

"Extraordinary and easy-to-read... The definitive work on caffeine and health."—Neil Solomon, M.D., Ph.D.,
former Maryland Secretary of Health & Mental Hygiene

CAFFEINE

BLUES



**WAKE UP TO THE
HIDDEN DANGERS
OF AMERICA'S
#1 DRUG**

STEPHEN CHERNISKE, M.S.

Research and Clinical Nutritionist



PUBLISHER'S NOTE: This book is not intended as a substitute for medical advice of physicians. The reader should regularly consult a physician in all matters relating to his or her health, particularly in respect of any symptoms that may require diagnosis or medical attention.

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DON'T LET YOUR MORNING PICK-ME-UP TEAR YOU DOWN

- Caffeine can't provide energy, only chemical stimulation, an induced emergency state that can lead to irritability, mood swings, and panic attacks.
- Caffeine's ultimate mood effect can be letdown, which can lead to depression and chronic fatigue.
- Caffeine gives the illusion of heightened alertness by dilating pupils, quickening heart rate, and raising blood pressure. In fact, caffeine does not increase overall mental activity.

LET CAFFEINE BLUES BRING YOU BETTER HEALTH

For the children, who need to be nourished and protected.

ACKNOWLEDGMENTS

I would like to acknowledge my mother for her commitment to health and good nutrition more than fifty years ago, and all of the teachers, researchers, and scientists who over the years instilled in me a love of scientific inquiry. Particularly, I would like to thank Robert Garvin and Allan Watts for showing me that truth is most often found by looking beyond the conventional viewpoint.

I have also benefited tremendously from many scientists who paved the way. Jack E. James and Keryn Stirling produced a valuable analysis of the harmful effects of habitual caffeine use in 1982. Annette MacKay Rossignol and Linda Massey conducted groundbreaking research concerning caffeine and women's health. Roland R. Griffiths was an early researcher into caffeine's addictive properties, and Dr. Richard M. Gilbert published *Caffeine as a Drug of Abuse* in 1976, long before anyone else caught on. Thanks to Dr. Eric Strain and his colleagues who finally proved the existence of a caffeine dependence syndrome.

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FOREWORD

As a physician, I prescribe drugs with great care, because all drugs have effects and side effects. In addition, some can create a state of dependence. Clearly, caffeine is such a drug, and I find that very few people are aware of its side effects and dangers. In fact, most people do not even know how much caffeine they are consuming, and what concerns me is that this information is purposely withheld from consumers.

Caffeine is clearly addictive, completely unregulated, and its presence in our foods and beverages is often hidden! Almost daily I see a patient whose symptoms are made worse by the consumption of caffeine. The drug contributes to palpitations, panic attacks, hypoglycemia, gastritis, fatigue, insomnia, and PMS, to name a few. Some people are so sensitive to caffeine that they don't realize a fruit drink with hidden caffeine can cause their symptoms.

Although I know a few people who use caffeine prudently, most people I meet report drinking what you will discover are dangerous amounts of caffeine. Perhaps an occasional cup is safe, but by the time you realize that you can't make it through the day without caffeine, you're in trouble. Coffee, tea, soft drinks, caffeine-spiked beverages, and the other hidden forms of caffeine are promoted as harmless, energizing treats. I consider this deceptive and false advertising. And what concerns me most is the dramatically increasing use of caffeine by children, accompanied of course by large amounts of sugar or artificial sweeteners, which add to beverages' deleterious and addictive effects.

I find *Caffeine Blues* to be an extraordinary and important book. Knowledge is power, and this book will empower you to regain and protect your health. Finally, you have in your hands all the information you need to make an informed choice regarding caffeine use. Everyone needs to know the short- and long-term effects of caffeine. Everyone, including doctors, needs to become more aware of caffeine's role in cardiovascular disease, anxiety, depression, gastrointestinal disorders, and women's health. I've looked forward to this exposé for years, and I'm pleased that it is so well documented and readable. I recommend it to my patients and keep a copy in the waiting room.

I've known and learned from Stephen Cherniske for many years. His in-depth knowledge, experience, and scientific research on numerous topics in health and nutrition make him a natural to tell this shocking and critical story. I encourage you to trust his information and insight, as I do.

Caffeine Blues will make my job a great deal easier. I suggest that you take the book seriously, and discover the truth that's been hidden from you for far too long. This book not only blows the whistle on the caffeine industry, but it also provides you

with a proven strategy to kick the habit without suffering through weeks of withdrawal. For many of my patients, kicking caffeine has been an important step on the road to optimum health. Enjoy the journey.

—JESSE LYNN
HANLEY, M.D.

INTRODUCTION

“Coffee?” she intoned. “Thank you,” I replied, taking a cup from the hostess in the airport lounge. I was waiting for an early-morning flight to Anchorage to give a weekend seminar on clinical nutrition. The flight was delayed, so I had another cup as I read the newspaper. I didn’t notice when she refilled my cup.

When we finally boarded, a flight attendant had a cup of coffee in my hand before I had my seat belt fastened. Breakfast was served twenty minutes later, along with another cup of coffee. Looking back, it seems extraordinary how all this took place, but at the time it appeared perfectly normal. The entire five-hour flight was punctuated with “Coffee?” “Cream and sugar?” “Can I warm that up for you?” “Coffee, sir?”

Here I must tell you that I love coffee, and at that time was in the habit of drinking two cups every day. I also love to fly, because there are no clients, no charts, and, until recently, no phone. It’s usually one of the most relaxing times of my busy schedule. But this flight was a nightmare. I felt anxious. Instead of “zoning out,” thoughts raced through my mind with surprising intensity. I felt flushed and heated; I loosened my tie but could not get comfortable. Finally, lunch was served, which provided a brief diversion—and another cup of coffee.

By midflight, I was nearly panicked. For the first time in my life, I felt claustrophobic and fearful. I tried to figure out what was wrong, but I couldn’t put my finger on it. I tried to organize my lecture notes, but couldn’t concentrate. “Coffee?” the stewardess chimed. “Do you need a refill, sir?” I looked at my watch every fifteen minutes as the time dragged on.

Finally, the Anchorage area came into view. But as we approached the airport, the captain announced that weather conditions would delay our landing. Thirty minutes later, we were *still* circling the airport, and I did something I’d never done before: I yelled at the flight attendant.

“When the *hell* are you going to land this plane?” I snapped. Slightly taken aback, she placed a hand on my shoulder and answered as if she were speaking to a three-year-old. I felt like an idiot. “I’m really not feeling myself,” I muttered.

Flying north for these seminars is usually not a problem. I gain an hour from Pacific Standard Time, and normally arrive for my presentation refreshed and well prepared. This time was different. Nothing seemed to go right. The hotel van was crowded. The university had neglected to reserve a room near the lecture hall. A box holding my slides had opened inside my suitcase, and it took me over an hour to put them back in order.

I walked up to the speaker’s podium feeling frazzled and disconnected, and my lecture proved to be just as bad. For the first time in my professional career, I had

lapses of memory and omitted important information. A number of slides were upside down. The usual flow of my presentation was completely gone.

I consoled myself with the thought that I would do better the following day. Walking to the elevator, I was approached by a student who had taken a number of my previous classes. “Are you all right?” he asked. “You look terrible.” Back in my room, I had to admit he was right. Instead of my usual healthy glow, there were dark circles under my eyes and deeply etched wrinkles. I felt old.

Still, I reasoned, after a good night’s sleep, I’d be back to my energetic, positive self. Instead, I tossed and turned for hours until it hit me: insomnia. How many cups of coffee had I had that day? I couldn’t remember, but it had to be at least six, maybe more. Strange as it may sound, I was relieved that I finally had an explanation for my terrible experience. Firmly resolved to quit coffee, I fell asleep around 2 A.M.

I arose four hours later, feeling like I’d been hit by a bus. The first lecture began at 8 A.M., and I wanted to prepare well to make up for the previous day. A cold shower served to rouse my tired body, and I managed to arrive at the lecture hall looking half decent.

I carefully avoided the coffee urns that dotted the back and side aisles of the auditorium and, with a pitcher of water by my side, began the morning topic. By 10 A.M., I had a splitting headache. I announced a thirty-minute break and retreated to my room.

Ice did nothing. Aspirin did nothing. My hands were shaking. I felt nauseous and was suddenly afraid that if I blew the second day, student evaluations would be dismal. A single thought pounded in my head: “Have a cup of coffee. There’s too much at stake.”

One large cup of coffee later, the headache was gone. Within an hour, I was a new man, pain free and alert. It was hard for me to admit that I was addicted to coffee, but the hell I had been through the day before was clearly a drug overdose, and the worse hell I had faced that morning was clearly a drug withdrawal. Quite simply, I was feeling better because I had my fix. This realization was frightening and unacceptable to me, so I decided then and there to kick the caffeine habit.

I also left the conference resolved to research carefully the effects of caffeine. During six years of college, I had been told only that caffeine was a mild stimulant and its association with health disorders was unproven. I was also told that caffeine is not addictive. Since I knew from my own painful experience that the opposite was true, I reasoned that perhaps I had been snowed on the whole topic.

What I quickly learned was that *everyone has been snowed*—researchers, doctors, journalists, and especially the public. The deception has been well coordinated by an industry whose goal is quite simple: to get as much caffeine into your body as possible. If the caffeine industry can accomplish that, they have you as a customer for life. They know caffeine saps your natural sense of vitality, leaving you dependent on their products to get through the day. They know that you actually crave their products and, more importantly, that you suffer when you don’t consume them.

It’s a marketing dream, and it’s legal. No wonder more and more companies are jumping on the caffeine bandwagon, churning out products from specialized coffees and teas to “herbal” caffeinated energy pills, caffeine-laced fruit beverages, “supercharged” soft drinks, caffeinated beer, and even caffeinated bottled water.

A Clear and Present Danger

Cardiologists report that caffeine raises blood pressure. Endocrinologists acknowledge that it contributes to adrenal exhaustion. Neurologists document changes in brain biochemistry. Researchers identify correlations between caffeine intake and certain types of cancer. Internists say that coffee (even decaf) increases ulcer risk, and gynecologists say that caffeine intake contributes to hormone imbalance and a long list of health disorders in women.

Why aren't health warnings required on coffee cans? Why, in the face of this mountain of data, are physicians not warning their patients? Because there is no comprehensive view of the problem. Everyone is looking at their own little piece of the puzzle. In 1993, a study published in the *Journal of the American Medical Association* found that regular drip coffee (the kind most people drink) raises blood cholesterol levels. Nevertheless, the authors conclude that the increased risk to heart disease is small. Apparently, they're not talking to their colleagues who have found that caffeine also raises blood pressure, increases homocysteine (a biochemical that damages artery walls), promotes arrhythmias, and constricts blood vessels leading to the heart.

Viewed together, these effects present a clear picture of caffeine's contribution to the nation's leading cause of death. But in countless newspaper articles, the issue is presented in pieces, and the truth is diluted by "experts" who are unwilling to take a stand and instead qualify their findings by saying, "There's not enough evidence."

Caffeine Myths Debunked

In the pages of *Caffeine Blues*, I present the full scope of caffeine's effects on physical, mental, and emotional well-being, and debunk the following popular misconceptions about caffeine:

1. *Caffeine gives you energy.* Wrong. Caffeine does not provide energy—only chemical stimulation. The perceived "energy" comes from the body's struggle to adapt to increased blood levels of stress hormones. In most cases, this induced emergency state leads to well-defined side effects collectively known as caffeinism. Ironically, caffeinism is characterized by fatigue.
2. *Caffeine gives you a "lift."* Wrong. Using coffee for mood enhancement is a short-term blessing and a long-term curse. While the initial adrenal stimulation may provide a transient antifatigue "lift," caffeine's ultimate mood effect is a letdown, either subtle or profound. Advertisers and coffee "institutes" have kept this side of caffeine from public view. In Chapter 4, you'll find clear and unequivocal evidence of caffeine's role in depression and anxiety. What's more, caffeine is positively linked to panic attacks, a psychiatric disorder affecting an estimated 5 million Americans.
3. *Caffeine sharpens your mind.* Wrong. While caffeine users may feel more alert, the experience is simply one of increased sensory and motor activity (dilated pupils, increased heart rate, and higher blood pressure). The quality of

thought and recall is improved no more than the quality of music is improved when played at a higher volume or speed. In Chapter 4, you will find a convincing argument, backed by clinical research, that caffeine actually *decreases* overall mental acuity.

The Dark Side of Caffeine

There are plenty of people who don't want you to know the truth about caffeine. If it were just a matter of "coffee jitters," it wouldn't be such an issue. But as you will see, the effects of caffeine are far-reaching and can be quite serious. Importantly, women are at higher risk than men, and children are the most vulnerable to caffeine because of their limited ability to detoxify the drug. Caffeine stays in a child's brain and bloodstream much longer than an adult's, and subsequent doses produce a cumulative increase in stress and addiction. Is it any wonder that soft drinks, to which manufacturers add caffeine, have become the most widely consumed beverages in America? The truth is, Americans of all ages are *addicted* to the caffeine in soft drinks!

It's a fact that young children consume alarming amounts of caffeine, entering the cycle of dependency and nervous system dysfunction early in life. One study identified peak consumption periods at three, thirteen, and seventeen.¹ These children are set up for a lifetime addiction with serious health consequences. In the following chapters, we'll explore caffeine's connection to hyperactivity, learning and behavior disorders, fatigue, cancer, heart disease, ulcers, headache, allergy, PMS, birth defects, and more.

Caffeine Is Literally a Pain in the Neck

You'll learn that many of our physical experiences of tension and pain are directly related to the level of stress hormones in our bodies—and that caffeine acts as a pain trigger because it elevates blood levels of these biochemicals. Susan M., for example, came to me as a last-ditch effort to help with her neck and shoulder pain. She'd been to doctors, chiropractors, and acupuncturists, but the pain was relentless.

Susan listed four cups of coffee per day on her diet diary, and I soon learned that her "cup" was a sixteen-ounce mug. She was thus consuming over 900 milligrams of caffeine per day from coffee and, ironically, another 190 milligrams in her over-the-counter painkiller. Using the Off the Bean program outlined in Chapter 10, she gradually reduced her caffeine intake to almost zero. Three weeks later, she was pain free for the first time in twenty years.

This case is not an isolated incident. Over the years, I have counseled hundreds of patients who could trace the beginnings of their chronic pain to a time when they started drinking large amounts of coffee. Often, it was during their college years, or when they started working in an office. And usually there was the vicious cycle of coffee and stress. Perhaps you have found yourself in a similar situation.

Unsafe at Any Speed?

Newspaper and magazine articles appear every week identifying some health risk associated with caffeine. Invariably, however, they conclude with the absurd statement that “moderate intake” is no problem. The fact is that no scientist can tell you how much caffeine is safe for you to ingest because the effects of caffeine differ significantly from person to person. A multitude of individual differences enter the picture, including age, weight, sex, and numerous biochemical, psychological, and emotional factors. What is tolerable for one person may be excessive for another. Moreover, what is tolerable caffeine intake at one point in your life may actually cause health problems just a few years later.

If this sounds strange, remember that caffeine is a drug with cumulative effects over time. Also keep in mind that of all of the thousands of research papers that have been published on caffeine, *none have concluded that caffeine is good for you*. Rather, the continuing debate in the popular and scientific press focuses entirely on the degree to which caffeine is injurious.

Caffeine Blues will help you understand how your body works. With the right care, the human body is designed to last 100 years or more, but most of us fall apart after age sixty and die in our mid-seventies. I have drawn upon thirty years of clinical and research experience and will give you graphic case histories culled from thousands of client files. But in the final analysis *you* are the only scientist who matters, and the only laboratory you need is your body.

Health risks are rarely self-evident. For a cigarette smoker, the destruction of lung tissue occurs silently over many years—until one day it’s too late. Likewise, the first overt consequence of a high-fat diet is often a fatal heart attack. As a society, we therefore make education about such health issues a priority. We put warnings on cigarettes and encourage sensible eating. But I would like to remind you of a sobering fact. Cigarette companies fought successfully for years against warning labels, and only recently admitted that nicotine is addictive. The caffeine industry has refused even to disclose the amount of caffeine in their products. Big business watches bottom-line profits, and addiction to any substance means higher levels of consumption and more product sales. The caffeine industry knows this better than anyone.

Caffeine Alternatives: There Is Hope

Caffeine Blues presents a credible and carefully researched argument against the habitual consumption of caffeine, but, unlike other health exposés, it will not leave you feeling helpless. This book will give you a new view of life after caffeine as seen through the eyes of former coffeeholics. I am keenly aware that coffee plays a major role in most people’s lives. Without their morning “wake-up” cup and their midmorning and midafternoon jolts, most of my clients were concerned that they would not be able to function effectively.

These concerns led to my next research project: finding safe and effective alternatives to caffeine. I scrutinized botanical texts, ran hundreds of Medline

computer searches, and ultimately traveled to three continents researching every legal substance purporting to have energy-enhancing effects. This research was a real eye-opener. There was a tremendous amount of misinformation, especially concerning so-called herbal energizers. Most, like guarana, kola nut, yerba maté, and ma huang (ephedra), turned out to be nothing more than plant sources of caffeine and other stimulant drugs. Their mode of action is exactly the same as coffee: stimulation of the central nervous system resulting in adrenal stress. The fact that these stimulant products are found in health-food stores and claim to be “all natural” is simply part of the hype that fills the energy market. These “alternatives” to coffee are thoroughly debunked in Chapter 7.

Let me state this clearly: *A substance that purports to give you energy by stimulating your nervous system isn't giving you anything.* It's harming you! Using stimulants is like whipping a horse. They work for a short time, but prove disastrous when used repeatedly. My goal was to find substances that would nourish the body, not stress the adrenals, substances that would enhance the metabolic efficiency of the body in order to fulfill our inherent potential for vitality and wellness.

Eventually, I discovered a group of substances with true energizing properties. Just as a tune-up can enhance the efficiency of your car's engine, this group of vitamins, minerals, herbs, coenzymes, and organic acids can dramatically improve your body's production of energy. And I'm not just talking about energy in the sense of strength, stamina, and endurance. Imagine every cell in your body operating at a higher level of efficiency, including your immune system, brain, and nervous system. This “tune-up” has already changed countless lives, and you too can experience the exhilaration of peak vitality and what I call *high-level wellness*.

It's ironic that all the things you thought you could get from caffeine can in fact be obtained only by getting off it. These breakthrough alternatives are presented in detail and supported with abundant scientific and medical references in Chapter 10. I'll show you how to quit coffee by drinking delicious, satisfying, healthful alternatives and rebuild your natural abundant energy supply without harmful stimulants.

Beating the Caffeine Blues

Perhaps you've already thought about reducing your caffeine intake. But to make that decision, you need accurate information, and the facts on coffee have been slow in getting out. And you also need more than just information, since facts alone are not enough to motivate change. *Caffeine Blues* is designed to lead you through a discovery process that will increase your health awareness. For some people, awareness begins when they add up how much caffeine they consume every day. Then they connect their caffeine intake to the tired feeling they have when they wake up, or the roller-coaster mood and energy swings they experience throughout the day.

The challenge, of course, is to discover just how addicted you are to caffeine, and how that addiction affects the quality of your life. I suggest that you try kicking the habit for sixty days—the minimum amount of time you'll need to evaluate the benefits of a caffeine-free body and mind. For some people, I know that's asking a lot. But don't Worry. Chapter 10 will give you an effective, clinically proven, and pain-free

method for reducing or eliminating caffeine. This step-by-step Off the Bean program will enable you to free yourself from dependence on caffeine without the headaches, irritability, fatigue, and depression normally associated with caffeine withdrawal.

This program is not theory or conjecture. Thousands of people have already taken this important step, and are right now experiencing greater vitality, greater energy, and better health than they ever felt when they were addicted to caffeine. You can also enjoy these blessings if you really want them. The choice is up to you!

A Word about Notes

In compiling this manuscript, I initially handed my editor over 700 footnotes. “Take out these footnotes,” he said. “They make it look like a textbook”.

I protested. “I’m asking readers to consider a very controversial subject,” I argued, “one that purports to show beyond the shadow of a doubt that most everything they’ve heard about caffeine is wrong. How can I expect them to believe me if I don’t provide legitimate scientific support?” I also wanted the health-care community to pay attention to this material, and they would of course require careful documentation.

So we compromised. The key controversial statements are referenced, and notes are listed at the end of the book. This level of scientific integrity means that you can share the book with your doctor without the fear of being labeled a “health nut.” The research cited here can be found in any medical library. You can skip the notes or use them for further study.

CHAPTER 1

Coffee and Caffeine: A Dose of Reality

We have seen several well-marked cases of coffee excess. ... The sufferer is tremulous, and loses his self-command; he is subject to fits of agitation and depression; he loses color and has a haggard appearance. The appetite falls off, and symptoms of gastric catarrh may be manifested. The heart also suffers; it palpitates, or it intermits. As with other such agents, a renewed dose of the poison gives temporary relief, but at the cost of future misery. ... By miseries such as these, the best years of life may be spoilt.

—SIR T. CLIFFORD ALLBUTT and
DR. WALTER ERNEST DIXON in *A System of Medicine*, vol. II, London, 1909

Goatherds, Monks, and the Rest of Us

The origins of coffee are lost in legend, although the most popular tale traces its discovery to a goatherd dwelling in Ethiopia. According to the story, the goatherd watched his flock eat the bright red berries from a wild evergreen bush—and was subsequently amazed to see the animals leap about with wild abandon. He tried some of the berries himself, and soon he was leaping too.

By around the sixth century A.D., the plant had reached Arabia, where it was used as a food and medicine. Coffee berries were either fermented to make wine, or dried, crushed, mixed with fat, and eaten. It was not until the thirteenth century that Arab monks made a revolutionary discovery: Roasted coffee beans could be made into a drink. No more falling asleep at prayers! The news spread from monastery to monastery, then hit the streets with the world's first coffeehouses.

Everyone who tried coffee wanted more—and if they were travelers, they wanted to take it home with them. With lightning speed, coffee became a valuable trading commodity and spread to the world at large: first to Turkey, then to Italy and France, and finally to the rest of Europe by the mid-seventeenth century.

The Arabs maintained strict control of the coffee trade until smugglers from other countries got hold of the seeds. The Dutch brought coffee to Java and Ceylon, the French transported it to the West Indies, and a Brazilian obtained coffee for his homeland. Today coffee is cultivated widely in regions between the Tropics of Cancer and Capricorn: Central and South America, Java, Sumatra, India, Arabia, equatorial

Africa, Hawaii, Mexico, and the West Indies.

Most American colonists drank tea, a caffeine-containing leaf from the *Camelia senensis* bush, until the boycott against King George's tea tax climaxed with the Boston Tea Party in 1773. From that point forward, coffee grew in popularity as America's national drink. Americans are now the largest consumers of coffee in the world, drinking over 420 million cups per day, or about one-fifth of the world's total annual supply. In America, coffee wins hands down as the most popular substance containing caffeine, with soft drinks, tea, and chocolate as runners-up.

From Plant to Percolator

The word *coffee* comes from the Arab word *qahwah*. The botanical name of the original species discovered in Africa whose beans are grown around the world today is *Coffea arabica*. There are three general groupings of coffee: Brazils (all *Coffea arabica* grown in Brazil), Milds (all *Coffea arabica* grown outside of Brazil), and *Coffea robusta*, a variety of coffee grown at lower elevations and generally considered to be inferior in quality to *Coffea arabica*. Robusta beans contain nearly twice the caffeine of arabica and are also more acidic. Mass-marketed brands of coffee contain primarily robusta, whereas specialty coffees tend to be made primarily from arabica beans.

One reason coffee spread so quickly around the globe is because it's an exceptionally hardy, self-pollinating plant. Though it's usually referred to as a tree, coffee is actually an evergreen shrub that, when cultivated, is pruned to a height of twelve feet or less. An arabica tree produces only about one to two pounds of coffee beans per year, so supplying worldwide demand requires an incredible amount of space. We'll discuss the problems associated with coffee cultivation in Chapter 7.

Coffee berries—the fruit of the plant, which contains the beans—are usually harvested by hand and undergo a lengthy processing procedure. Once removed from the berries, the beans are fermented, washed, dried, hulled, and peeled before they are roasted. After roasting, the beans are ground and then they are ready to perk, brew, or drip into your favorite cup of Java.

A Cupa Cupa Cupa Cupa Chemicals

Caffeine has received a great deal of attention ever since it was identified as the principle stimulant in coffee (1820). But it seems that every year, even more noxious ingredients are isolated in coffee. In 1992, researchers found another stimulant compound distinctly different from caffeine that may be responsible for coffee's gastrointestinal effects.¹ To date, over 700 volatile substances in coffee have been identified, including more than 200 acids and an incredible array of alcohols, aromatic compounds, carbonyl compounds, esters, hydrocarbons, heterocyclic compounds, and terpenoids. Nonvolatile substances in coffee include caffeine and other purines, glycosides, lipids, melanoidins, caffeic acid, and chlorogenic acid.

And that's just the stuff that's *supposed* to be there. Coffee often contains a raft of pesticide residues and other contaminants such as nitrosamines, solvents, and my co-

toxins. These carry well-defined health risks, and some are carcinogenic.²

Survival of the Bitterest

Caffeine is produced by more than eighty species of plants, and the reason may well be survival. As it turns out, caffeine is a biological poison used by plants as a pesticide. The caffeine gives seeds and leaves a bitter taste, which discourages their consumption by insects and animals. If predators persist in eating a caffeine-containing plant, the caffeine can cause central nervous system disruptions and even lethal side effects. Most pests soon learn to leave the plant alone.

Which is not to say that coffee is impervious to insects. On the contrary, the modern agricultural practice of growing coffee plants in dense plantations fosters the development of insect infestations. Enormous amounts of chemical pesticides and herbicides are then applied to control those infestations. In fact, coffee is the most heavily sprayed food or beverage commodity on the face of the earth.

Caffeine: Romancing the Drug

When coffee was first brought to European cities in the seventeenth century, people were repelled by its color and taste. They complained that it smelled and looked like roofing tar. But after they experienced its stimulating effect, the beverage was quickly proclaimed to be one of nature's miracles. Historians record this phenomenon without noticing the irony of what they are writing. Caffeine is, after all, a psychoactive drug, and human beings tend to crave substances that alter their state of mind—among them caffeine, morphine, nicotine, and cocaine. Indeed, all of these alkaloids are chemically related and, while they produce widely different effects, all are poisonous.

Caffeine is considered harmless simply because it is so widely used. Obviously, from a scientific perspective, that is not valid reasoning. What's more, if caffeine were proposed today as a new food additive, the FDA would never approve it. Any substance that causes such extreme reactions—heart palpitations, anxiety, panic, insomnia, and even birth defects—would be treated by the FDA as a new drug and denied status as a food additive. Yet amazingly, even healthconscious people, many of whom try to minimize their use of additives, preservatives, and drugs, consume high amounts of caffeine with no thought to the consequences.

My goal in is to provide you with the facts you need to make informed choices about your own caffeine consumption. Until now, reliable information about caffeine has been unavailable, and there are some intriguing reasons for that. First of all, most people are generally unaware of the amount of caffeine they are ingesting. Manufacturers can add caffeine to any food or beverage they want without disclosing the amount. (More about that in Chapter 7.) Few people know how much caffeine is in a cup of coffee or a can of soda, so they have no way of evaluating the danger. Instead, they rely on what they hear and read in the media, and that information is rarely accurate.

In his landmark review of caffeine and human health, R. M. Gilbert concludes: "If more were known about caffeine's effects, and if what is known were known more

widely, the damage done by caffeine might very well appear to be intolerable”.³

Industry Feathers in the Academic Nest

The caffeine industry has generated a tremendous amount of propaganda and disseminated it successfully throughout the scientific, medical, and public arenas. But you won't see SPONSORED BY THE CAFFEINE INDUSTRY stamped across the top. This material is invariably published by foundations and institutes with very academic-sounding names. But the fact is that many of these august bodies are heavily influenced by the caffeine industry, and so are the reports you read and hear.

The International Life Sciences Institute, for example, has been churning out studies and information to government, academic, and public institutions for decades. Few know that it is supported by the caffeine industry. In 1985, the ILSI merged with the prestigious Nutrition Foundation, an organization whose mission statement includes the acknowledgment that it is “created and supported by leading companies in the food and allied industries.” Prominent among the trustees of the combined ILSI/Nutrition Foundation are executives from the Coca-Cola Company, PepsiCo, Hershey Foods, NutraSweet, and Procter & Gamble.

A Case in Point

If you were curious about the dangers of caffeine, you would undoubtedly come across a brochure entitled *What You Should Know about Caffeine*. You would find this ubiquitous brochure on information racks in hospitals, pharmacies, public health offices, or in your doctor's office. It's available through the mail and on the Internet. *What You Should Know about Caffeine* is published by the very official-sounding International Food Information Council in Washington, D.C. The brochure does not list sponsors or disclose an industry affiliation. When I requested specific details of industry sponsorship, I received another glossy color brochure that mentioned nothing about which organizations supply the funds to disseminate all this information.

After pressing the issue through several phone calls, I finally received a list of IFIC “supporters,” including Pepsi-Cola, Coca-Cola, M&M/Mars Candy, NutraSweet, Nestle, Hershey Foods, Frito-Lay, Procter & Gamble, and the Arco Chemical Company. Oddly enough, the IFIC “partners” also included the Association of Women's Health, Obstetric and Neonatal Nurses; the National Association of Pediatric Nurses Associates and Practitioners; and the Children's Advertising Review Unit of the Council of Better Business Bureaus, Inc.

This strategy perfectly illustrates the approach of the caffeine industry: aligning itself with professional health organizations and scientific foundations. What better way to head off criticism that its products are harming the American public?

Is the Information Accurate?

What You Should Know about Caffeine states: “Caffeine does not accumulate in the