"Whether it's a minor sugar craving or a serious threat to relapsing with drugs and alcohol, Dr. Manejwala explores the root cause of cravings and ways to combat them."

••• **Drew Pinsky, M.D., host of *Dr. Drew On Call***

CRAVING

WHY WE CAN'T SEEM TO GET ENOUGH

OMAR MANEJWALA, M.D.

Craving

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Omar Manejwala, M.D.

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Summary: "A nationally recognized expert on compulsive behaviors explains the phenomenon of craving and gives us tools to achieve freedom from our seemingly insatiable desires by changing our actions to remap our brains. When we find ourselves wanting something strong enough, we'll do just about anything to get it—sometimes at the expense of our bodies, brains, banks accounts, and relationships. So why do we sometimes have the irrepressible feeling that we need something—such as food, cigarettes, alcohol, or sex—that we really just want? And how do we satiate that feeling without indulging it? In *Craving,* Omar Manejwala, MD, translates the neurobiology of this phenomenon into real and accessible terms, explaining why we just can't seem to get enough. He then gives us tools and guidance to find satisfaction without giving in to our cravings. Dr. Manejwala explains how and why our brain drives behavior, how to change the part of our brain that fuels our cravings, the warning signs that craving is evolving into addiction, why craving is the most difficult component of addiction to address, why self-help and spiritual groups that use models like the Twelve Steps are so effective at changing behaviors, receiving encouragement, and remaining accountable." — Provided by publisher.

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• • •

Introduction

Have you ever promised yourself you would stop doing something, worked hard to avoid doing it, had no intention of doing it . . . and then did it anyway? Whether it's that diet you were following so well, a promise to your spouse that you would stay sober *this* time, or a vow that you would never gamble your paycheck away again, the inevitable always seems to happen: despite your best intentions, you found yourself engaging in the same self-defeating behaviors. The worst part is, in many cases, you never intended to drink that drink, order that dessert, or step into that casino. *It just sort of happened.*

What explains the mysterious urge to do something that has caused so much damage in the past? What makes that simple thought pop into your mind? When you are doing everything in your power to do better, when you are at your most committed, what brings that powerful image of chocolate into your brain, leading your car toward the grocery store just minutes before it closes? What convinces you to give up what you worked so hard to achieve?

Craving: Part Want, Part Need

Whether it's the smell of the great outdoors, a favorite jazz standard, or the smile on your son's face, desire is a universal emotion. It's the cause of much joy and is responsible for countless success stories. We find it nearly impossible (and depressing) to imagine a life without desire. Our healthy and productive desires are the core of what makes life exciting and fun. Yet sometimes these desires become so intense that they start to feel less like wants and more like needs. When these needs go unmet, you may start to get restless or impatient. After a

time, you may become increasingly uncomfortable. If the desire is for something helpful to you, something you really do need, or something that will make your life better, then that's a good thing. It's a healthy craving. But for many people, powerful, enduring cravings are anything but healthy, and they can make life downright miserable.

A good working definition of "craving" is a strong desire that, if unfulfilled, produces a powerful physical and mental suffering. Everyone has experienced this suffering at one point or another, but when these feelings endure or recur frequently, they can be the source of much misery. Cravings are at the heart of all addictive and compulsive behaviors. For some people, it can begin as innocently as a trip to a restaurant, with no intention of drinking, but just to get a meal or visit a friend. The next thing they know, they've ruined their sobriety. For others, it's the "apparently irrelevant decision" to take a different way home from work, a route that just happens to take them past the doughnut shop. Several days later they wonder how their progress toward their fitness goals were demolished. In each case, whether it's the intense, overwhelming, fist-pounding-on-the-bar urge to drink or the ever-so-subtle thought that taking a different road home is perfectly safe, your brain tricks you into repeating self-destructive patterns.

As a psychiatrist and addictionologist, I have seen people work tremendously hard to achieve success only to have all that hard work undermined by what seemed to be simple, innocent decisions. As an expert on the link between the brain and behavior, I've also worked with thousands of people who have been able to reduce their cravings and reduce the effect that cravings had on them by following a few simple actions. These successful people developed an understanding of how—and why—they crave. More important, they took specific and simple actions that resulted in a sense of satisfaction and ongoing freedom from their obsessions. If they suffered from addiction, they achieved more than just abstinence—

they experienced a contented recovery and were liberated from the overwhelming urge to engage in self-destructive behaviors. If they didn't suffer from addiction, they experienced relief from cravings that previously had continually undermined their success. And even more important, when they craved again, they were able to act differently. Achieving freedom from cravings and their effects takes work, but with the right actions, you can get these results.

Today, in the age of media and the Internet, your brain is constantly exposed to images and sounds that can function as cues to trigger craving. "Neural marketers" design advertising with an understanding of the brain and how images and sounds affect purchasing decisions. Billions of dollars are poured into the science of advertising and marketing for one reason: they work. And they work because of your brain and the way it craves. Whether it's subtle product placement in a movie or your favorite television show, or an ad you don't even notice on the sidebar of your Internet searches, your brain is constantly accepting input at a feverish pace. And yet most people believe they are immune to the effects of this exposure and the cues that trigger cravings. As a result, people who are trying desperately to change their behavior are caught off guard when something that they believe is harmless subtly drives them toward doing precisely what they are working to avoid.

And yet the solution can't be simply removing cues. I learned that years ago when one of my patients, an IV heroin addict, checked out of treatment after a friend had accidentally spilled talcum powder on a table. His brain was activated by the image of the powder, and the next thing you know he was out of there. Another patient of mine, an alcoholic Vietnam veteran with post-traumatic stress disorder (PTSD), could not drive anywhere without seeing tall trees along the road that reminded him of the jungle. He described the feeling he got when seeing those tall roadside trees as "proof that I would never fully return home." There is obviously no way to identify and remove all the cues that trigger our cravings, though it is helpful to

remove the big ones if you can. This is why bartending is usually *not* a good job for a newly sober alcoholic and why working at a bakery is not wise for someone trying to lose a lot of weight. We'll never get rid of all the trees and talcum powder in the world, however. It's our brains that need to change.

Members of Twelve Step addiction recovery programs figured this out a long time ago. In 1939, the founders of Alcoholics Anonymous described a "strange mental twist" and "curious mental phenomenon" that occurred in *sober* alcoholics that tricked them into taking another first drink. A Japanese proverb states, "First the man takes a drink, then the drink takes a drink, then the drink takes the man." But if this cycle happens over and over, with dismal consequences, what makes a person take the first drink again?

Members of Twelve Step programs have learned that changing their behavior affects both the intensity and the frequency of cravings, as well as the likelihood that they will act on their cravings. Many long-sober members of these fellowships note that it has been years, or even decades, since they craved their drug, alcohol, or addictive behavior. Even when they do experience such cravings, they don't act out on their addiction. Why? What makes them and others who have been successful different?

The short answer is that cravings originate in the brain, and behaviors can and do change the brain. Our experiences, actions, and thoughts produce changes in areas of the brain that are responsible for craving, choice, and decision-making. In fact, the emerging discipline of the neurobiology of spirituality demonstrates that key components of spirituality also affect the brain in remarkable ways. We are learning that spirituality changes the brain and is experienced there. His Holiness the Dalai Lama has focused significant recent efforts, in collaboration with neuroscientists, on the specific ways in which "the mind changes brain matter."

People trying to overcome cravings, whether they are related to an addiction or to another compulsive behavior, can benefit from

these same changes. To begin, we need to set aside the naïve assumption that our future decisions and choices will not be affected by our current experiences or that we can usually trust what we think. Indeed, changing our thoughts, actions, experiences, and spirituality—and in the process changing our brains—is what will help us to finally feel satisfied and free from the desperation of not being able to get enough.

The Chapters Ahead

Why do cravings matter? In chapter 1, I'll answer that question specifically. Why is so much advertising designed to create cravings? As you'll learn in this book, many of the strategies people use to reduce their cravings backfire and *actually lead to more cravings*. Cravings matter because they have the potential to lead to behaviors that undermine success, contentment, and joy. Cravings can wipe out months or even years of hard work. Cravings can lead people to throw away all the things that really matter to them in exchange for a short-term fix that is often over before it even starts. Cravings matter because they are powerful, unexpected, and seemingly out of our control. But to understand how that is not entirely true, how we really can eliminate our cravings, we need to understand how decisions are actually made.

Chapter 2 focuses on how your brain drives your decisions. Most people have a basic understanding that chemicals in the brain, called neurotransmitters, affect our moods. What you may not know is that, in addiction, the shape, structure, and function of your brain cells actually change in response to your experiences. Addiction is *not* just a chemical imbalance. Addiction is the result of many complex changes in the circuitry of the brain. The neurotransmitters change, the proteins change, the cell structures change, and the centers of activity (networks of cells) change, making our thoughts and feelings change too. Some of these changes are temporary, some are longer lasting, and some appear to be permanent. In chapter 2,

you will learn which parts of your brain are involved in craving and decision-making when it comes to compulsive, self-destructive behaviors. We'll discuss the chemistry of the brain and its relationship to craving, as well as the way thoughts, behaviors, and actions are linked to changes in the brain.

If we never acted on them, cravings would simply be unpleasant, extraordinarily uncomfortable experiences. But it's the related self-defeating actions that lead to so much pain, heartbreak, and misery. In chapter 3, we'll review the link between cravings and actions. We'll answer questions such as, "What makes some cravings lead to behavior changes, while others are just nuisance thoughts?" and "How closely are cravings linked to behaviors, and how do the more subtle cravings affect behavior?" To complete the cycle, we'll explore how destructive behaviors themselves actually lead to increased craving.

People use the word "craving" to mean all sorts of things. We may crave attention, success, love—but we also crave sex and chocolate, or for those with chemical addictions, alcohol and drugs. Are all these cravings the same? What properties do the basic cravings for healthy behaviors and cravings for self-destructive behaviors share? How are cravings for chocolate similar to cravings for crack cocaine, and how are they different? Addiction treatment programs have learned long ago that alcoholics generally cannot safely use other intoxicating substances for long without often succumbing to relapse with alcohol, and the same goes for those who were primarily addicted to drugs. They often say "addiction is addiction is addiction." But many programs for drug addiction allow coffee consumption and nicotine use. Are recovery programs themselves addictive? Chapter 4 examines the relationships between various types of cravings and explains some of the key differences between craving chemicals and craving behaviors. The bottom line is that there are key differences; nonetheless, many of the approaches used to manage cravings in addiction are also successful when working to manage other types of cravings.

Many people do not realize that their experiences, thoughts,

and actions change their brains. And these changes are not simply increases or decreases in certain brain chemicals. Experiences and behaviors have been linked to increased sizes of brain regions, increases or decreases in key proteins involved in responding to neurotransmitters, and even changes in the structure of brain cells (neurons) themselves. How does this happen? What do we really know about how thinking changes the brain? A study of monks who practiced compassion meditation demonstrated changes that occurred during meditation. No surprises there. But when researchers went back and studied the monks' brain activity between periods of meditation, they found *persistent* changes—alterations in their brains that continued even when they weren't meditating. Behaviors, thoughts, and experiences have *residual* effects on brain function, which are partly due to changes that occur in the brain. Chapter 5 explores the neuroscientific concept of "plasticity"—specifically how the brain changes in response to input. These changes are critical to long-term freedom from cravings.

Members of Twelve Step programs are intimately familiar with the relationship between craving and relapse, and in this book I emphasize that much can be learned from the collective experience of people in these programs. Many recovering addicts in Twelve Step programs have struggled with cravings for much of their lives while using, and yet so many of them report that it has been months, years, or in some cases decades since they've craved their drug. How have these people managed to dramatically reduce or eliminate their cravings? Successful, long-time-sober Twelve Step program participants have discovered a relationship between things that wouldn't seem to be connected. For example, reviewing your own "character defects" reduces the urge to drink. Making amends, social connectedness, an awareness of powerlessness, and a sense of a "higher power," altruism, service to others, and meditation eliminates or severely reduces cravings. Twelve Step members have learned that these elements must be done together to work. Skipping a few results

in relapse in many cases; thus, there is something about the interplay between all these actions that produces the changes needed to eliminate cravings. Furthermore, it seems that, at least when it comes to addiction, a sustained, ongoing effort is needed to prevent a return to earlier patterns of craving and relapse. Why is that? We'll explore the answers to these questions and provide a framework for understanding the basic brain science of Twelve Step recovery in chapter 6. Addiction is a brain disease, and recovery is in part a brain phenomenon, and what we know about just *how* that works is the focus of this chapter.

Whether it's weight-loss support, group exercise, Twelve Step recovery, or even online communities like Twitter and Facebook, people who succeed at changing negative behavior often discover that a group can do what the individual cannot. Even the most strong-willed, determined people can do more when buoyed by the power of a group. Feeling a powerful sense of belonging, identifying with others, and experiencing hope when we see others succeed are just some of the reasons why groups help. In many cases, a healthy sense of competition spurs us to greater success; in others, the self-worth that comes from helping others in the group who are still struggling makes the difference. Each of these social experiences changes us in profound ways, and in most cases, we aren't aware that we are changing. Sure, some of us may feel better in groups (and many people don't), but what we don't realize is how, days or even weeks after attending a group meeting, we behave differently, think differently, and make decisions differently, simply because we connected with others. Each of the various ways that we form connections with other people has a correlation in the brain. In the early 1990s, a special type of nerve cell was discovered in nonhuman primates called the "mirror neuron." These nerve cells, located in parts of the brain involved with planning actions, seem to be responsible for the way that we imitate behaviors we observe in others. In a classic research paper, the Italian neuroscientist Giacomo Rizzolatti and

colleagues discovered that some neurons become active whether a monkey performs an action itself or sees someone else perform that same action. More recent human research suggests that these regions of the brain link actions with the observation (or even the sound!) of actions in others. In other words, when others act in certain ways, and we observe or hear them, our brains change. In chapter 7, we'll explore the science behind the power of the group and its influence on behavior. We'll begin to understand how groups influence people in a way that individuals simply cannot.

Over the years, I've treated thousands of addicts, many of whom were downright brilliant in every sense of the word: neurosurgeons, physicists, even addiction psychiatrists who just couldn't stop using. Keep in mind, these are people who are bright, clearly motivated, and in some cases, possess more knowledge about addiction than 99.999 percent of the population. In my early career, even though *I* was treating *them*, they knew much more about addiction than I did. Even so, they just couldn't stop using. Whenever I encountered someone like that, I always asked the same question: "What were you thinking?" That's a question that sounds different to different people. Some consider it to be criticizing, while others hear it as curious. But the answer I got, in nearly every case, was the same: "Doc, I was so *stupid*." Now, I had tested these people; I knew their IQs. Psychologists may disagree on how to measure intelligence, but one thing was absolutely clear: no matter how you measure it, there was no way to describe these incredibly bright addicts as "stupid."

In other words, the best explanation these brilliant addicts could offer to explain their addictive behavior was *the one explanation that could not possibly be true.* Why is that? How do people who are so intelligent and successful in other areas become convinced that their behavior is caused by something that makes absolutely no sense and cannot be accurate? In chapter 8, we investigate how and why that happens. The correct explanation—that their brains have been hijacked by the disease of addiction and their decision-making with

respect to addictive behaviors is not consistently under their control —is so profoundly unacceptable to them that they unconsciously reject it as impossible. In many cases, these men and women had never met a mountain they couldn't climb, and yet they were brought to their knees by a chemical. They cannot accept the notion that they are not in control, and so prefer the explanation that they were "stupid." They believed, at their very core, that they were immune to the effects of the disease. The extraordinarily naïve perception of immunity is at the heart of addictive behaviors—and of craving. It is extremely difficult for people to accept that forces are influencing their decisions without their awareness. And yet, with craving, that is exactly what is happening.

In the mid-1980s, psychologist G. Alan Marlatt, Ph.D., proposed that apparently irrelevant decisions (AIDs, he called them) impact relapse. For example, an addict who finished residential treatment three weeks ago might decide to take a familiar route home from work and, in doing so, bumps into an old friend who suggests they get high together. The addict's brain tricks him into believing that this time things will be different, and so he gives in and gets high. Three days later, when he is lying in a bed on the detox unit of the local hospital, he wonders, "What happened?" As he reviews the events leading up to his relapse, he concludes that he never should have let his friend talk him into getting high. He never concludes that he bumped into his using friend because he walked home the same way he used to go when he was actively using drugs. He never becomes aware that the familiarity of the route was precisely the warning sign. He never realizes that the feeling of comfort was itself the red flag! The apparently irrelevant decision of taking a familiar route home remains outside of his awareness. He trusted his gut. And so, four weeks later, it happened again.

Marlatt used AIDs to describe behaviors that contribute to relapse. But in my experience, there is another, entirely different set of AIDs that contributes to freedom from compulsive behaviors.

We'll explore these *positive* AIDs in chapter 9. Like their destructive counterparts, these positive AIDs also usually operate outside our awareness, but they often make all the difference. Diet gurus learned long ago, for example, that going to the grocery store when hungry is a terrible idea for anyone trying to control their weight. So that's a simple, relevant decision. But several years ago I treated a woman who worked the overnight shift, had breakfast, then shopped for groceries at the discount store near work before driving over an hour to get home. She did this because the grocery stores near her home were too expensive. When she finally changed jobs, she gained weight. She assumed it was the stress of a job change, and that may have been a contributor. But when we analyzed her choices, we discovered that the process of eating breakfast and then shopping afterward was driving her to make healthier shopping choices. She never intended that . . . *it just happened.* We worked together to schedule her shopping trips and arranged for an accountability partner to accompany her to the grocery store. Within a few months she had restored her healthy weight and, much more important, the sanity that comes with freedom from compulsive behavior. Although this is a simple example, there is a set of positive apparently irrelevant decisions associated with all cravings that can lead you toward healthier choices and freedom from craving and compulsivity.

In my experience, that freedom and the sense of satisfaction that comes from making healthy decisions without the pressure and destructiveness of cravings is within reach for nearly everyone. The tenth chapter focuses on hope, joy, and recovery. Most research on cravings is focused on people who are unwell, people in the throes of addiction. What do we know about recovery? What is different about men and women who have managed to gain freedom from their self-destructive behaviors and who are now satisfied and live deeply contented, productive, and fulfilling lives? How do healthy decisions and behaviors sustain and develop these changes? What actions consistently sustain healthy, recovery-based living? We now

know many of the answers to these questions, and they form the basis of contented, joyful, and successful living.

At the end of the book you'll find a list of tips for dealing with a variety of cravings. Some tips are good rules of thumb for coping with any craving, while others are very specifically tailored for certain substances or behaviors. It's important to find a strategy that works for you and doesn't leave you feeling discouraged; eventually you'll land on a positive and healthy strategy.

Craving is the core feature of all compulsive, self-destructive, and addictive behaviors. Cravings can undermine years of hard work and dedication. They can lead to heartbreak and despair. In the long run, cravings, and the behaviors that cause and result from them, are truly optional. In the case of cravings, the adage that "suffering is optional" proves to be exceedingly true. Healthy, positive choices and contented living are possible, but require thoughts, behaviors, experiences, and, in a broad sense, spirituality to sustain them. This book explains what we know about how that happens and how you can make it happen for you.

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Craving: Why It Matters

What Are Cravings?

As early as 1899, aromatic spirits of ammonia and hot water were recommended in the *Merck Manual* (a medical textbook) as treatments for alcohol *cravings*. By the late 1940s, craving was described as a symptom of opiate withdrawal, and by the 1950s the term extended to other drugs. For many years since, craving has usually been described as a symptom of withdrawal from alcohol and other drugs. We now know that people who have addiction can experience cravings even after years or decades of abstinence, long after their withdrawal symptoms have vanished.

Everyone has, at some point or another, experienced craving. Craving is a universal phenomenon, and while people may not easily define it, everyone generally knows what it is.

Cravings can be defined as intense desires that produce unpleasant mental and physical symptoms if not satisfied. For some people, that's putting it mildly. Part of the problem in talking about cravings is that people use the word to mean so many different things. I have seen people go to extraordinary lengths to escape the discomfort of cravings, to the point of jeopardizing their health, their family,

their jobs, or even their own lives. Like any other physical and psychological phenomenon, cravings can vary in intensity, and they can be brief or feel excruciatingly long. I have had patients describe cravings that lasted weeks, months, or even years. Closer inspection usually reveals that the craving itself didn't last that long, but the experience was so intense and recurrent that it seemed like it lasted an eternity. Most cravings last no more than a few hours, but they certainly sometimes feel like they will last forever.

You don't *crave* everything you *want*. Desire and want are obviously universal, and while people may occasionally (or even often) confuse wants for needs, by and large, the difference is clear. You might *want* a promotion at work, a date with that woman who lives down the street, a beach body, or a better return on your 401(k), but those aren't really needs, and they (usually) aren't cravings. These wants and desires are part of the joys and spice of life, and philosophers and poets have known for centuries that having the material things you think you want may not make you happy. Desire makes life interesting. Friedrich Nietzsche once wrote that "ultimately it's the desire, not the desired, that we love." And the sixteenth-century philosopher Francis Bacon wrote in his essay "Of Empire":

> It is a miserable state of mind, to have few things to desire, and many things to fear; and yet that commonly is the case of kings.

Wants, desires, passions, and interests are the subjects of philosophers, poets, and religion. They are also the focus of much fascinating science. However, they're not what this book is about. In this book, we will be focusing on cravings rather than simple wants or desires. Cravings, distinct from desires, are truly unpleasant and disturbingly intense, and in this context, are directed toward substances or behaviors that are really not good for us.

Cravings can be much more than simply unpleasant. In addictions (whether chemical addictions like alcoholism or process addic-

tions like gambling), cravings are often the very reason a person acts out on their addiction. Numerous studies have shown that cravings predict relapse or acting out on the craved substance or behavior. For example, studies have shown in alcoholics, gambling addicts, and cocaine addicts (among others) that when people crave, they are more likely to relapse. In other words, craving matters because it actually drives many of the self-destructive behaviors of addiction.

These intense, overwhelming cravings that are core to addictive behaviors are one end of the spectrum, but not all craving is addiction. Rather, cravings come in all sorts of shapes and sizes. There is a difference between an urge for something and a gut-wrenching, devastating, absolute *need* to have it. The simple interest, desire, or even urge to have or do something can of course also be self-destructive. A person on a diet who pulls off the highway on the way home from work to buy a large, sweet coffee drink may not be addicted but is, nevertheless, undermining his own goals and success.

Urges or Cravings?

To understand some of the differences between urges and cravings, it's important to understand the difference between being truly addicted to something (a substance or a behavior) and abusing or overusing it. Let's take the example of alcohol. Some people really want to cut back on their drinking. They haven't lost jobs or relationships because of their alcohol use, they haven't had legal consequences from it, and they've never experienced withdrawal (sweats, tremors, increased blood pressure and pulse). They haven't become tolerant to the effects of alcohol either (needing to use more and more to get the same effect, or experiencing a diminished effect

when drinking the same amount that they used to). They just want to drink less.

Perhaps such a person might simply want to cut back for health reasons or because a few glasses of wine in the evenings is interfering with restful sleep. Maybe she doesn't want the calories in that glass of wine, or maybe she just wants to be more alert when interacting with her children. I've actually worked with many parents who were motivated to cut back on their drinking for this very reason. For them, it was important to be more alert and present during the evening hours with their children, and they wanted to be as clear-thinking as possible during those intimate family times.

When a parent in that situation decides to cut back on drinking, say, from three glasses of wine a night to one, several things can happen, and what does happen can paint a picture of what, if any, underlying problems may exist. If you want to know whether a behavior is a problem or not, don't just look at what happens when you do it. *Look at what happens when you don't.* One group of parents in just this situation will cut back to one drink a night and never miss the other two. In fact, they may ask themselves why they didn't cut back before. They'll feel better about themselves, maybe shed a few pounds, feel more alert, and take some pride in following through with what they set out to do. Or they may simply reduce the amount they drink and not spend a minute thinking about it. They never end up missing the other two drinks, except maybe on New Year's Eve or a special occasion when they feel a slight urge and tell themselves, "I think I might like to have another," which they do and then return to drinking a single glass of wine per night, and perhaps not even every night. You probably know many people like this (maybe it's even you): they set their mind to it and follow through without a thought, or even a struggle.

Then there is another type of person who drinks. This guy may decide, for a variety of reasons, to cut back to one drink a day but really notices the absence of those other two drinks. Maybe not at

first—maybe a few days, weeks, or months later—but the absence is clearly noted. He may start to tell himself, "I'm not going to drink more than one"; he may make commitments to himself or maybe even to his wife or best friend. He feels the urge to drink more, but he's committed to his goals. He stays at one drink, maybe slips up and has an extra one or even two on occasion, but on the whole he sticks to it. If he's honest with you, he'll admit he often wants another, but his goals are more important to him than that extra drink. He might tell you he craves that second drink, but he can live without it. It's not so intense that he's forced to give in—he can still resist it. It's an urge or maybe a mild craving. But it passes, and he stays on track with the goals he set for himself.

At times in this book we'll discuss the types of mild cravings (properly speaking, these are more "urges" than cravings, as they are milder and rarely yielded to) that this man is experiencing. His discomfort can be managed with some specific strategies to reduce the unpleasantness of these urges and can give him a better shot at a more personally satisfying approach to meeting his goals. But nobody would say he is addicted to alcohol, that he is an alcoholic, or that he *needs* those extra drinks. In these examples, and the others you will read in this book, you can replace drinking with any other behavior you are trying to change, such as eating sugar and carbs, gambling, or Internet compulsions, and the principles will generally be the same. (In chapter 4, we'll discuss how most of these behaviors, when they become compulsive, are essentially the same, and we'll also explore some of the differences that do exist.)

Then there is another type of person who is trying to change her behavior. This person may really recognize she is drinking too much. Her husband may be pestering her to cut down. She may have received a DUI or called in late to work on a Monday morning after a bad drinking bender. Or maybe it hasn't affected work at all, but she did some things she was embarrassed about, such as "drunk dialing." Clearly, she hasn't always been this way. She wonders if it's a

phase. The idea of stopping drinking altogether is pretty unattractive to her. She doesn't want to stop drinking forever. She enjoys drinking. She's tried to cut down and she can . . . for a while. Sooner or later, though, she's back to her old ways, and maybe worse. Often, but not always, when she is cutting back on her drinking, or stopping for a while, she experiences a strong desire to drink—a *craving*.

These cravings can take many different forms, as we'll explore later in this book. Sometimes they can show up as an innocent thought: "I can have just one more," or "I've been doing so well, I *deserve* this." Sometimes the thought is not so benign, like "I hate this. . . . I'm giving up on this abstinence idea." At other times, thoughts can be very subtle or deceptive, such as "It's beer, so it doesn't count." At still other times, the craving can be almost *dissociative.* Have you ever had the experience of driving down the freeway and planning to get off at a certain exit, and making a note to yourself to get off at that exit, but then drifting off in your mind and missing that exit completely? Perhaps you had actually driven several miles before you noticed it. That's a close approximation to what happens with what I call "the absent-minded craving." In that case, the person may take a drink without even thinking about it, almost automatically. He has no obvious desire to drink, and no thought of the promise he made to himself, but suddenly he finds himself with half a drink in his hand, because he drank the first half without even realizing it.

It's worth noting that the woman described above may not actually be an alcoholic. This type of craving does occur in non-alcoholics, and some of these cases are described by experts as "alcohol abuse." Drinking leads to consequences, the person still uses, and the cravings can be intense, but some support, some very severe consequences, a strong motivation, or maybe just a change of heart can lead, in some cases, to the person moderating or stopping the drinking. If your behavior falls into this category (whether it's drinking, compulsive eating, or some other behavior you are trying

to control), you probably should seek a professional to at least help diagnose the issue and offer some strategies for helping you meet your goals. If this is you, the description of cravings in this book will apply to you, and the explanations and recommendations will be relevant and useful as you make more successful attempts to modify your behavior. You can do some very specific things once you have a better sense of what you are dealing with that can help you change your behavior and meet your goals, and I'll lay those out very clearly so you can be successful.

Of course, these are just examples and many more variations exist, but there is an important one we haven't covered yet—an even more severe type of craving that is generally found only in people who have addiction.

What Is Addiction?

Let's take a look at the word "addiction." Some think of addiction as a dirty word or something pejorative, but it's really nothing more than a description of a set of behaviors that are hardwired into the brain. In fact, it comes from the Latin word "addictionem," which basically means "a devoting." As you'll see in this book, when it comes to addiction, the thoughts, perspectives, behaviors, and even the very neurons or brain cells of the person are *devoted* to the craved substance or behavior. The causes of addiction are complex and multiple, and the types of addiction are myriad as well. But all addictions share some key features, and the most important of those is craving.

People who suffer from addictions experience milder desires and urges as well. Often they drink not because they need to, but simply because they want to. And they also may sometimes experience the mild or even the stronger cravings I've described above. But most people with addiction also experience another type of craving, one that is devastatingly destructive. This is the fist-pounding, can't-live-without-it, absolutely-gotta-have-it severe addictive craving.

This craving cannot be ignored, it cannot be voluntarily suppressed, and it can't be wished away. It often feels like it will last forever and that the only choice is to give in. It feels as powerful as the biological drive to breathe or the thirst for water. It won't allow itself to be ignored until it's satisfied. The tragedy is that giving in or succumbing to the craving and acting out is not the end of it; it often leads, later, to even stronger cravings or cravings for even more. In some cases, giving in to the cravings leads to craving another substance or behavior. It's a vicious cycle that affects more than 10 percent of the U.S. population, and it won't be eliminated by stronger willpower, an ad campaign to "just say no," or any number of scare tactics or legal interventions. What we're discussing is addiction and, sadly, it can be deadly. People with addiction need their substance or behavior to function. In some cases, stopping the drug use or behavior can produce life-threatening consequences, such as seizure or delirium (with alcohol), or the equally deadly refeeding syndrome with anorexia, where suddenly resuming normal eating after starvation can sometimes lead to heart failure and even death.

These individuals cannot consistently use in moderation. Unlike our other examples, where a person could use or act out in a limited, controlled fashion, people with addiction generally cannot consistently control their behavior when it comes to the addictive substance or process. One important caveat is that some people with addiction actually *can* control their behavior . . . for a time. This temporary control wreaks havoc on the mind of someone with addiction, because it convinces him that he has finally regained control. Then later, when the behavior spirals out of control again, it's often far more devastating than it was before. This, by the way, is one reason why experts describe addiction as a progressive disease. Over time, the natural development of addiction is that it gets worse, although there may be periods (often long periods) of improvement.

Yet over the years I've observed that when this happens—when the behavior temporarily appears to be getting better—the mind is

actually getting worse, setting the person up for relapse. Here's an example of this *behavior-better-brain-worse* scenario. Consider a guy named "Lance" who struggled with gambling for years. At first it was sports betting, then it was day trading, and these days it's some combination of online and casino gambling. Like most people who are struggling with gambling addiction, he had some winning streaks and some losing streaks. When he won, he knew it was because of his strategy. When he lost, he knew it was temporary—he didn't even really think of himself as losing; rather, he would say, "The casino is holding my money for me right now until I win it back." That sounded bad enough, and it was. However, at one point, with enough pressure and when he was in the hole financially, he finally decided enough was enough. He acknowledged he had a serious problem, even that he was addicted to gambling, and then he simply stopped gambling. His wife was proud of him, his friends (at least the few who knew about his problem) were supportive, and Lance really got the sense that he was free of this issue. He called his gambling "a phase."

From the outside, it would really appear that things were looking up for Lance. The behavior wasn't just reduced—it was gone. Lance was not gambling at all. But let's take a look at what Lance was *thinking.* Lance began to reflect on how he was able to simply stop gambling by putting his mind to it. He looked with scorn on people who needed gambling addiction treatment and at people who described themselves as gambling addicts. He started to ask himself why they didn't just "man up and quit, like I did." He then made a startling conclusion: if he was able to quit on his own when he wanted to, he must not be addicted. Now, mind you, when Lance was gambling (toward the end), he was aware that he was addicted. In some regards, his mind was actually healthier because he knew he had a problem. He had insight. Later, after stopping for a while, he became convinced that he didn't have a problem. His insight was actually worse—his mind was lying to him at a furious pace even

though he was not gambling. You can imagine what happened next; because he knew he wasn't addicted, he told himself that he could gamble recreationally, just occasionally and for fun. Before long, he was back in a deeper hole than ever, asking himself how he had let it happen again. Lance's behavior was better but his mind was worse, which is why we emphasize that quitting isn't enough; it has to be followed up with a genuine recovery-oriented program, which I'll describe later in this book. The great thing about focusing on recovery rather than on the problematic/addictive behavior is that not only do your brain and behavior improve, but your happiness and sense of satisfaction dramatically increase as well.

If you fall into any of the above-mentioned categories of addiction, you absolutely should get professional help to assess the problem and support you in developing individualized strategies to obtain relief and freedom. But even if you fall into the severest category of addiction and craving, the explanations and methods in this book will be very helpful as you progress along your journey toward personal recovery.

Cravings Matter

Why do cravings matter? In 2012, craving was finally added to the upcoming fifth edition of the American Psychiatric Association's *Diagnostic and Statistical Manual of Mental Disorders* (DSM-V) criteria for addiction. Doctors are paying more attention to cravings now than ever before. Why is that? There are three main reasons. First, cravings are correlated with relapse. People who crave more are more likely to return to the craved substance or behavior. Second, cravings are distressing and uncomfortable. People who have severe cravings will often describe them as maddeningly uncomfortable. And finally, cravings matter because they can be affected, they can be improved, they can be relieved, and, in many cases, they can even be prevented. Recently, medications and other therapies have been developed to help reduce or eliminate alcohol and other drug cravings.

Some evidence suggests that these medications may also be helpful with "process" cravings, like gambling and compulsive eating. This book will explore the evidence behind all of these options so you can decide a course of action that's right for you.

Perhaps the most important reason that cravings matter is because they are *yours*. They are deeply personal. You can paint a vivid picture of them or even show someone what happens to you when you experience them. But no matter how thoroughly you describe or explain your cravings, you are the only one who is experiencing them. This is very important because, in the effort to get a handle on their cravings, many of the people I work with try to compare their cravings to what others are experiencing. Often, they will either see that their cravings seem worse, and become convinced that they are different and thus cannot get well, or that their cravings are milder, and so conclude, "I don't really need all this help." Either way, comparing your cravings with what other people experience is a losing game and can only serve to undermine your success. As we'll see later (particularly in chapter 7), if you must share and compare your experiences with that of other people, be sure to look for similarities rather than differences.

Your cravings matter because you alone are experiencing them, they are influencing your behavior, and your actions can directly influence them. You are not helpless when it comes to your cravings, nor are you destined to experience them forever. There are specific actions you can take, which I'll describe in detail, that can affect the frequency and intensity of your cravings. Your actions can also reduce the likelihood that, should you experience a craving, you will act on that craving and relapse to the behavior you have been trying to control.

Whether you use the term "craving" to describe a simple urge or desire, or even if you mean the kind of severe craving found in addiction, cravings matter. Whether it's craving for a drink, a drug, a slot machine, a chocolate cake, or a cigarette, cravings matter

because they either influence or directly drive your behaviors. But even more important, changes in your actions and behaviors can influence your cravings and improve your ability to get relief and find freedom from the self-destructive things you are craving.

• • •

Beyond Neurotransmitters

The *Real* Brain Science of Craving and Decision-Making

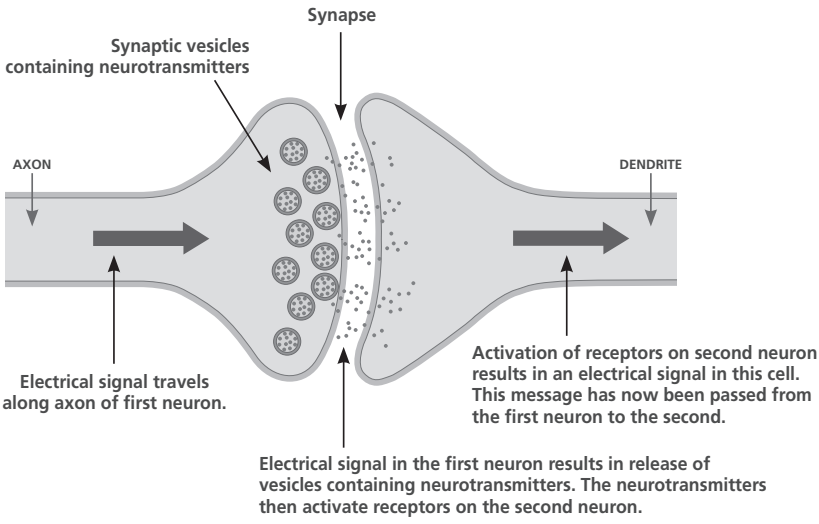
Alcoholism: Disease ~~or~~ of Choice

Medical science news is very difficult to interpret. One study shows that drinking a little wine is good for you, while another suggests it's very bad. One study shows that hormone replacement therapy for women is a good idea, while another suggests it can lead to breast cancer. One week the news is eat more of this food, and the next week it's eat less. In the midst of this flood of conflicting information, it's easy to either get an oversimplified (and inaccurate) picture of the science of health and wellness or draw the conclusion that we don't really know anything at all. The reality is that we know quite a bit about the brain and its function, and much of it *is* easily understood; what's missing is basic education about the way the brain works and how its processes affect experiences and decisions.

Most people have heard of neurotransmitters, the chemicals that brain cells use to communicate with each other. Today's news is filled with conflicting information about these chemicals and how we can modify them: exercise increases serotonin, serotonin is responsible for good mood, too much serotonin leads to irritability, too little leads to depression. Television ads for antidepressants might convince you that all you need is a little more of a certain chemical and you'll be okay, as if your brain contained two beakers, one for serotonin and one for norepinephrine, and all you need is to fill up one

of the beakers if you are running a little low. Doctors may reinforce this simplistic idea by describing depression as a *chemical imbalance*. "Don't worry, Mr. Jones. You just need some more serotonin because you are running a little low."

In order to understand why you crave and how you make decisions, you need a more sophisticated understanding of the brain and its function. Although estimates vary, most scientists agree that the typical human brain contains about 100 billion nerve cells, or neurons, and at least that many supporting cells, called glia. Your neurons have cell bodies and projections called axons and dendrites. It is often helpful to think of axons as broadcast antennae and dendrites are receiving antennae. The gaps between axons and dendrites are called synapses. When an electrical impulse is activated along an axon, a neurotransmitter is released into that gap. The neurotransmitter then activates the dendrite of the next neuron (often by attaching to a special protein called a receptor) and *voilà*, one neuron just "talked" to another one! (See the illustration below.) Each individual neuron can have many synapses. Thus, your brain is highly networked, and small changes in one area can produce dramatic effects throughout the brain.



Your brain has gray matter and white matter. The gray matter of your brain consists mostly of the cell bodies of your neurons and the dendrites. The white matter is white because the long axons (transmitting antennae) are covered with a whitish fat-and-protein insulation called myelin. Myelin helps the electrical signal travel more efficiently along the axon. Your cerebral cortex is the outer part of your brain and is mostly gray matter. Deeper in your brain are nuclei, dense regions of cell bodies. These deeper regions, surrounded by white matter, are also gray matter and are responsible for key functions of your brain. For example, one set of nuclei deep in your brain is called the thalamus. Your thalamus functions as a sort of relay system, as sensory and motor signals pass through it and are processed. In fact, all sensations except smell are processed in the thalamus. Nerve cells related to smell go directly to the cortex without the relay. Some scientists believe that smell has a powerful impact on decision-making because of this fact, and in my experience working with addicts, smells often seem to trigger the worst cravings.

How Your Brain Lies to You

One important function of the brain is to give you accurate information about your surroundings so you can function in the world. Another important brain function is to lie to you. Several medical conditions provide dramatic examples of this. For example, patients with schizophrenia and other psychotic conditions may experience auditory or visual hallucinations. Olfactory hallucinations (where you smell something that isn't there) are common with certain seizure disorders and tumors. People with the psychiatric condition called Capgras syndrome believe that those around them have been replaced by imposters. In de Clérambault's syndrome, you believe that someone is in love with you even though they are not. In delusional parasitosis, you become convinced that you are infested with parasites when you are not. When people have these disorders, no amount of evidence or argument can convince them that they are

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About the Author

Omar Manejwala, M.D., is a psychiatrist and an internationally recognized expert on addiction and compulsive behavior. He is the former medical director of Hazelden, a treatment center in Center City, Minnesota, and currently the chief medical officer of Catasys, a health management services company specializing in substance dependence. He has appeared on numerous national media programs including *20/20, CBS Evening News,* and *The Early Show*. Although he is an expert on craving, he hasn't yet conquered his own craving for spending time with his wife, Cecily, and their two sons, although he seems just fine with that.

For the latest updates and news on cravings, tips for managing specific cravings, and to stay connected with the Craving community, visit www.facebook.com/CravingBook and follow @CravingBook on Twitter. Hazelden also offers an online social community for those in recovery and their families, at www.hazelden.org/social.

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Hazelden, a national nonprofit organization founded in 1949, helps people reclaim their lives from the disease of addiction. Built on decades of knowledge and experience, Hazelden offers a comprehensive approach to addiction that addresses the full range of patient, family, and professional needs, including treatment and continuing care for youth and adults, research, higher learning, public education and advocacy, and publishing.

A life of recovery is lived "one day at a time." Hazelden publications, both educational and inspirational, support and strengthen lifelong recovery. In 1954, Hazelden published *Twenty-Four Hours a Day*, the first daily meditation book for recovering alcoholics, and Hazelden continues to publish works to inspire and guide individuals in treatment and recovery, and their loved ones. Professionals who work to prevent and treat addiction also turn to Hazelden for evidence-based curricula, informational materials, and videos for use in schools, treatment programs, and correctional programs.

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SELF-HELP/ADDICTION

When we find ourselves wanting something strong enough, we'll do just about anything to get it—sometimes at the expense of our bodies, brains, banks accounts, and relationships. So why do we sometimes have the irrepressible feeling that we *need* something—such as food, cigarettes, alcohol, or sex—that we really just want? And how do we satiate that feeling without indulging it?

In **CRAVING**, Omar Manejwala, M.D., translates the neurobiology of this phenomenon into real and accessible terms, explaining why we just can't seem to get enough. He then gives us tools and guidance to find satisfaction without giving in to our cravings. Dr. Manejwala explains:

- how and why our brain drives behavior
- how to change the part of our brain that fuels our cravings
- the warning signs that craving is evolving into addiction
- why craving is the most difficult component of addiction to address
- why self-help and spiritual groups, which use models like the Twelve Steps, are so effective at helping people to change behaviors, receive encouragement, and remain accountable

Omar Manejwala, M.D., is the senior vice president and chief medical officer of Catasys in Los Angeles, California, and is the former medical director at Hazelden Foundation. Dr. Manejwala is a transformative public speaker and appears frequently in the national media to address the topic of addiction.

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