

Prof. Dr. Costantino Balestra – Haute école Bruxelles-Brabant ISEK

From Breath-hold diving to patient's bed : The normobaric oxygen paradox

There is a great concern regarding the increased need for blood products in an aging population and the cost of safe blood transfusion in developing countries. The use of blood red cell precursor enhancers like exogenous erythropoietin (EPO) is one of the alternative techniques to blood transfusion as it stimulates the hemoglobin and reticulocytes production in anaemic patients. In this presentation, Dr. Balestra, shows the first results of increased EPO production after intermittent hyperoxia through breath-hold diving, a process also known as the normobaric oxygen paradox. After the dive, the return back from the increased oxygen partial pressure is considered by the body as a drop of oxygen in the tissues and thus leading to an increase in EPO (similar to a stay at high altitudes). Dr. Balestra was amongst the first scientists to report the possibility to increase EPO with a single non hypoxic stimulus.