INSTITUT INTERNATIONAL DU FROID
INTERNATIONAL INSTITUTE OF REFRIGERATION

Whole-body cryotherapy or cryostimulation

IIR Working Group of Commission C1

TERMS OF REFERENCE

INTRODUCTION

In accordance with Article XIX of the International Agreement concerning the International Institute of Refrigeration (IIR) and articles 15 to 18 of the Internal Regulations of the Scientific Council of the IIR, the setting up of a Commission C1 Working Group (WG) is proposed. The following Terms of Reference (ToR) further define the role of the WP.

BACKGROUND

Whole-body cryotherapy is one mode of cold therapy, during which a subject is exposed to extreme cold for a short time (2 to 4 minutes) in a specialized cold chamber. This method is used to induce physiological and psychological benefits. Little known a few years ago, this therapy has recently got a tremendous interest. According to PubMed, there were approximatively 30 scientific studies concerning this topic before 2010 and there have been over 100 since then. The two most investigated domains are improvements in mental and physical health and improvements in recovery after physical exercise. The populations studied include patients suffering from traumatic, inflammatory or mental diseases, healthy individuals (no sport and no disease), and athletes (all levels) as well as active participants (moderate level of sport activity). In addition to the term “cryotherapy”, the term “cryostimulation” has emerged. Although the cold stimulation is the same, cryostimulation is targeted to subjects with no pathologies (e.g., healthy athletes), whereas cryotherapy involves patients.

Despite the growing interest for this practice, there are still too many missing information concerning the exposure protocols and the technologies used:

- There is no referential regarding exposure protocols and the relationship between temperature, duration, number of repetitions and the treatments' desired effects;
- The temperature during exposure inside the cabins/chambers are most of the time unknown;
- Advices for safety procedures are still lacking.

OBJECTIVES

The working group objective is to elaborate a scientific referential concerning:

- The standardization of exposure protocols in function of individual characteristics and treatment's desired effects;
- The standardization of a measurement method of the exposure temperatures inside all existing WBC devices;
- The safety instructions for exposures to follow;
- The promotion of the WBC methods in all possible fields of application.

In general, the working group should be able to deliver authoritative recommendations based on scientific evidence. The work of the working group could lead to the publication of a practical guide book for WBC users.

Another aim of the working group is to stimulate research collaborations between the members and the development of larger investigations concerning WBC (e.g. multi-centric studies).

ACTIVITIES

The leader and members of the working group will perform the following work:

- Organizing meetings (mainly workshops) for all members;
- Listing and studying current scientific and technical problems;
- Establishing and continuously updating a reference list of research publications on WBC;
- Publishing practical guide books for WBC users in several languages;
- Promoting the works performed and the WBC practice and technologies through particular activities, such as conferences organization, publications in scientific and non-scientific journals, newspapers, magazines and television.

IIR COMMISSIONS INVOLVED

Lead Commission: Commission C1

Cooperating Commissions: A1 and B2

MEMBERSHIP

Each member of the working group must be a researcher, health professional or medical and paramedical personnel (kinesiotherapist, coach, physical trainer, wellness centre operator, and others). All members should be a WBC specialist and/or work in the field of WBC.

WG members shall be either Commission members or private members or representatives of corporate members of the IIR. However, the WG Chair can admit non-IIR members if he/she judges their scientific/professional expertise is necessary to reach the objectives of the WG.

WORKING GROUP LEADERSHIP

Chair: Benoit Dugué, Professeur des Universités, Laboratoire « Mobilité, Vieillissement, Exercice (MOVE)-EA 6314, Faculté des Sciences du Sport, Université de Poitiers, France. E-mail : benoit.dugue@univ-poitiers.fr

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STRUCTURE (optional)

Depending on the decision of the first WG meeting, the working group could include 3 subgroups:

- Subgroup A: Biological effects and therapeutic benefits
- Subgroup B: Metrology and measurements
- Subgroup C: Refrigeration technologies