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Letter to the Editor

Is Knee Osteoarthritis an Inevitable Consequence for Athletes after Anterior Cruciate Ligament Injury? A Letter to The Editor

Timothy E. Hewett, PhD[1], Sebastiano Nutarelli, MS[2,3]

[1] Professor, Director of Research, Consultant, Marshall University Orthopaedic Surgery & Sports Medicine, [2] Service of Orthopaedics & Traumatology, Dept. of Surgery, EOC, [3] School of Public Health, Physiotherapy and Sports Science, University College Dublin

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Dear Editors of IJSPT regarding a recent paper published in your esteemed Journal,

We read with great interest the recent study published in IJSPT entitled "Is Knee Osteoarthritis an Inevitable Consequence for Athletes after Anterior Cruciate Ligament Injury?[1] This outstanding paper surmised that “Anterior cruciate ligament injury should no longer be considered solely as an acute traumatic event affecting short-term sports participation, but increasingly as the beginning of a long-term knee joint health condition that may lead to post-traumatic knee osteoarthritis.”

We applaud these brilliant authors for the publication of this important analysis. The authors’ conclusion was that “Sports physiotherapists can play a key role in detecting the early signs of post traumatic knee osteoarthritis (PTOA), while also contributing substantially to secondary prevention and the long-term management of the athlete through tailored rehabilitation strategies and load management implemented within a multidisciplinary framework.” We fully agree with these authors and would like to propose how we can best move the field forward together.

There is strong evidence that indicates that early load management is key to setting solid foundations for the long-term joint preservation, limiting PTAO onset. As per Van Ginckel and colleagues,[2] cartilage in patients with ACL reconstruction (ACLR) who were cleared for return to sport, showed diminished quality and resiliency compared compared to controls. This finding indicates that a potential paradigm shift towards early rehabilitation that targets overall cartilage health through progressive load management based on low impact exercises will be both efficacious and effective in this cohort of patients. High impacts or volume peaks on this qualitatively diminished cartilage in the very initial weeks after ACLR likely plays a role in the development of osteoarthritis.

Watanabe et al.[3] reported that post-traumatic bone edema (PTBE) is a common finding in patients with acute ACL injury, associated with the development of cartilage degeneration. Early dosing with post-operative mechanical loading is pivotal to heal bone edema. Preventive biomechanics focused[4] published scientific literature can guide physiotherapists in revisiting early load progressions when aware of the actual correspondance between a variety of motor tasks (walking with/without crutches. single-leg squatting, ascending/descending stairs, stationary biking, initial jogging, etc.), and patients/athletes body weight, concurrently considering their ability to produce lower limb force to absorb load to protect the knee and other lower extremity joints.

This current report is of major importance in that it shows that decades after ACL injury and reconstruction, significant osteoarthritis appears to be a necessary outcome. In our view, this idea is flawed and the long-term outcomes after ACL injury and reconstruction must not necessarily have to result in an osteoarthritic knee joint. Though we recently reported an umbrella meta-analysis of the current meta-analyses in the existent literature that demonstrated that a third of post-ACL patients showed significant radiographic signs of osteoarthritis of the knee at a decade,[5] we remain optimistic that this outcome is not inevitable.

Sincerely,
Timothy Hewett, PhD
Sebastiano Nutarelli, MS

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