

Return-to-Play after Lower Limb Muscle Injury in Football

The Italian Consensus Conference
Guidelines

Gian Nicola Bisciotti
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Piero Volpi

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Introduction

The “Italian Consensus Conference on Guidelines on return to play after lower limb muscle injury in football” was organized by the Italian Society of Arthroscopy in Milan, on 31 August 2018, with the participation of 66 national and international experts with different medical backgrounds, i.e., orthopedic surgeons (19), sports physicians (7), radiologists (5), rehabilitation physicians (3), sport physiologists (2), general surgeons (2), family physicians (2), physiotherapists (10), physical trainers (15), and psychologist (1).

The selection of the Consensus Conference participants was based on their Hirsch index, the number of publications concerning muscle injuries, and experience in the clinical evaluation, medical treatment, and rehabilitation of MI. The experts did not represent any organizations. All experts who participated, directly or indirectly, in the Consensus Conference must be considered as coauthors of this book. Indeed, without their contribution and participation this book would never have been realized. So we want to thank them sincerely and to remember all their names:

Giampietro Alberti, Alessandro Aprato, Matteo Artina, Alessio Auci, Corrado Bait, Andrea Belli, Giuseppe Bellistri, Pierfrancesco Bettinsoli, Alessandro Bisciotti, Andrea Bisciotti, Stefano Bona, Marco Bresciani, Andrea Bruzzone, Roberto Buda, Michele Buffoli, Matteo Callini, Gianluigi Canata, Davide Cardinali, Gabriella Cassaghi, Lara Castagnetti, Sebastiano Clerici, Barbara Corradini, Cristina D’Agostino, Enrico Dellasette, Francesco Di Pietto, Drapchind Enrica, Cristiano Eirale, Andrea Foglia, Francesco Franceschi, Antonio Frizziero, Alberto Galbiati, Carlo Giammatei, Philippe Landreau, Claudio Mazzola, Biagio Moretti, Marcello Muratore, Gianni Nanni, Roberto Niccolai, Claudio Orizio, Andrea Pantalone, Federica Parra, Giulio Pasta, Paolo Patroni, Davide Pelella, Luca Pulici, Alessandro Quaglia, Stefano Respizzi, Luca Ricciotti, Arianna Rispoli, Francesco Rosa, Alberto Rossato, Italo Sannicandro, Claudio Sprenger, Chiara Tarantola, Fabio Gianpaolo Tenconi, Giuseppe Tognini, Fabio Tosi, Giovanni Felice Trinchese, Paola Vago, Marcello Zappia, Zarko Vuckovich, Raul Zini, Michele Trainini, Karim Chamari.

The “Italian Consensus Conference on Guidelines on return to play after lower limb muscle injury in football” is part of a project that includes a triptych of three “Italian Consensus Conferences” with the other two entitled respectively: “Groin Pain Syndrome Italian Consensus Conference on terminology, clinical evaluation and imaging assessment in groin pain in athlete” and “Italian Consensus Conference on Guidelines for Conservative Treatment

on Lower Limb Injuries in Athlete.” During this Consensus Conference, the invited experts discussed and approved a consensus composed of two sections.

The first section was composed of:

Terminology relating to return to play (RTP).

Return to training (RTT): decision-making process.

RTP: decision-making process.

The role of imaging: in RTT and RTP decisions-making process.

The biopsychosocial model and RTP decisions-making process.

The second section was composed of:

RTT and RTP following hamstring injuries.

RTT and RTP following quadriceps injuries.

RTT and RTP following adductor injuries.

RTT and RTP following soleus-gastrocnemius injuries.

RTT and RTP following short external hip rotator injuries.

RTT and RTP following iliopsoas injuries.

This book represents the summary of the Consensus Conference works and hopes to provide a valuable help to sports physicians interested in this specific area.

Paris

April 30th, 2021

Gian Nicola Bisciotti

Alessandro Corsini

Piero Volpi

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The Italian Consensus Conference on Return to Play After Lower Limb Muscle Injury in Football

1

1.1 Introduction

What is a “Consensus Conference” (CC)? The CC is a methodology for answering the questions related to efficacy, risks, and clinical applications of biomedical or public health interventions. The subjects discussed during a CC represent specific controversies in clinical practice. Furthermore, the aim of a CC is also to orient future research. A CC is carried out through the production of evaluation reports of the scientific literature, discussed by a “jury” made up of health professionals and other professional and social figures. The National Institutes of Health (NIH) developed the CC model in the United States in the 1970s, as a method for addressing complex problems relating to health interventions and for orienting research. In Europe the first CCs were organized in Denmark in the 1980s by the Danish Board of Technology (Danish Commission on Technology). The CC aims at defining the “state of the art” in relationship to a specific care problem, through an explicit process in which scientific information is evaluated and discussed by a “jury.” Such jury is composed not only of health professionals but also of other professional and social members. In recent years CCs have been enriched by an intense specific preparatory activity, which has been entrusted to working groups in charge of preparing in-depth documents.

This has become necessary to overcome the limits and operational difficulties, to concentrate the discussion on all issues in a single day, and to find a consensus from the jury. The documents produced by each group are provided to the members of the jury well in advance before the CC and will form the basis for the discussion. Conversational dynamics is a very important aspect in successful consensus conferences. Some jury members may tend to dominate the conversation. It is a drawback that can be avoided by introducing a (well-trained) facilitator, hence the issue of how can facilitators be assessed. Paradoxically, a CC may even have a negative effect (opposite to its goal). Indeed, a CC could lead the jury members to move to the extreme in their opinions. In other words, the jury members essentially rally around their own view in the presence of opposing views. Another paradox of CCs is their power to mask differences in opinions. The goal of consensus conferences is for the jury members to deliberate and reach a consensus over a particular issue. However, this need to reach a consensus can have the unintended side effect of masking differences in opinion, particularly if some jury members are less outspoken during the discussion. In any case, despite these possible negative aspects, the CC represents a formidable means for the improvement of scientific knowledge.

1.2 The Italian Consensus Conference on Return to Play After Lower Limb Muscle Injury in Football

The Italian Consensus Conference on return to play after lower limb muscle injury in football (Bisciotti et al. 2019), held in Milan on August 31, 2018, was aimed at making the concepts of return to training (RTT) and return to play (RTP) clearer and more objective. Furthermore, the CC tried to identify some weak points concerning both RTT and RTP which may seriously jeopardize their reliability. With this aim in mind, the Italian Society of Arthroscopy organized this Conference in Milan, on August 31, 2018, which saw the participation of 66 national and international experts across several disciplines: orthopedic surgeons (19), sports physicians (7), radiologists (5), rehabilitation physicians (3), sports physiologists (2), general surgeons (2), family physicians (2), physiotherapists (10), physical trainers (15), and psychologists (1).

The selection of experts was based upon their Hirsch index and/or the number of publications concerning muscle injuries in football and/or their experience in the clinical evaluation, medical treatment, and rehabilitation of muscle injuries in football players. The experts did not represent any commercial organizations at the time of the consensus meeting.

Prior to the CC, two senior authors (GNB and PV) performed a narrative review of the literature regarding RTP decision-making process, in sporting activities in general and in football specifically. The review process was conducted as follows:

1. An independent search was performed by both authors, with no language limitation applied.
2. Databases searched were MEDLINE, EMBASE, EXCERPTA MEDICA, Cochrane Central Register of Controlled Trials, and the Cochrane Database of Systematic Review. Gray literature (i.e., conferences, abstracts, thesis, and unpublished reports) was not considered.

Table 1.1 Inclusion and exclusion criteria

<p>Inclusion criteria: <i>P(atient and problem)</i>: RCT, case series studies, and consensus statement investigating lower muscle injuries in sport population. <i>I(ntervention)</i>: Conservative treatment of lower muscle injuries. <i>C(omparison)</i>: Comparison between different types of muscle injuries classification and different types of conservative treatments. <i>O(utcome)</i>: Outcome in terms of time loss injury, level of outcome, level of return to play, complication, and sequelae</p>
<p>Exclusion criteria: <i>P(atient and problem)</i>: RCT, case series studies, and consensus statement investigating lower muscle injuries in a non-sport population. <i>I(ntervention)</i>: Surgical treatment of lower muscle injuries. <i>C(omparison)</i>: Comparison between conservative and surgical treatments. <i>O(utcome)</i>: Not specified outcome in terms of time loss injury, level of outcome, level of return to play, complication, and sequelae</p>

3. Studies that did not meet our inclusion criteria were excluded. The inclusion and exclusion criteria, according to PICO method (Cooke et al. 2012), are shown in Table 1.1.

After the review, the authors produced a comprehensive summary document made up of two distinct sections: (1) RTP decision-making process's general principles and (2) return to training and RTP decision-making process following lower limb muscle injuries. The document was presented to each expert a week ahead of the CC and was considered as the starting point for the discussion. The two senior authors had the role of facilitator (GNB) and chairman (PV) during the CC.

1.3 Consensus Conference Proceedings

The CC was composed of two distinct sections.

The discussion on RTP decision-making process's general principles (Sect. 1.1) was in turn composed of five sub-sections:

1. Appropriateness of the term RTP
2. The return to training decision-making process (RTT decision-making process)
3. The return to play decision-making process (RTP decision-making process)

4. The role of imaging in RTT decision-making and RTP decision-making processes
5. The biopsychosocial model

In the CC, the term “decision-making process” (DMP) refers to the evidence-based criteria utilized for decision on RTT and RTP (Van der Horst et al. 2016, 2017).

The second section was focused on RTT and RTP-DMP following lower limb muscle injuries in football. This discussion addressing RTP-DMP for the lower limb muscle groups involved in football muscle injuries is composed of four sub-sections:

1. RTT and RTP-DMP following hamstring injuries
2. RTT and RTP-DMP following quadriceps injuries
3. RTT and RTP-DMP following adductors injuries
4. RTT and RTP-DMP following soleus-gastrocnemius injuries

Following a Delphi procedure, each document was presented by the facilitator (GNB), a plenary discussion conducted by the chairman (PV) followed, and finally it was approved via a voting process.

The CC participants voted for each document, using a Likert scale of 0–10, where 0 reflected complete disagreement, 5 neither agreement nor disagreement, and 10 complete agreement. The discussions continued until a mean score of >7.5 was reached (Griffin et al. 2016; Bisciotti et al.

2016, 2018; Vanbelle and Lesaffre 2017), and the voting process enabled the chairman to interrupt the discussion if, in his opinion, a final decision could not be reached. The first section document required five voting rounds (for five separate discussions), while the second section document required four voting rounds (for four separate discussions) to reach consensus. Amendments were made after each voting round following discussion among the CC group. Consensus was reached in all cases after each discussion phase (i.e., for each voting round the mean score of >7.5 was reached). The voting results are shown in Tables 1.2 and 1.3.

At the end of the CC, consensus was reached on the following: definition of the terms RTT and RTP in football, the criteria for RTT and RTP in football, the appropriate use of clinical and imaging assessment, laboratory and field tests for RTT following lower limb muscle injury, and the identification of return to play objective criteria following lower limb muscle injury were discussed and approved (level of evidence IV, grade of recommendation D). This book illustrates in detail and thoroughly all the topics discussed and approved during the CC.

Table 1.3 The results of the different voting rounds concerning document 2 (return to training and RTP-DMP following lower limb muscle injuries in football)

	Voting 1	Voting 2	Voting 3	Voting 4
Average score	9.24	9.64	9.54	9.72
Standard deviation (±)	0.49	0.39	0.43	0.35

Table 1.2 The results of the different voting rounds concerning document 1 (RTP-DMP general principles)

	Voting 1	Voting 2	Voting 3	Voting 4	Voting 5
Average score	9.76	9.76	9.80	9.72	9.96
Standard deviation (±)	0.33	0.33	0.30	0.35	0.32

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