The editors and authors of this book are a cadre of scientists and physicians with broad experience and knowledge of diving physiology and decompression theory. As is often the case, it requires a group effort to succeed in advancing practical knowledge. The colloquialism "the whole is greater than the sum of its parts" is often true and the PHYPODE Research Group epitomizes this concept. By logically grouping the various elements of diving science and medicine with provocative "food for thought" sections the text offers valuable lessons to those interested in the current state of diving. Despite nearly 170 years of research, the fundamental nature of decompression stress remains elusive. As is well outlined in this book, great advances have been made to the practical elements allowing for safe diving. Nonetheless, there are glaring voids of knowledge related to the nature of bubble nucleation, its consequences and methods to ameliorate risk. The synergy exhibited in this text not only provides a foundation for what is known, it offers a glimpse of where research is taking us. --- Professor Stephen R. Thom, Dept. of Emergency Medicine, University of Maryland School of Medicine

Editors: Costantino Balestra - Full-time Professor & Head of the Integrative Physiology Lab at the Haute Ecole Paul Henri Spaak; and Peter Germonpré - Medical Director of the Centre for Hyperbaric Oxygen Therapy of the Military Hospital Brussels, Belgium. Co-editors: M. Rozloznik, P. Buzzacott, D. Madden. European Underwater and Baromedical Society

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The Science of Diving - PHYPODE, EUBS

Balestra, Germonpré

Costantino Balestra
Peter Germonpré

The Science of Diving

Things your instructor never told you

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Chapter 1: Recreational diving today: decompression habits, DAN Europe database insights

Authors:
Costantino Balestra, Danilo Cialoni, Peter Buzzacott, Walter Hemelryck, Virginie Papadopoulou, Massimo Pieri and Alessandro Marroni

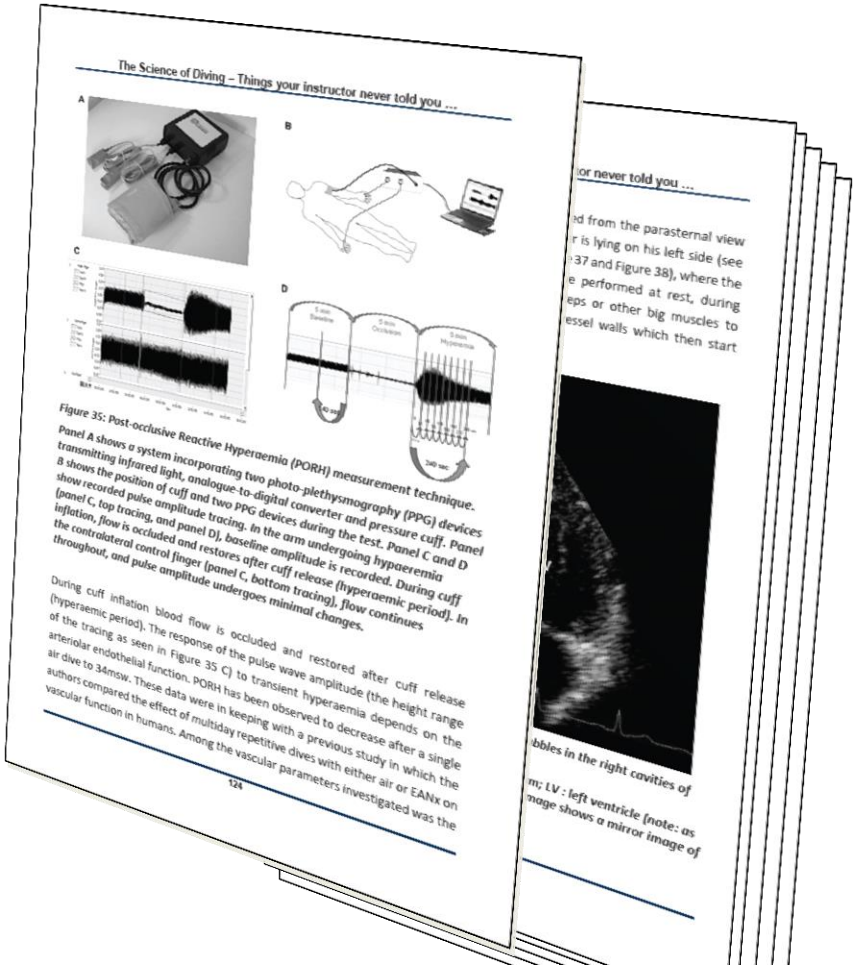
Take-home messages

- SCUBA diving is a relatively safe activity
- Recreational dives are routinely carried out to approximately 80% of the M supersaturation value
- Computers are all similar in DCS incidence in theory but validation is difficult for typical recreational multilevel repetitive and multiday profiles
- Databases are useful to collect supplemental data from diving, because dive profile analysis alone is not sufficient to accurately predict DCS risk.

Abstract

Compared with other sports, SCUBA diving remains a relatively safe activity but precisely defining risk is important. Diving databases such as the Diving Safety Laboratory (DSL) collection by Divers Alert Network (DAN) Europe can provide new insights into the causes of diving accidents, including decompression sickness (DCS) incidence with respect to the dive profile. Data from the DSL shows that in the recreational setting diving with a dive computer may be used by as many as 95% of divers. This points to the need of validating these tools with respect to DCS incidence, a difficult task.

- **264 Pages**
- **11 Chapters**
- **16 Tables**
- **63 Figures**
- **"Food for thought" interludes**



Our aim was to keep the concepts as clear as possible but maintain the scientific integrity of the subject. References are limited and proposed as further reading.

The Editors and Co-editors :

While the first goal of this book is to provide valuable insight and new ideas about diving physiology and medicine, there is a more direct way in which you, who bought this book, will contribute to the advancement of diving medicine: all royalties from the sales of this work will be donated to the European Underwater and Baromedical Society (EUBS – http://www.eubs.org), the European scientific society for diving and hyperbaric medicine.

The Editors

Prof. Costantino BALESTRA, PhD **Dr. Peter GERMONPRE, MD**

The Co-editors

Miroslav Rozloznik, PhD **Peter Buzzacott, PhD** **Dennis Madden, MSc**

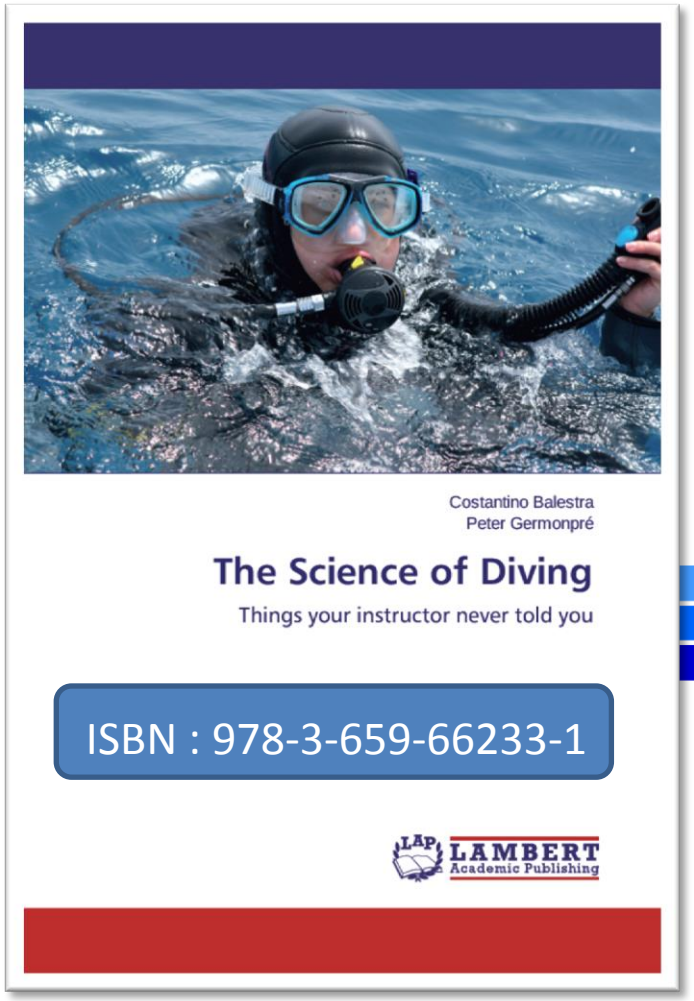
All authors (see author list at end of this book)

PHYPODE Project

Physiopathology of decompression

The Authors :

Costantino BALESTRA
Jean-Eric BLATTEAU
Alain BOUSSUGES
Francois BURMAN
Peter BUZZACOTT
John CHATTERTON
Danilo CIALONI
Zeljko DUJIC
Robert J. ECKERSLEY
Murat S. EGI
Emmanuel GEMPP
Peter GERMONPRE
Francois GUERRERO
Walter HEMELRYCK
Jean-Pierre IMBERT
Thodoris D. KARAPANTSIOS
Jacek KOT
Pierre LAFÈRE
Kate LAMBRECHTS
Cecile LAVOUTE
Dennis MADDEN
Alessandro MARRONI
Aleksandra MAZUR
Tamer OZYIGIT
Virginie PAPADOPOULOU
Massimo PIERI
Georgi POPOV
Miroslav ROZLOZNIK
Adel TAHER
Meng-Xing TANG
Guy THOMAS
Frauke TILLMANS
Yurii TKACHENKO
Qiong WANG



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