



Two roads diverged in a wood, and I—
I took the one less traveled by,
And that has made all the difference.

ROBERT FROST
1874–1963

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INTRODUCTION

WHEN I WAS DIAGNOSED with chronic lymphocytic leukemia in 1991, most doctors would have said that modern medicine had no cure.

Most doctors believed then, that finding effective cancer treatments required huge sums of money to be spent on randomized controlled trials, in which expensive pharmaceuticals, many with harsh side effects are tested on numerous human subjects over many years. Such undertakings require the concerted efforts of exquisitely trained, well-funded, and very persistent scientists.

Most doctors believed then that nothing I could do for myself would help me survive leukemia. Although diet, supplements, and exercise—the pursuit of good health—might make my body stronger, my lifestyle choices would have no effect on the leukemia, and would therefore be a waste of time and money.

In 1991, most doctors would have said that there was no way I could successfully treat my own cancer, at home.

It is now 2016, and I am alive. And although I am well, very well indeed, many physicians still say that a patient cannot successfully treat cancer at home.

However, perhaps it can be done. Perhaps I have done it. I don't know. This book is my story, and it is above all the story of an experiment. As an experimenter I have catalogued my failures as well as my successes, in hopes that interested readers might find some instruction in both.

Finally, let me explain how I chose the title of this book, *n of 1*. In an experiment, the number of subjects is represented by the symbol “n.” So a typical large clinical trial enrolling a thousand subjects would be described as having an *n* of 1000.

My experiment had only one subject: me. Therefore my study had an *n* of 1. ♡

GLENN SABIN

• PART I •

DEATH SENTENCE



SOMEONE WAS CALLING from the doctor's office to apologize. Would I mind coming in for another blood draw? I didn't mind a bit; I assumed that the samples had been lost or damaged.

It was September 1991, and I was 28. The call from the doctor's office was a great excuse to hop into my '67 Pontiac GTO—my "Goat"—and cruise back to the lab. After giving the blood samples, I didn't give my upcoming checkup a second thought.

A few days later, I woke up charged, ready to blast through the day. The annual checkup barely registered. It was routine maintenance, the last on a long list of errands I planned to check off. How the Redskins would fare that season concerned me more. I kissed my bride Linda goodbye, and hopped into the Goat. With the top down, I roared out of the driveway into a blue and glorious day. We lived in Silver Spring, a Maryland suburb of Washington, D.C., a place where fall is world-class gorgeous. Past verdant lawns I sped, the sun on my face and the wind in my hair. My health status? Simply not on my radar.

I'd skipped breakfast, knowing that somewhere between a haircut and the dentist, I'd snag an oversized convenience-store coffee and a package of pastries, which in those days probably meant something with a decades-long shelf life. Next the Goat would get an oil change. Then came the physical, and if the doc was actually on schedule, I'd be out of there in time to swing by the house, pick up Jazz, our miniature schnauzer, and head for Sligo Creek Park. For an hour, maybe two, my canine buddy and I would amble through the woods, covering as much of the seven-mile trail as we could before getting home in time for dinner.

That was my plan.

My whole life I've made lots of plans, and even as I was driving to my medical appointment, there were many important plans in the works. I probably even had something planned when Linda and I met at a Jewish summer camp when we were 5 and 6 years old, because now she was my wife of two years! I'd always planned to stay close to my family, so Linda and I were remodeling our house, near the neighborhood where I'd grown up. The remodel was stressful, and fraught with the usual delays and cost overruns. But I was proud of the results, a stylish and comfortable home. Exactly as planned. And though we hadn't set any dates, eventually we planned to have children.

I appreciate the finer things in life, so it's lucky I enjoy working hard for a living. I

planned to earn enough for a lifestyle that Linda and I could enjoy. In service of that plan, it wasn't unusual for me to put in long days at the media company my father had founded. Shortly after I got married, my father's health had begun to fail, and I found myself running more and more of the operation. I drove myself hard, and I thrived. I loved planning and pushing the business to new heights. Competition stoked me. And the media business let me hang out with musicians, and hear lots of great jazz.

Despite my long workdays, I did not neglect my body. Exercise was planned into my schedule. I worked out almost every day, usually lifting weights. I snuck in occasional unplanned cardio. Exercise was my stress relief, and like my approach to everything, I pushed it. I honestly can't recall being fatigued at that time. I felt like a tank. Indestructible.

So when I showed up at the doctor's office for my "routine maintenance," I expected that last errand of the day to end with a nice slap on the back, and a "See you next year." Instead, the doctor came into the exam room wearing an uncharacteristically solemn expression.

My blood tests showed a problem, he told me. Something serious. Really serious.

So serious, in fact, he had already spoken with my father, whom he'd known for two decades.

It turned out that my original blood samples were not lost or damaged, but abnormal. The doctor had repeated the tests thinking there must have been an error. There was no lab error. The abnormal results were real.

I had a disease, he said. Leukemia. He looked me in the eye. The disease was fatal.

With that news, every plan I had ever made evaporated into thin air. 💔

OVER TWENTY-FIVE YEARS HAVE PASSED since that moment in 1991, when I began my cancer journey. I think time has dimmed my memory of that first doctor's appointment, the one that was supposed to be "routine maintenance"; or perhaps what the doctor had to say had always been too difficult to absorb.

I do recall him explaining that I had a blood disorder. It was called chronic lymphocytic leukemia, it was a malignancy, he said, a cancer. Next came something about needing to confirm the diagnosis with a specialist, then a bit of talk about scheduling more tests. Those details are now only a blur in my mind. I vaguely remember stumbling out of the doctor's office and into the lobby. Somewhere I found a payphone. I called home. All Linda could decipher from my incoherent stream of words was that something was very, very wrong. She jumped into her car and sped toward the doctor's office.

Linda found me in the underground parking garage pacing, weeping, beside myself. I slid into the passenger seat of her car, and Linda turned off the engine. Once I'd gathered myself a little, I managed to tell Linda as much as I could fathom of my, of our, predicament.

"I have leukemia. I have to see a specialist. I am going to die."

Linda turned the ignition key, and slowly she maneuvered out of the parking garage. "No," she said. "You're not." 💔

BACK THEN WHAT I DIDN'T KNOW ABOUT LEUKEMIA WAS EPIC. My grandfather had had a strangely named disease called “hairy cell leukemia,” and had been treated at the National Institutes of Health. Sadly, he had died from the condition. That all happened before I was born. Other than that bit of family history, my main exposure to the word “leukemia” had been from newspaper and magazine articles, the ones featuring a photo of a cute kid who had lost their hair and needed donations to cover expensive treatments.

I felt sorry for these kids, so I gave what I could. But leukemia, whatever that was, evaporated from my mind immediately afterward.

After my diagnosis, I holed up in my study with books on cancer. What I learned from slogging through the chapters on leukemia was that there is no single disease called “leukemia.” In fact, dozens of different blood cancers fall into this category. Each of these leukemia subtypes presents with different signs and symptoms, requires a unique treatment approach, and has a different prognosis.

I also learned that the two major subtypes of leukemia are “acute” and “chronic.” Mine was “chronic.” At first that reassured me, because “chronic” did not sound as serious as “acute.” But as I read, I got some very bad news.

From the textbook descriptions, it was clear that the kids on fund-drive posters usually have one of the acute leukemias. Although “acute” sounded pretty terrifying, I forced myself to read more. What I read was that acute leukemias are the wildfires of oncology, and they can kill within days. The signs and symptoms are anything but subtle: raging fevers, bleeding gums, and deep bruises after the mildest bump. The symptoms bring normal routines to a halt, turning “person” into “patient” almost instantly.

Well, at least “acute leukemia” wasn’t me! I felt really healthy and well; in fact, I felt great. Relieved, I kept reading, moving on to the sections on chronic leukemias. What I learned was that chronic leukemias often tiptoe into one’s life. At first there may be only a slightly diminished life-spark, a change initially ascribed to laziness, or to waning youth. More often, there are no symptoms at all. The only clue that something is wrong is an abnormal blood test. This was sure sounding like me.

I perked up when I read some good news. With swift and proper treatment,

acute leukemias could often be cured. In fact, most children with the disease *were* cured. The procedure that accomplished this was called a bone marrow transplant. Whatever a bone marrow transplant was, it sounded gruesome. But I reminded myself I didn't have acute leukemia. I had the chronic variety. No bone marrow transplants in my future.

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**IN 1991 WHEN I WAS DIAGNOSED,
EVERY CASE OF CHRONIC LEUKEMIA
WAS FATAL.**

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Relieved, I settled back in my chair and read on.

That was when I came to the bad news. The lack of severe symptoms—at first—doesn't make chronic leukemias a non-problem. Chronic leukemias kill as surely as acute leukemias do. What is different is that in cases of chronic leukemia, death ambles in at a leisurely pace, usually over several years.

Treatment could control some of the symptoms of chronic leukemias. But there was no cure. None. In 1991 when I was diagnosed, every case of chronic leukemia was fatal.

That was what I had: chronic leukemia. Specifically, I had chronic lymphocytic leukemia (CLL): The “always fatal” kind. *I was doomed.* ♡

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MY FAMILY DOCTOR REFERRED ME TO A HEMATOLOGIST. His name was Dr. Bruce Kressel. When we first met, soon after my annual checkup, his gentle demeanor immediately put me at ease. He examined me thoroughly, noted a subtle swelling in my upper abdomen, and then explained that to confirm the diagnosis of chronic lymphocytic leukemia he would need to do a bone marrow biopsy.

A bone marrow biopsy is considered to be one of the most painful diagnostic procedures. The bone itself cannot be anesthetized, and only the surrounding tissue can be numbed. On an exam table in Dr. Kressel's office, I lay on my stomach and tried to prepare myself. A nurse offered comfort while Dr. Kressel inserted a thick, hollow, needle deep into my hipbone and removed a speck of fatty marrow. It hurt, a lot. But that pain was nothing compared to the agony of the week-long wait for results.

The results were no surprise. My marrow was full of leukemic white blood cells.

It was another gorgeous fall afternoon in Washington, D.C. when Linda, my parents, and I went to Dr. Kressel's office for a long, and very unpleasant, talk. ♡

I WAS SURPRISED TO HEAR that I needed an operation for a blood problem. My predicament, as I understood it then, went something like this:

Healthy bone marrow produces three types of blood cells: red corpuscles, white blood cells, and platelets, all in particular amounts and particular ratios. In contrast, although my marrow was still producing most of its allotment of normal cells, at the same time it was also pumping ten times more cancerous lymphocytes into my bloodstream every day.

Lymphocytes are a subset of white blood cells; they are part of the immune system, and help the body fight infection. But cancerous lymphocytes function poorly, or not at all. Despite this, my marrow insisted on manufacturing these useless cells in such massive amounts, that their sheer number were damaging the rest of my body.

The unceasing production of abnormal cells is the hallmark of cancer. The body makes attempts to control the disease, but when these attempts fail, or are overwhelmed, symptoms occur. In my case, the leukemic cells had lodged in and overwhelmed my spleen.

My spleen was so enlarged Dr. Kressel could easily palpate it, a firm mass distending the upper part of my abdomen. When he pointed this out, initially I was relieved, because I thought I was simply getting fat from Linda's fabulous cooking—despite all my hours at the gym!

The normal spleen hides behind the lower left ribs, far from an examining hand. Its duties include the sequestering of aging or damaged blood cells, dismantling these cells, and sending their building blocks—amino acids, sugars, and fats—back into the bloodstream for recycling.

A healthy spleen weighs only two pounds. Mine weighed seven. It was packed with five pounds of leukemic cells. Not only was my spleen no longer functioning, it was fragile. It could rupture and cause me to bleed to death. Dr. Kressel said it had to come out, and soon.

Once that surgery was done, he said, I might want to consider a bone marrow transplant. I knew nothing about bone marrow transplants. Transplanting anything sounded pretty drastic to me.

I asked if there was any other option. There was. This option was called “watchful

waiting.” Watchful? Waiting? Waiting for what? Illness? Death? That option sounded even less appealing than a bone marrow transplant! What “watchful waiting” meant was that Dr. Kressel would see me every three months, keeping an eye out for trouble.

What kind of trouble? Patients with CLL typically develop a variety of problems: swollen lymph nodes, anemia, bleeding, blood clots, fevers, infections, or crippling fatigue.

Dr. Kressel explained that when problems eventually arose, I could expect to be treated with chemotherapy or radiation. These treatments would be given in small doses, just enough to ameliorate the symptoms.

Submitting to treatment only when symptoms arose? That sounded good to me, until Dr. Kressel explained that these treatments would not cure me. They would not even prolong my life. All that any such treatment could accomplish was to ease the discomfort the disease caused. That was the most I could look forward to.

By that time, I understood from my own reading what Dr. Kressel was trying to tell me: CLL was incurable. And eventually it was likely to kill me. Had I been a more typical patient, that is, an elderly person, I would likely die of something else before the leukemia got me. But I was young. That meant the disease would have plenty of time to catch up with me. The disease had gotten a huge head start. It already involved my spleen, a complication usually seen only in the last stages of the disease.

My date with death was set. Modern medicine was helpless to postpone it. There was nothing I could do to change this.

Dr. Kressel wrapped up the appointment. We would talk more about treatment another time, after I’d had my spleen removed. Getting that surgery done was urgent.

Mom, Dad, Linda, and I emerged from Dr. Kressel’s office into a glorious fall afternoon. I looked at my parent’s faces, and saw them filled with despair. I then looked at Linda. What I saw was poise; she was calm and stable. I looked away, towards the beautiful fall colors, blurred now by the tears that filled my eyes. 🍷



ADVANCE PRAISE

When I first met Glenn 10 years ago, he told me he was going to beat his chronic lymphocytic leukemia. Since then I have followed his activity and daily regimen, and indeed, he has been extremely successful. Is he an outlier or is his regimen worth studying on a larger scale?

DAVID S. ROSENTHAL, MD
Professor of Medicine, Harvard Medical School
Henry K. Oliver Professor of Hygiene
(Emeritus), Harvard University
Past president, American Cancer Society

A remarkable story of self-efficacy and pure grit. Glenn is a poster child for evidence-based integrative oncology and an exemplar of what might be achieved for others. I highly recommend this book.

MARK HYMAN, MD
Director, Cleveland Clinic Center for
Functional Medicine, and 10-time #1
New York Times bestselling author

n of 1 should be required reading for all cancer patients, but especially anyone who has received a dire prognosis. Glenn's determination, careful research, and willingness to change allowed him to find a cure for his "fatal" cancer, and we all have much to learn from his incredible experience.

KELLY TURNER, PHD
New York Times bestselling author of *Radical Remission:
Surviving Cancer Against All Odds*

I heard Glenn speak at UCSD and was captivated. A special story about resilience and self-efficacy that resonates far and wide!

T. COLIN CAMPBELL, PHD
Bestselling author of *The China Study*
Jacob Gould Schurman Professor Emeritus of
Nutritional Biochemistry, Cornell University



We need to understand that self-induced healing is an entity. It is not a spontaneous remission. We all need to learn from those who don't die when doctors expect them to. Glenn's experience and book will help you to understand and to achieve what is involved in survival behavior.

BERNIE SIEGEL, MD
Author of *Love, Medicine & Miracles* and *The Art of Healing*

How do we maintain a rigorous, scientific, yet open mind when it comes to discovery in medicine? In *n of 1*, Glenn Sabin reminds us that every observation is important—to be woven into the rubric of knowledge so that we may heal with collective experience.

DEBU TRIPATHY, MD
Professor and Chair, Department of Breast Medical Oncology
The University of Texas MD Anderson Cancer Center

A riveting account of one man's journey in fighting his cancer successfully with an unconventional approach. Thought-provoking!

GARY DENG, MD, PHD
Medical Director, Integrative Medicine Service
Memorial Sloan-Kettering Cancer Center

n of 1 is a little book with a big message on hope, empowerment and self-efficacy. While "cure" is sadly not possible for everyone, participation in one's healing always should be.

DONALD I. ABRAMS, MD
Chief, Hematology-Oncology, Zuckerberg San Francisco
General Hospital, Professor of Clinical Medicine,
University of California, San Francisco
Co-editor of *Abrams/Weil Integrative Oncology*

There is no such thing as a statistical human. Everyone is utterly unique—each of us is an *n of 1*.

JOSEPH PIZZORNO, ND
Co-author of *Encyclopedia of Natural Medicine*
Editor, *Integrative Medicine, A Clinician's Journal*

Glenn Sabin appears to be one of those few remarkable, determined individuals who become sufficiently involved in their self-healing to overcome a medically "incurable" cancer. Medical science needs to shake off its materialistic bias and study this phenomenon seriously, so that "*n of 1*" can become "*n of many*."

ALASTAIR CUNNINGHAM, OC, PHD
Professor Emeritus of Medical Biophysics at University of Toronto
Author of *Can the Mind Heal Cancer?*

Stories like Glenn's help inspire people to get engaged in improving their health and become active participants in the treatment process. It is important to not over interpret an *n of 1* experience, yet there is much we can learn from these journeys. Confronting cancer using an evidence-based, integrative approach will likely improve quality of life and the odds of long-term survival.

LORENZO COHEN, PHD
Professor and Director, Integrative Medicine Program
The University of Texas MD Anderson Cancer Center

A rare and intimate look into the journey of a young man expected to die, who defied convention to chart his very personal course back to life and vibrant health. Glenn's courageous story is a testimony to the power of nutrition and the power of one person—an *n of 1*—to help transform the way we look at health and disease.

MICHAEL STROKA, JD, MBA, MS, CNS, LDN
President, American Nutrition Association

n of 1 should be required reading by everyone dealing with cancer on any level—whether patient, caregiver, researcher, or policymaker. It has much to teach us about what is possible.

DWIGHT L. MCKEE MD, CNS, ABIHM
Board certified in medical oncology, hematology,
nutrition, integrative and holistic medicine
Co-author of *After Cancer Care*

This book is an offering—an offering of hope, of wisdom and of determination. While each one of us is truly a unique composition of experiences and choices, we can, nonetheless learn from one another. Glenn has carefully documented his extraordinary experience of using natural means to eradicate leukemia in a way that provides insight, knowledge, hope and inspiration. This book is both encouraging and illuminating.

LISE ALSCHULER, ND, FABNO
Co-author of *Definitive Guide to Cancer* and
Definitive Guide to Thriving After Cancer

I have consulted countless people affected by advanced cancer at MD Anderson Cancer Center and in Israel. These patients all have a common denominator: they all are looking for hope. They would like to meet those few exceptional patients who beat the odds and survived against their doctor's predictions. From my extensive research on exceptional cancer patients around the world, I know that patients need to be active in their decision-making in order to survive. Glenn's story emphasizes this point and should motivate every person affected by cancer to see himself as an *n of 1*. Glenn's approach provides hope, inspiration and motivation to build a proactive plan that can lead to more exceptional patients.

MOSHE FRENKEL, MD
Clinical Associate Professor, University of Texas Medical Branch
Founder, The Integrative Medicine Clinic, The University of Texas
MD Anderson Cancer Center

Glenn's *n of 1* gives us a view into the future of personalized medicine. The patient takes personal responsibility for their health, forms a collaboration team with their doctors, uses longitudinal time series to track the disease and remission, and natural foods and supplements to power the body's immune system to fight off the disease.

LARRY SMARR, PHD
Harry E. Gruber Professor of Computer Science and Engineering
University of California, San Diego
Director, California Institute for
Telecommunications and Information Technology

n of 1 is the amazing tale of Glenn Sabin's resilience in the face of adversity, and is motivation for us all. A moving testament of how a positive attitude plus a healthy lifestyle can have a profound impact on one's life.

NEAL BARNARD, MD
President, Physicians Committee for Responsible Medicine

Glenn Sabin's inspiring story teaches us that it may be possible to reverse even a seemingly incurable disease by becoming proactive in our own care. *n of 1* illustrates the three critical pillars of healing: proper diet, physical activity, and a positive mental outlook—along with personalized nutraceuticals—to establish an anticancer environment that makes healing possible. A must-read for outside the box thinkers and healers alike!

GORDON SAXE, MD, PHD, MPH
Director of Integrative Nutrition
Chair, Krupp Endowed Fund, Center for Integrative Medicine,
University of California, San Diego

Spirited and moving, *n of 1* teaches us so much about hope, resolve, and resilience in the face of cancer.

JUN J. MAO, MD MSCE
Laurance S. Rockefeller Chair in Integrative Medicine
Chief, Integrative Medicine Service
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