Book Review • Biohack Your Brain

Kristen Willeumier, PhD with Sarah Toland

Reviewed by Joseph Miele, OD • Hallandale Beach, Florida

Dr. Willeumier graduated from Boston College with a degree in Psychology. She received a Master's degree in Physiologic Science and a Doctorate in Neurobiology from the University of California in Los Angeles, where she now resides. During her graduate and post-graduate years of research, Dr. Willeumier studied neuroendocrinology, neurophysiology, and neurogenetics at the University of California and at the Cedar-Sinai Medical Center. She continued her studies and research in neurodegenerative diseases in the Neurology Department of the same medical center. She then entered the field of brain imaging. Dr. Willeumier became the director of research for the Amens Clinic, a mental health care center for the study of the brain.

Biohack Your Brain is about a daughter who is a student, teacher, athlete, researcher, and neuroscientist who agonized watching her father suffer from a degenerative disease. This book is not about vision; it is a book to fulfill a vision. Dr. Willeumier wrote this book hoping that it would help people of any age to take care of their brain and keep it healthy. She is a woman of science, but this book is not written in the language of science.

Biohack Your Brain was published in 2020 by HarperCollins Publishers. It is 288 pages, divided into ten chapters, with scientific references for each chapter. It also has a Glossary of Brain-Related Acronyms, in which is cited neurovisual training (NVT), a type of cognitive training that uses simulators, computer screens, and virtual reality headsets to challenge eye movements and to increase overall optical skills.

In the first chapter, Dr. Willeumier writes the ending: her conclusions from her research, ten ways to keep your brain healthy. These are the basics: 1) Take a brisk walk, 2) Eat a square of dark chocolate, 3) Sit up straight, 4) Write with your non-dominant hand, 5) Eat a bowl of blueberries, 6) Learn a new word, 7) Visualize ways to improve your day, 8) Create ten minutes of white space, 9) Sniff your stress away, 10) Write down one thing you are grateful for. Dr. Willeumier provides the scientific references for each of these conclusions in her "notes" for each chapter.

The second chapter is a nicely written description of how the brain works. There is a section on consciousness and intelligence, as well as gender differences of the brain and problems that occur playing sports. Dr. Willeumier participated in research on the brains of NFL players.

The third chapter is a detailed analysis of foods that are good for the brain. The fourth chapter is a discussion of which exercises increase cerebral circulation and ways to get new brain cells. The fifth chapter describes the value of vitamins and supplements to increase blood flow and to protect brain cells against oxidative stress.

In chapter six, Dr. Willeumier explains the value of water and other beverages that are good for your brain. In chapter seven, she offers answers to the following questions: What is the difference between regular stress and chronic stress? What are the ways to get a good night's sleep? What is the value of meditation, deep breathing, and massage?

Chapter eight explains why positive thinking is important and how to break from negative thinking. Chapter nine is a discussion of music, art, reading, languages, and computer games. Finally, the last chapter is about what blood tests teach you about your brain's health and which habits you should monitor. Lastly, should you get a brain scan?

Every reference cited was published in this century, so the information has a recent history. I did not see a reference from optometry or ophthalmology, though.

I taught my VT patients much of this information. I learned from my teachers at the Optometric Center of New York, the Gesell Institute of Child Development, and many OEPF Congresses that I attended. For the most part, the information was based on each instructor's experience working with patients. The information was anecdotal and was often derided by many professionals who disparaged behavioral optometry. This book proves the foresight of our predecessors. I wish that I had had this book when I was in practice. I would have given or recommended this book to most of my patients. I especially would have given *Biohack Your Brain* to each and every optometrist and ophthalmologist I met!