

3rd International Conference on

SPORTS MEDICINE AND FITNESS

October 05-06, 2017 Barcelona, Spain

*Jordi Desola**Moises Broggi Hospital, Spain*

Hyperbaric oxygenation in sports medicine: from the empiricism to the evidence; A critical review on indications, safety and rational application

The energetic demand of high level athletes frequently exceeds the conventional requirements. Breathing oxygen at high pressure by means of specially designed devices can be a valuable resource for overstressed, frequently injured, or highly demanding sportsmen/women. Breathing oxygen in a hyperbaric chamber at elevated pressure can supply the most efficient energetic delivery to the human body among the physiological limits within a safe daily practice. Hyperbaric oxygenation (HBO) increases up to 23 times the availability of plasmatic oxygen, remaining in solution status, independently of the main haemoglobin transport and of myoglobin limitations. This free oxygen not linked to blood cells access to the tissues by capillarity and it is delivered to the cell by gradient simple diffusion. This is a direct physiological effect based on the Boyle's, Mariotte's, Dalton's and Henry's Laws. The limits, conditions, and requirements for a best and safe application of HBO is regulated by international societies like the European Committee for Hyperbaric Medicine (ECHM), the South Pacific Underwater Medical Society (SPUMS) and in America the Undersea & Hyperbaric Medical Society (UHMS). The requirements and valid procedures for HBO within the range of safe and efficient practice are specified in technical reports like the European code of Good Practice in Hyperbaric Medicine or the UHMS's HBO Committee Reports. HBO is not free of unexpected or secondary effects that can be easily prevented by means of an accurate, specialized, and professional training and application. HBO can be very useful in sports medicine conditioned to a correct application within the limits of safe, valid, evident, and efficient procedures based on acceptable and established principles. Prevention of accidents, enhancing recovery after muscular injuries, and avoiding the hyper training stress are some of the more remarkable effects of HBO if correctly applied in the correct way by means of expert specialists. In the same way, possible HBO secondary effects must be accurately controlled.

Biography

Jordi Desola is a Professor of Diving and Hyperbaric Medicine at University of Barcelona. He has Medical specialities on Internal Medicine, Occupational Medicine and Sports Medicine. He is the permanent member of the Executive Board of the European Committee for Hyperbaric Medicine (ECHM); Medical Representative of Spain in the European Diving Technology Committee (EDTC); Diving Instructor - Pilot of General Aviation and; President and Medical Director of CRIS-UTH.

jordi.desola@comb.cat