

Special Issue

Intermittent Hypoxia: Physiological and Biomedical Perspectives

Message from the Guest Editors

Intermittent hypoxia (IH) involves cyclic oxygen deprivation interspersed with normoxia. It occurs naturally (e.g., altitude training) or pathologically (e.g., sleep apnea). IH triggers complex adaptations—beneficial in physiology, detrimental in disease—via hypoxia-inducible factors (HIFs), oxidative stress, and inflammatory signaling. In sports, IH enhances aerobic performance by elevating erythropoietin, improving mitochondrial function, promoting vasodilation, and increasing metabolic stress tolerance—benefiting endurance disciplines like cycling and long-distance running. Clinically, IH preconditioning protects against ischemia–reperfusion injury in cardiac surgery and transplantation. Conversely, in chronic respiratory diseases (e.g., COPD), pathological IH promotes oxidative stress, cardiovascular dysfunction, neurocognitive decline, and pulmonary hypertension. This Special Issue invites original research and reviews on IH adaptation mechanisms, sports science applications, pathophysiological effects in cardiorespiratory diseases, and therapeutic strategies. We seek interdisciplinary contributions advancing IH research in health and disease.

Guest Editors

Dr. Teresa Carbonell Camós
Dr. Olga Tura-Ceide
Dr. Norma Alva

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Editorial Office
MDPI, Grosspeteranlage 5
4052 Basel, Switzerland
Tel: +41 61 683 77 34
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The International Journal of Molecular Sciences (*IJMS*, ISSN 1422-0067) is an open access journal, which was established in 2000. The journal aims to provide a forum for scholarly research on a range of topics, including biochemistry, molecular and cell biology, molecular biophysics, molecular medicine, and all aspects of molecular research in chemistry. *IJMS* publishes both original research and review articles, and regularly publishes special issues to highlight advances at the cutting edge of research. We invite you to read recent articles published in *IJMS* and consider publishing your next paper with us.

Editor-in-Chief

Prof. Dr. Maurizio Battino

Department of Odontostomatologic and Specialized Clinical Sciences,
Sez-Biochimica, Faculty of Medicine, Università Politecnica delle
Marche, Via Ranieri 65, 60100 Ancona, Italy

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