted to see if the same results occur. Future research should investigate the importance of the 11+ program in adult football players and also needs to be modified to meet the standards of other sports disciplines. All training program should try to prevent as many sport injuries as possible and help athletes improve performance.

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