The injury rate of dominant leg of soccer players is identical with the non-dominant one

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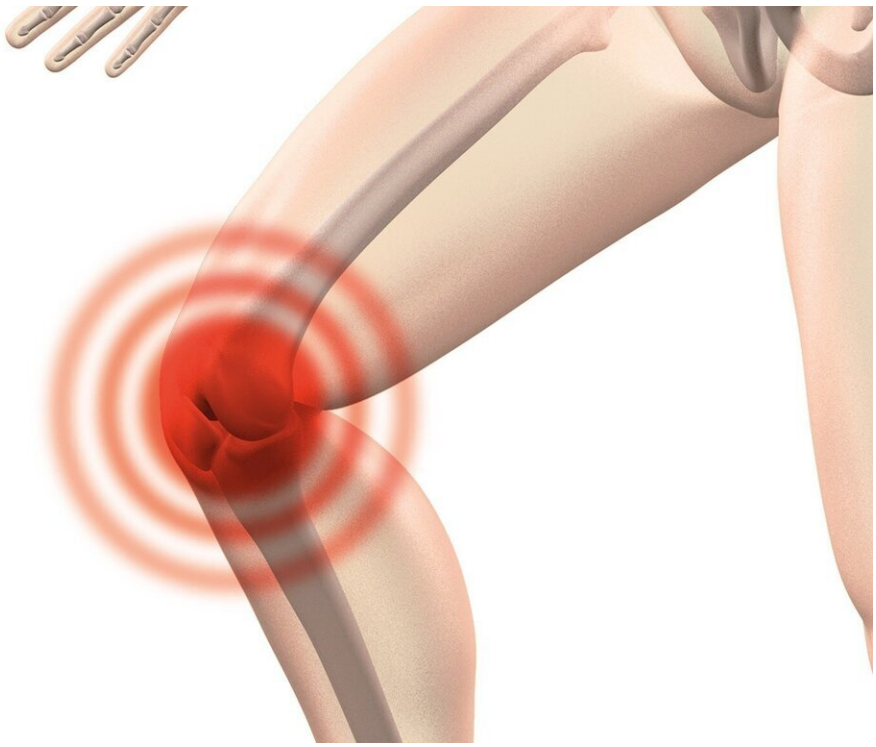

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The severity of knee joints damage in soccer players depends on their age and career duration, and the condition of articular cartilage and meniscus of the dominant (which has a higher mechanical load) and the

non-dominant leg does not differ. However, even pronounced changes can be asymptomatic and do not impair knee joint mobility, as shown by a group of scientists, which included researchers from Sechenov University. The findings which will help interpret the results of players clinical examination more accurately, were published in *Sports Medicine—Open*.

Regular strenuous training is not harmless for professional athletes. They often get injured and, as previous research shows, pathological joint changes are more common than among people of the same age who are not active in sports. Legs experience the major mechanical load in soccer. The dominant, kicking leg is particularly subject to uneven strain and, thus, injuries.

The authors of the study evaluated whether the prevalence and severity of joint damage depends on the age and experience of athletes, as well as if there is any difference in knee injuries between the dominant and the non-dominant leg. They examined 47 professional soccer players aged 19-31. The sample did not include goalkeepers, athletes who previously underwent knee surgery or those who suffered a knee injury in the past three months or were experiencing joint pain at the time of the examination.

Participants were divided into two groups: one included athletes who played soccer for more than 20 years (including sports schools and groups), and the other comprised less experienced players. MRI was used to examine the joints and allowed to obtain the high-resolution images of the joint structures and evaluate the changes in bone and cartilage tissues.

The imaging showed that absolutely all patients had asymptomatic cartilage or meniscus damages. Certain tissue changes were significantly more common in experienced athletes, the others were observed more

often in younger players. The condition of the joint was identical in the dominant and non-dominant legs.

Coauthors of the paper included researchers from Sechenov University: Alexey Lychagin, the head of the Department of Traumatology and Orthopedic Surgery, Eduard Bezuglov, assistant professor of the Department of Sport Medicine and Medical Rehabilitation and the chief doctor of the Russian national football team, and Artemii Lazarev, a 6th-year student of the Faculty of Medicine.

"In my view, the most significant finding of our study is that the vast majority of professional soccer players have asymptomatic cartilage or meniscus damages of the knee joint. These changes are often rather pronounced. For instance, 12.7% of knee joints have grade 4 cartilage damage, and 13.8% have grade 3 meniscus damage. This data can be extrapolated to almost all professional athletes from game sports; it should be considered by doctors when interpreting MRI data after an acute injury and choosing treatment tactics. All studies conducted in this group of players have shown that the surgery negatively affects professional performance and the progression of osteoarthritis. No wonder many well-known sports medicine specialists say that the best surgery is the surgery that did not take place," said Artemii Lazarev.

The study will help to assess the impact of athletes' experience and leg dominance on the condition of the knee joints, and allow to develop injury prevention programs and make injuries diagnostics more accurately.

More information: Eduard Nikolayevich Bezuglov et al, The Effect of Training Experience and Leg Dominance on the Prevalence of Asymptomatic Intraarticular Changes of the Knee Joints in Adult Professional Male Soccer Players, *Sports Medicine - Open* (2020). DOI: 10.1186/s40798-020-00248-9

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