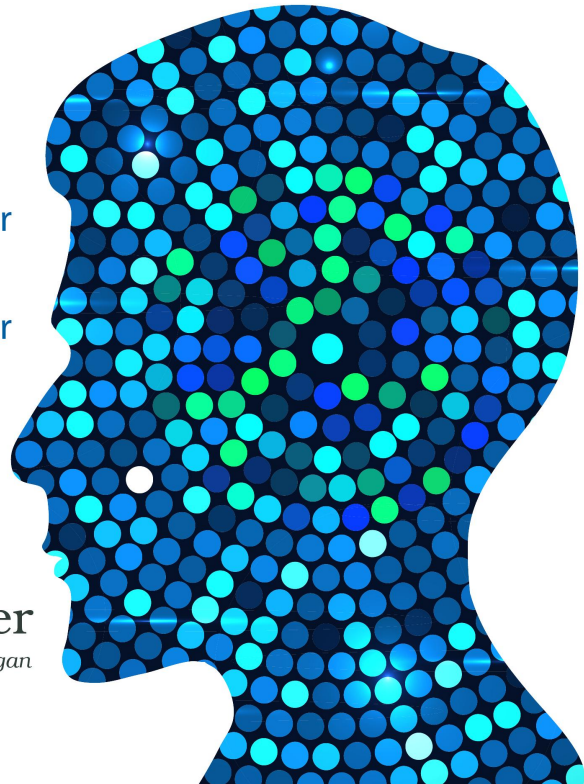# The Healthy Programmer

Second Edition

Refactor Your
Fitness

Improve Your
Mind

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edited by Brian P. Hogan

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Preface

The phrase "sitting is the new smoking" became popular in the same year the first edition of *The Healthy Programmer* was published. While the comparison between sitting and smoking is overhyped,[1] it was around this time that software developers and other sedentary workers began paying more attention to the very real dangers of sitting all day long.

Scientists and researchers also had growing concerns. The first study connecting sitting to signifcant health risks was published in 2008, inspiring a wave of publications including this book. Since then, thousands of studies have revealed the consequences of a sedentary lifestyle.

In addition to new research over the last decade, a lot has changed in the lives of most programmers. We experienced a global pandemic that transformed our perception of health and wellness, and learned a great deal about what it means to be healthy. Many programmers left the office and started working remotely, which had it's own health consequences. Now some employeers are asking them to return to the office without making the necesssary changes to ensure their workplaces are condusive to healthy lifestyles. Of course, many home offices aren't much better. That's why it's important to take your health into your own hands.

Before you continue reading take a moment to stand up, stretch, go for a walk, or do anything else to get moving. This is good for your body, but as you will learn, it can also be good for your brain. Physical activity might actually make it easier to concencrate and remember new concepts like the ones you'll read about in the following pages. After you've experienced this effect a few times, it will become easier to fit these healthy activities into your daily routine. This book will guide you through those changes.

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1. *Hyping health effects: a news analysis of the 'new smoking' and the role of sitting [CRB19]*

Why Should I Read This Book?

The number-one reason you should read this book is that your life depends on it. The second most important reason is that your career depends on it. If you want to continue doing the job you love for years to come, this book is for you.

I've met programmers whose backs are in so much pain that they cannot sit at a desk. I've also met programmers whose wrists have been injured by their repetitive use of a keyboard and mouse, making their day to day activities a hardship. Injuries like these can make your job unpleasant at best, and impossible at worst.

Beyond minor ailments, a life of programming can lead to an early death. That claim may sound extreme, but the leading cause of death in the United States is heart disease.[2] Furthermore, conditions like type-2 diabetes and obesity are on the rise. The programming lifestyle contributes to these problems, but in most cases they can be prevented through exercise and nutrition. We'll discuss causes of these and other health problems in the book. Then we'll lay out a plan for overcoming them.

Who Should Read This Book?

Although this book should appeal to a wide range of programmers, it's primarily directed at those that are sedentary. The less you are doing for your health right now, the more you'll get out of this book.

But even if you are a generally active programmer or even an athlete, you'll likely find this book useful. It may help you justify an existing health plan, or it may help to correct things you're doing that are problematic. You'll also learn how to stay healthy in your office by creating a workstation that prevents pain and helps you avoid injury when it comes time to exercise.

There are no prerequisites for reading this book. If you have an existing health condition, then you'll need to consult a doctor before acting on any advice it provides. But even if the most exercise you've done in the last year is walking from your desk to the bathroom, you'll be able to use this book.

What's in This Book?

This book will guide you in a transformation from an achy, unhealthy, and possibly grumpy hacker to a happy and productive programmer. You won't

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2.   https://www.cdc.gov/nchs/fastats/leading-causes-of-death.htm

set unreasonable goals for yourself like having six-pack abs, buns of steel, or Michelle Obama arms, but if you follow the plan in this book, you'll be able to adjust your weight, get stronger, and have more endurance. These are not your goals, however. Being healthy is your goal.

You'll begin by taking a close look your habits in Chapter 1, Making Changes, on page ?. Programmers aren't born unhealthy—they become unhealthy through a combination of bad habits and environmental pressures. In this chapter you'll understand how your brain develops habits and what you can do to change them.

Once you understand how to change habits, you can start applying these tools to your health. In Chapter 2, Bootstrapping Your Health, on page ?, you'll see how a simple walk can have a profound impact on your well-being. But it can also improve your ability to think. You'll explore what science tells us about the effect exercise has on the brain. You'll also lay out a very simple daily walking plan that is proven to bootstrap your health.

One of the best things about walking is that it gets you up and out of your chair. In Chapter 3, A Farewell to Chairs?, on page ?, you'll investigate why sitting is so dangerous and what you can do about it. You might be surprised to discover that standing up isn't always the best solution. But with the right workstation, you'll be able to improve your health right from the comfort of your office.

In Chapter 4, Agile Dieting, on page ?, you'll start to view health from a different angle. Programmers are not known for having good diets, and that's probably a result of the environmental pressures that come with a high-stress, startup-like job. Combating those pressures can be an iterative and incremental process just like everything else in the software industry. You'll discover how to experiment with your meals until you find a diet that works for you.

Being healthy isn't just about heart disease and obesity, though—it's also about living pain-free. In Chapter 7, Preventing Headaches and Eye Strain, on page ?, Chapter 5, Preventing Back Pain, on page ?, and Chapter 6, Preventing Wrist Pain, on page ?, you'll get familiar with the most common sources of pain for programmers: back aches, wrist strain, and headaches. You'll gain tools that help you prevent these conditions and recognize what to do if they occur.

However, the activities and best practices in this book won't be any good if they interfere with your job. That's why you'll explore an exercise plan in *the (as yet) unwritten Chapter 8, Making Exercise Pragmatic,* , which dovetails

with your career goals and routines. You'll structure your workouts in a way that actually enhances your ability to write code.

In *the (as yet) unwritten* Chapter 9, *Thinking Outside the Cube,* , you'll explore why it's important to get outside every now and again. This will replenish your vitamin D levels, which may boost your immune system. You'll also discover how to prevent and treat the common cold.

Then you'll take your fitness to the next level. In *the (as yet) unwritten* Chapter 10, *Refactoring Your Fitness,* , you'll read about how to improve your aerobic capacity and muscular endurance while following the daily plan defined in the previous chapters. You'll have to push your limits, but maintaining a higher level of fitness can improve mood and productivity in the workplace.

In the penultimate chapter, *the (as yet) unwritten* Chapter 11, *Teaming Up,* , you'll see how your coworkers and your employer affect your health. You'll also explore how you can improve the health of those around you and why it's good for all parties involved. You'll develop some activities you can do with your coworkers and discover how to best motivate them to join you in being a healthy programmer.

Finally, you'll think about where to take your health goals after finishing this book. In *the (as yet) unwritten* Chapter 12, *Onward, Healthy Programmer,* , you'll identify some tricks that will help you move your health forward every day.

In each chapter, you'll define goals that you should strive to meet, and set forth a daily checklist of activities that will help you get there. To follow along with these, you can visit https://healthyprog.com.

You Can't Fool Nature

Unless otherwise stated, every point made in this book is backed up by scientific research. The recommendations and claims I will make are directly supported by evidence. But I haven't accepted just any kind of evidence—nearly every study I used met two criteria: it was published in a peer-reviewed journal and the results agreed with the existing body of scientific evidence. The few that do not meet these criteria are explicitly called out as such, and they are used only to provide discussion on topics where a scientific consensus has not yet emerged.

When studies are referenced in this book, be sure to pay close attention to the language that is used. Terms such as *linked*, *associated with*, and *correlated with* imply that two variables move in sync with each other. But they

do not imply that one *causes* the other. For example, sitting and cancer are correlated. It's possible that sitting causes cancer, but it's also possible that cancer causes more sitting. Furthermore, it could be that some overarching condition causes an increase in both sitting and cancer risk. We just don't know yet—we know only that the two variables follow similar trends.

To avoid having the book read like a Ph.D. thesis, I have not included a citation for every paper and book that I used to support my research. However, you can find a complete list of references and suggestions for further reading in *the (as yet) unwritten Appendix 3, Further Reading, .*

Most of these publications relate to medicine and biology, but a surprising number relate to psychology, sports, anthropology, music, business, and even computer science. I believe this illustrates one of the most important points you can take away from this book: your mind and body are not independent entities. They are intimately coupled, and for one to perform at its best, both must be healthy.

You're going to see the word *healthy* a lot in this book. Before we get started, it's important that you understand exactly what it implies.

What Does It Mean to Be Healthy?

The title of this book may seem self-evident, but it was not easy to include a word that nearly every person has preconceptions about. As Mark Twain once said, "The only way to keep your health is to eat what you don't want, drink what you don't like, and do what you'd rather not."

Twain's quote rings true because the volume of information you're confronted with when learning about our health is enormous (in Twain's time it was probably just erroneous). You receive conflicting information and are often forced to conclude that everything you enjoy is now off limits. The discussion around health in popular media has essentially devolved into a "he said, she said" game. In truth, healthy choices are a personal decision. What's right for you may not be right for someone else.

Health is a nebulous thing that involves many aspects of life. Thus, it's important to clearly define it for the purpose of this book. A healthy person is at low risk for developing lifestyle-induced diseases. Furthermore, a healthy person should be relatively pain-free. These two criteria may not provide a universal definition of health, but they will provide a good basis for our discussion. Fortunately, achieving this kind of health is not nearly as hard as Twain envisioned—in fact, it requires only small changes.

This book does not expect you to give up any part of your life to improve it (with the exception of long periods of sitting and an overindulgence in desserts). The goals and activities you'll learn about can all fit into your existing schedule and still make you healthy.

Let's refactor your health.