

Imprint

Author: Klaus M. Stiefel

Title: Your Brain on Diving

Subtitle: New insights into the function of the human brain underwater

All rights reserved. Even the publication or reproduction of excerpts of any kind, apart from review citations, requires the permission of the publisher. This applies in particular to electronic or other reproduction, translation, distribution and making available to the public.

© 2022 by Felicitas Hübner Verlag GmbH (huebner-books), Apensen, Germany Excerpts from the original German language edition "Gehirn extrem", © 2019 by Felicitas Hübner Verlag GmbH (huebner-books), Apensen, Germany Photos © by Klaus M. Stiefel Cartoons "Synapsis" © by Anna Farell Translation © by Klaus M. Stiefel ISBN 978-3-941911-80-2 www.huebner-books.de

Table of Contents

Imprint

Diving and Brains: A Brief Intro

Inert Gas Narcosis

What Nitrogen Does to Brain Cells

Nitrogen-Altered Brain Waves

Whale Brains

<u>Apnea</u>

Breathing and the Brain

Oxygen Use

Fear and Loathing Underwater

The Hindbrain Again

Badjao Superpower

Human Free Diving Evolution

About the Author

Literature

Diving and Brains: A Brief Intro

I love to be underwater, to the point that I took up diving as a teenager and now spend time underwater almost every week, sometimes teaching scuba courses, and often filming and photographing the subaquatic world. I also have a burning desire to understand what goes on in our brains, so much that I took up neurobiology as the subject of my graduate studies in 1998 at the Max Planck Institute for Brain Research. The passions for diving and for neurobiology seemed disjoint at first, even to myself, but in recent years I have seen a number of fascinating overlaps.

We humans are, of course, land mammals, and sticking our head underwater and exposing ourselves to increasing water pressure will have effects on our bodies, some of which we were equipped to deal with by Mother Evolution; others catch our bodies off guard. As so often, the most intense and curious effects show up in our bodies' most complex organ, the brain. Anybody who has scuba dived to more than about 30 meters will attest to the mind-spinning effects of inert gas narcosis.