

Solving the Heart Puzzle

An MD's Journey Through Oxygen, Omega-3s,
and the Science of Healing

— Bill Code MD —

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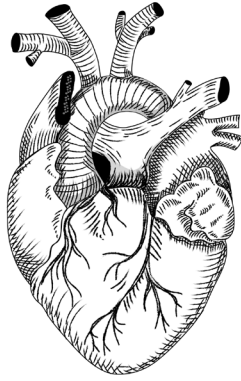
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CHAPTER 1

Why I Wrote This Book

After 46 years of practicing medicine in three Canadian provinces and one territory, I have gathered not only experience but, I hope, some hard-won wisdom. Over that same time, I have also lived with multiple sclerosis, since my diagnosis in 1996, and have faced frequent migraines and severe osteoporosis, including a complete compression fracture of my first lumbar vertebra. These personal challenges pushed me to explore what is often called complementary, alternative, or integrative medicine, and to rethink how we approach chronic illness.

Looking back on my career—four years of rural general practice, four years of anesthesiology residency, six years of bench research, 10 years in academic medicine, and now 25 years in integrative medicine—I have come to a clear conclusion: we need a new path to real health, especially for the heart.

A New Paradigm for Heart Health

To develop a sustainable path toward health, we must first empower people through education and demonstration of a new paradigm. As R. Buckminster Fuller suggested, the way to change a system is not to fight the old one directly, but to build a new model that makes the old one obsolete. Our current health-care model—with its heavy focus on diagnosis and drug treatment—is, in many ways, already straining and “imploding” under its own weight.

Instead of waiting for the system to save us, it is time to coach people that their well-being is mostly in their own hands. This does not mean rejecting doctors or hospitals; rather, it means strengthening the foundations that our health rests upon.

Three factors stand out as the pillars beneath all heart health:

1. The air we breathe
2. The water we drink
3. The food we eat

These sound simple, but they represent a bigger challenge—and a bigger opportunity—than most people realize.

You may have seen efforts such as Robert F. Kennedy Jr.'s “Make America Healthy Again” (MAHA), which highlight that true health cannot be achieved only through prescriptions and procedures. I share that conviction, and this book is my contribution to a more empowered, practical approach.

The Three Golden Rules: Air, Water, Food



1. Air – Your First Medicine

To begin, our air must be as pure and clean as possible, because this is our primary source of oxygen. Oxygen is central to our energy, our healing, and our day-to-day brain and heart function. If you live in a heavily polluted environment, it is worth seriously considering changes—whether that means improving indoor air quality or, if feasible, moving to a cleaner location.

Studies reveal tiny particulate matter from energy efficient wood stoves increases the risk of injury to the heart and lungs. Propane and gas stoves are similar, even producing benzene. So start your exhaust fan when cooking.

Chronic exposure to air pollution is associated with higher risks of cardiovascular disease, stroke, and overall mortality. For many people, “environmental history” is as important as family history.

In later chapters we will go beyond ambient air and talk about **enhanced oxygen strategies**—how carefully increasing oxygen availability can become a therapeutic tool for the heart and brain, not just a background condition.



2. Water – The Hidden Variable

Whatever your water source, be sure that it is as pure and clean as you can reasonably make it. If your tap water is of uncertain quality, consider a home purification system such as:

- A gravity filter (for example, stainless-steel systems like Berkey).
- Distillation.
- Reverse osmosis.

With distillation or reverse osmosis, important minerals are removed along with contaminants, so it is wise to add minerals back into your daily intake—through mineral drops, mineralized salt, or other means advised by your practitioner.

The goal is to avoid drinking:

- Heavy metals
- Chlorine
- Fluoride in excess
- And other industrial contaminants

These substances are especially toxic over time and add to the body’s detoxification burden.



3. Food – Fuel or Slow Poison

Our food should be as organic as possible, ideally local, and minimally processed. Highly processed foods are often “adulterated” with:

- Agricultural chemicals from weed and insect sprays
- Harsh preservatives
- Artificial colorings and flavorings
- Industrial seed oils and hidden sugars

Each of these can strain our metabolism and our cardiovascular system.

We also need to learn whether we have food sensitivities. My own main sensitivities are gluten and dairy, and that combination is quite common—roughly a third of people may have some degree of sensitivity to one or both. Identifying and reducing trigger foods can calm inflammation, improve energy, and indirectly support heart health.

Why the Foundations Matter for the Heart

Every time we compromise one of these three golden rules—breathing polluted air, drinking contaminated water, or eating highly processed food—our cells must work harder to detoxify and repair. That work happens largely in the mitochondria, the tiny “power plants” inside our cells.

Detoxification in the liver, kidneys, lungs, and all tissues requires energy, and energy requires oxygen. The more oxygen we must use for damage control, the less is available for:

- Optimal brain function
- Strong heart performance
- Immune resilience
- Repair and regeneration

Over years and decades, this constant “tax” on our oxygen and energy systems can quietly push us toward fatigue, accelerated aging, and chronic illness—including cardiovascular disease. The **heart puzzle** is not just about blood vessels and the heart; it is about oxygen, energy, inflammation, and the internal environment we create day after day.

Epigenetics: How Oxygen and Nutrients Talk to Your Genes

A major reason for this book is to explore the **epigenetic** effects of both oxygen and key nutrients like Omega-3 fatty acids. Epigenetics refers to changes in how our genes are turned on or off—not changing the genes themselves, but changing how they are expressed.

Many readers may have heard that vitamin D influences the activity of a large number of genes. Oxygen, in turn, interacts with thousands of genes through its impact on cellular signaling, energy production, and cellular reaction balance. When we improve oxygen delivery and reduce oxidative stress, we are not just “breathing better”—we are changing the way our cells read our genetic code.

Omega-3 fatty acids—especially EPA and DHA from marine sources—also have strong epigenetic and anti-inflammatory effects. They modify the fatty acid composition of cell membranes, influence protectin and resolvins pathways, and alter gene expression related to inflammation, blood clotting, and fat metabolism.

Emerging data suggest broad gene-regulatory roles for both vitamin D and long-chain omega-3s (EPA, DHA). Oxygen influences up to 8000 genes. These are all powerful epigenetic levers.

In practical terms, this means:

- Improving oxygen status
- Optimizing vitamin D
- Increasing Omega-3s and improving the Omega-6/Omega-3 ratio and balance

may all “tilt” our gene expression toward better heart and vascular health, more resilient heart and brain function, and slower aging.

A Note on Sleep and Breathing

Sleep apnea is now recognized as a major risk factor for high blood pressure, heart failure, stroke, and rhythm disturbances such as atrial fibrillation. Many people with sleep apnea go undiagnosed for years.

People who use CPAP or other breathing support at night may also benefit from careful attention to extra oxygen delivery, under the supervision of their sleep or respiratory specialist. In later chapters we will touch on how nocturnal oxygen and airway support can protect the heart during sleep.

Where Omega-3s, Olive Polyphenols and Oxygen Fit into the Heart Puzzle

My goal in this book is three-fold:

1. To show how **Omega-3 fatty acids**—especially EPA and DHA from high-quality marine oils—can powerfully shift the chemistry of the heart and blood vessels toward health.
2. To highlight how polyphenols assist the functioning of Omega-3s.
3. To introduce and reinforce the importance of oxygen in both health and disease, and to demonstrate practical ways to improve oxygen delivery beyond the 21% we find in room air.

These three tools—Omega-3s, polyphenols and oxygen—are not drugs in the usual sense, and they cannot be patented in the same way as a new pill. That may be one reason they have been slow to enter mainstream practice, despite

decades of research on Omega-3s and polyphenols, and over 300 years of observation and study of hyperbaric and enhanced oxygenation.

When I recently reviewed my own library, I was struck by how little most major texts in integrative, functional, and even rehabilitation medicine say about oxygen as a therapeutic agent. Omega-3s and polyphenols are mentioned more often, but their full potential for the heart is still far from widely applied in everyday practice.

The figure consists of three separate tables, each with a title and two columns for Test 1 and Test 2. Each table has two rows: 'Target value' and 'Your value'. The 'Your value' row is highlighted in a darker grey background.

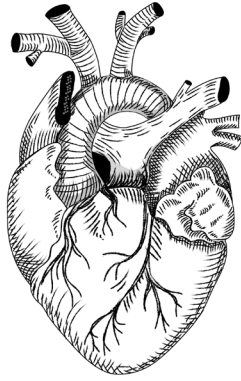
Omega-6:3 balance		
	Test 1	Test 2
Target value	< 3:1	< 3:1
Your value	7.9:1	5.1:1

Protection value		
	Test 1	Test 2
Target value	> 90%	> 90%
Your value	19.0%	47.0%

Omega-3 index		
	Test 1	Test 2
Target value	> 8%	> 8%
Your value	3.9%	5.4%

Figure 1: Home Based Omega-3 Test.

Home measurement of important fatty acid information to allow self care of your health. Bill Code MD's first two measurements. Test 1, October 2025. Test 2, April 2026, so 120 days.



Acknowledgements

Just as it takes a village to raise a child, I have needed a village to write this book. I am grateful to everyone who have contributed to this end result. Inevitably, I will miss someone, and I sincerely apologize for that.

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Any errors you note in this book are my responsibility. Please forgive me and let me know for the next printing.