

# Treatment of Athletic Injuries: What We Have Learned in 50 Years

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Over the past 50 years orthopedic surgery and traumatology have been divided into different sectors. Scientific societies, specific journals, books, sub-speciality research groups, congresses and courses, as well as teaching centers have been organized. Sport traumatology must be supported by a complex set of knowledge obtained by applying scientific methodology in order to gain a precise description of reality; we call this “Science.” As Galileo Galilei said “Science separates what we know from what we do not know.”

However, sometimes human activity based on technical solutions, natural skills, or behavior deriving from experience, which is called “Art,” hides Science. Today, in sport traumatology, we must be scientific in our approach. The study of the biomechanics of the human body has led us to the functional biomechanical evaluations of athletes, allowing us to observe different parameters such as the proprioceptive system, joint stability, and muscle strength during sport-specific movements; the biological and tissue mechanics applied to sport as well as the morphofunctional study of athletes. These methods allow us to quantify important parameters before, during, and at the end of the sports

season. On the basis of these parameters we can implement prevention programs and personalize rehabilitation to restore the normal condition of each athlete in case of injury.

In anterior cruciate ligament reconstruction (ACL-R), we do not know exactly the advantages of the different techniques (i.e., single bundle and double bundle) since, as Savio Woo has shown in his studies, so many variables affect the ACL-R as well as the role of associated lesions that significantly influence the outcome of the ACL-R.

Concerning cartilage treatment – I would say that most of the novelties on this topic are pure Art, and few are Science.

Hence, we must be very careful when we promise a rapid return to sport or excellent results in tissue repair, we must respect the laws of tissue biology and the healing process, the athlete’s individual characteristics, as well as the biomechanics of the sport being practiced. Today, after 50 years of sport traumatology, some aspects are Art and some are Science. Our goal must be to make sport traumatology 100% Science. In order to do this, we must use precise scientific methods in planning research projects under the guidance of true scientific commitment.

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