
Contents

Part I Intermittent Hypoxia and Cardiovascular Disorders

- 1 Sleep-Disordered Breathing and Cardiac Arrhythmias:
Role of Intermittent Hypoxia 3**
Thomas Bitter
- 2 Effects of Chronic Intermittent Hypoxia on Cardiac Rhythm
Transcriptomic Networks 15**
Sanda Iacobas and Dumitru Andrei Iacobas
- 3 Intermittent Hypoxia and Atherosclerosis 29**
Demet Tekin, Elisa Chong, and Lei Xi
- 4 Protective Effects of Chronic Intermittent Hypoxia Against Myocardial
Ischemia/Reperfusion Injury 47**
Huang-Tian Yang, Yi Zhang, Zhi-Hua Wang, and Zhao-Nian Zhou
- 5 Role of Mitochondrial Permeability Transition Pore in Intermittent
Hypoxia-Induced Cardiac and Neuronal Protection 59**
Galina Vavilova, Tatyana Shimanskaya, Nataliya Strutynska, Sergey Talanov,
and Vadim Sagach
- 6 Intermittent Hypoxia Alters the Function of Cardiovascular Neurons
and Reflex Pathways in the Brainstem 71**
David D. Kline and David Mendelowitz

Part II Intermittent Hypoxia and Respiratory Disorders

- 7 Effect of Intermittent Hypoxia on Breathing Stability in Individuals
with Sleep Apnea 87**
Jason H. Mateika
- 8 Activation of Inflammatory Circulating Factors by Intermittent Hypoxia
in Sleep Apnea Syndrome 99**
Larissa Dyugovskaya and Andrey Polyakov
- 9 Beneficial Effects of Intermittent Normobaric Hypoxic Training
on Respiratory Function in Patients with Chronic Pulmonary Diseases 115**
Mikhail I. Levashov
- 10 Effects of Intermittent Hypoxic Training on Exercise Tolerance in Patients
with Chronic Obstructive Pulmonary Disease 127**
Martin Bartscher

11	Intermittent Hypoxia in Treatment of Bronchial Asthma in Childhood	135
	Tatiana V. Serebrovskaya, Alexander N. Bakunovsky, Klaudia V. Nesvitailova, and Iryna N. Mankovska	
 Part III Intermittent Hypoxia and Neurological Disorders		
12	Intermittent Hypoxia and Experimental Parkinson's Disease	147
	Maria V. Belikova, Evgenia E. Kolesnikova, and Tatiana V. Serebrovskaya	
13	Protective Effects of Adaptation to Hypoxia in Experimental Alzheimer's Disease	155
	Eugenia B. Manukhina, Anna V. Goryacheva, Maya G. Pshennikova, Igor Yu. Malyshev, Robert T. Mallet, and H. Fred Downey	
14	Neuroprotective Mechanisms of Intermittent Hypoxia: An In Vitro Study	173
	Galina Skibo, Maxim Orlovsky, Anastasiia Maistrenko, Victor Dosenko, and Iryna Lushnikova	
 Part IV Intermittent Hypoxia and Occupational, Environmental, and Other Disorders		
15	Intermittent Hypoxic Training to Enhance Endurance in Elite Swimmers	183
	Nikolai I. Volkov	
16	Adaptation to Intermittent Hypoxia/Hyperoxia Enhances Efficiency of Exercise Training	191
	Tatyana G. Sazontova, Antonina V. Bolotova, Irina V. Bedareva, Nadezhda V. Kostina, and Yuriy V. Arkhipenko	
17	Hypobaric Interval Hypoxia as a Nonmedication Method for Improving the Functional State of Aerospace Pilots and Astronauts	207
	Igor B. Ushakov, Anatoli A. Shishov, Vladimir N. Komarevtsev, and Vladimir N. Filatov	
18	Intermittent Hypoxia Remedies Male Subfertility	221
	R. James Swanson and Zoya Serebrovska	
19	Anticancer Effects of Intermittent Hypoxia in Acute Myeloid Leukemia	229
	Guo-Qiang Chen and Wei Liu	
20	Energotropic Effects of Intermittent Hypoxia: Role of Succinate-Dependent Signaling	239
	Ludmila D. Lukyanova, Yu I. Kirova, and Elena L. Germanova	
21	Intermittent Hypoxia and Health: From Evolutionary Aspects to Mitochondria Rejuvenation	253
	Arkadi F. Prokopov	
 Part V Methods and Equipment for Therapeutic Use of Intermittent Hypoxia in Humans		
22	Benefits and Risks of Different Regimen of Intermittent Hypoxic Training	273
	Katerina Rozova, Olga Gonchar, and Iryna N. Mankovska	
23	Individualized Intermittent Hypoxia Training: Principles and Practices	281
	Tatiana V. Serebrovskaya and Lei Xi	

24 Hypoxicators: Review of the Operating Principles and Constructions	291
Viktor A. Lopata and Tatiana V. Serebrovskaya	
25 Method of Combined Intermittent Hypoxia and Surface Muscle Electrostimulation for Enhancing Peripheral Stem Cells in Humans	303
Ginés Viscor, Casimiro Javierre, Teresa Pagès, Luisa Corral, Joan Ramon Torrella, Antoni Ricart, and Josep Lluís Ventura	
Index	309

Intermittent Hypoxia and Human Diseases

Xi, L.; Serebrovskaya, T.V. (Eds.)

2012, XII, 316 p., Hardcover

ISBN: 978-1-4471-2905-9