

Excerpt (Chapter 1) from  
*The Natural Medicine Guide to Addiction*  
by Stephanie Marohn

# 1 What Is Addiction and Who Suffers from It?

“Addiction is a physical disease.”<sup>1</sup>

“Addiction is a misguided search for self-love and spiritual fulfillment.”<sup>2</sup>

“We can draw a strong comparison between addiction and cancer.”<sup>3</sup>

“Addiction is an active belief in and a commitment to a negative lifestyle.”<sup>4</sup>

“Addiction is a disease which, without recovery, ends in jails, institutions, and death.”<sup>5</sup>

“Addiction is a continuum; your behavior is more or less addicted.”<sup>6</sup>

“In its beginning stages, addiction is an attempt to emotionally fulfill oneself.”<sup>7</sup>

“Addiction is a disorder of the brain no different from other forms of mental illness.”<sup>8</sup>

“Chemical dependency . . . is a chronic disease that has no cure.”<sup>9</sup>

As you can see from the above definitions of addiction, all offered by professionals in the field of addiction treatment today, there is a wide range of opinion on what exactly addiction is. Conventional psychiatry and Twelve-Step programs subscribe to the incurable disease model, which holds that “Once an addict, always an addict.” The natural medicine approach regards addiction as the consequence of physical, energetic, psychological, and/or spiritual imbalances that can be corrected. Everyone agrees, however, that untreated addiction affects every aspect of life and has far-reaching consequences. It also cuts across all class, race, and gender lines. Addiction is an equal opportunity affliction.

The complexity and scope of the problem of addiction are reflected in the fact that the *DSM-IV* (*Diagnostic and Statistical Manual of Mental Disorders, 4th Edition*), the American Psychiatric Association’s diagnostic bible for psychiatric disorders, devotes over 100 pages to “substance-related disorders” alone, more than is allocated to any of the other so-called mental disorders covered in the text.

Amidst these 100 pages, substance dependence (the clinical term for substance addiction) is defined broadly as “a cluster of cognitive, behavioral, and physiological symptoms indicating that the individual continues use of the substance despite significant substance-related problems.”<sup>10</sup> More specifically, to meet the criteria for a diagnosis of substance dependence, at least three of the following must be operational in the space of a year:<sup>11</sup>

- Tolerance (either a need for more of the substance or reduced effects from the same amount)
- Withdrawal when discontinuing use of the substance, or taking the substance (or one like it) to avoid or relieve withdrawal symptoms
- Taking more of the substance or for longer than intended
- Desire or failed attempts to reduce or control substance use
- Much time dedicated to obtaining, using, or recovering from use of the substance
- Giving up or reducing social, professional, or leisure activities due to substance use
- Continuing to use substance despite physical or psychological problems related to its use

In other words, the person experiences a loss of control and has a compulsion to use despite adverse consequences. The *DSM-IV* distinguishes between substance dependence and substance abuse. For a diagnosis of substance abuse, at least one of the following must be present in the space of a year:<sup>12</sup>

- Failure to meet professional or familial obligations as a result of recurrent substance use
- Recurrent substance use in situations in which it is physically dangerous to use, as when driving or operating machinery
- Recurrent legal problems related to substance use
- Continuing to use substance despite social or interpersonal problems related to its use

The main difference between substance dependence and abuse, then, according to these definitions, is the physiological component of addiction, as manifested in the points regarding tolerance, withdrawal, loss of control, and the nature of the adverse results. This difference may simply be one of degree or stages of substance use, or it may be due to the presence or absence of factors that predispose an individual to develop full-blown addiction (see chapter 2). In any case, the line between abuse and dependence is not always clear and need not be to initiate treatment. Many addiction-treatment providers do not make the distinction. The therapeutic approaches discussed in this book have equal application to abuse or dependence (and to substances and behaviors).

While the *DSM-IV* covers only problems with substances, aside from pathological gambling, which is discussed under “Impulse-Control Disorders,” many of those in the addiction treatment field categorize addiction as two types: substance addictions and process addictions. The former includes addictions to alcohol, tobacco, and illegal and prescription drugs, while the latter covers behavioral or activity addictions, such as eating, gambling, spending, working, exercising, and sexual activity addictions.

While people may start using a substance or activity to feel good, addiction progresses to the point that they must use to keep from feeling bad. “Addicts become addicted not because of the high, but because they need their substance to satisfy their physiological hunger, to relieve the symptoms of depression, and to stave off withdrawal symptoms,” states Janice Keller Phelps, M.D., a specialist in the treatment of addiction since 1977.<sup>13</sup>

Withdrawal symptoms vary according to the nature of the addiction, from mood disturbances such as anxiety, depression, agitation, mood swings, irritability, and restlessness to physical symptoms such as chills, shaking, profuse sweating, and abdominal pain. Withdrawal is not necessarily over after conventional detoxification is complete. Post-acute withdrawal syndrome (PAWS), which can include the mood disturbances above as well as insomnia, listlessness, malaise, and/or headaches, can occur as long as a year and a half after “detoxification.”<sup>14</sup>

The term “detoxification” as it is employed conventionally does not entail an active detoxification protocol, but simply refers to the process of detoxification or withdrawal that the body does on its own when the formerly abused substance is withheld.

In part 2, you will learn about the biochemistry of withdrawal and how the nightmare of symptoms associated with it can be avoided with amino acids and other nutrients, among other natural medicine therapies. Rebalancing the biochemistry makes it possible for the individual to have the mental and physical wherewithal to proceed to addressing the behavioral, emotional, and spiritual aspects of their addiction as well. A lack of understanding of the multifaceted nature of addiction is what typically makes addiction recovery difficult.

## Types of Addiction

There are two main categories of addiction high: arousal and satiation. The arousal high is about temporarily feeling omnipotent. The satiation high is about numbing pain. Substances and

activities that produce the arousal high include speed, cocaine, ecstasy (MDMA), Ritalin (used by adults), alcohol during the first few drinks, gambling, and sex addiction activities. Those that produce the satiation high include heroin, alcohol, marijuana, tranquilizers, and food addiction behaviors.<sup>15</sup>

Another way to describe the categories is: substances and behaviors that stimulate nervous system activity and substances and behaviors that depress nervous system activity. Substances can be further broken down into specific drug categories, such as stimulants, depressants, opioids, hallucinogens, cannabinoids, and steroids. Although different substances produce different problems in association with addiction, many practitioners believe that addiction is addiction and all “types” must be treated in the same basic way. Not acknowledging this fact promotes the substitution of one addiction for another. For example, using Valium (diazepam) to help people quit drinking often results in a Valium addiction.<sup>16</sup>

Information about the various categories of addiction and substance abuse is helpful in understanding addiction, however. Here we look at alcohol, street drugs, prescription drugs, tobacco, and common addictive behaviors/activities.

## Alcohol

Abuse of alcohol is rampant: 18 million Americans have alcohol problems<sup>17</sup> and 53 percent of American adults have a family history of alcoholism or problem drinking.<sup>18</sup>

Alcoholism varies crossculturally, however. Research has found that Native Americans and the Irish have very high rates of alcoholism, while Chinese, Greeks, Italians, and Jews have very low rates. Some researchers suggest that this is due to differences in how the cultures view alcohol.

For example, the Irish tend to view drinking in all-or-nothing terms while Mediterranean cultures exhibit a more moderate attitude. In the latter, drinking takes place within the family and “doesn’t carry the emotional baggage that drinking does for groups with a greater susceptibility to alcoholism,” states Stanton Peele, Ph.D., a psychologist, researcher, and specialist in the field of addiction.<sup>19</sup>

In addiction treatment, the term alcoholism has come to refer to both alcohol abuse and dependence, a reflection of the fine line that separates them. The prevailing medical model holds that alcoholism is a physical disease that when untreated results in bio-psycho-social damage, meaning that the body, mind, and interpersonal relationships are affected. Social damage encompasses family, friends, career, and community.

Alcohol is slightly unusual in that it can act as both a stimulant and depressant. For the first few drinks, it is a stimulant; with further drinking, it becomes a depressant. As with drugs, alcohol produces its effects by acting on the brain’s neurotransmitters (chemical messengers). Its pleasurable effects are likely the result of its action on endorphins, the body’s natural painkillers and the source of “runner’s high.” Alcohol’s sedative effects are likely due to its action on GABA (gamma-aminobutyric acid), which has a calming effect on the brain.

Another neurotransmitter involved is dopamine. Known as one of the “feel good” neurotransmitters, meaning that it is their presence and function that enable us to be in a good mood, its release in the brain is connected to the sensations of satisfaction and euphoria. Later in the chapter dopamine is discussed in more depth because research indicates that it is the primary neurotransmitter involved in all forms of addiction.

A further effect of alcohol on normal neurotransmitter function is that it impedes the supply of tryptophan (the amino acid precursor to the neurotransmitter serotonin) to the brain and thus reduces serotonin formation. Serotonin is involved in mood regulation, and disturbances in its levels or function have been linked to depression and anxiety, which offers an explanation for why these two mood states often coexist with alcohol abuse.

In addition to anxiety and depression, symptoms of alcohol abuse include facial puffiness, spider-like capillary formations on the face, flushing, sweating, dyspepsia, sleep problems, tremors, and chronic fatigue. The symptoms depend upon the severity of the drinking problem.

Withdrawal symptoms likewise depend upon the degree of abuse and can include increased heart rate, elevated blood pressure, anxiety, nausea, vomiting, headache, sweating, tremors, seizures, confusion, disorientation, hallucinations, and anxiety ranging from mild agitation in less severe cases to panic in more severe cases. The most severe withdrawal is termed “delirium tremens,” or DTs.

The consequences of alcohol abuse are far-reaching. It can potentially damage every system of the body. Organ damage, cirrhosis of the liver, high blood pressure, heart problems, nutritional deficiencies, gastrointestinal problems (ulcers and gastritis), immune suppression, hormonal dysfunction, neurological damage, organic brain syndrome (permanent memory impairment), and possibly increased risk of certain types of cancer can all result from excess drinking.<sup>20</sup>

Alcoholism is the third leading cause of death in the United States.<sup>21</sup> More than 100,000 deaths annually are related to alcohol.<sup>22</sup> One-third of all suicides, over 50 percent of homicides and domestic violence incidents, and 25 percent of emergency room admissions are related to alcohol.<sup>23</sup>

The recovery rate with conventional treatment of alcoholism is low, ranging from 15 to 30 percent, depending on the source. The relapse rate among alcoholics is high, with half of those who go through treatment relapsing at least once.<sup>24</sup>

### **Is Your Substance Use a Problem?**

The CAGE test is an informal method for determining whether substance abuse may be a problem for you. Answer the following four questions:

- Have you ever tried to Cut down on your drinking (drug use)?
- Have you ever felt Annoyed by someone’s comments about your drinking (drug use)?
- Have you ever felt Guilty or concerned about your drinking (drug use)?
- Have you ever had an Eye-opener drink (or a drug to avoid or ease withdrawal symptoms) in the morning?

(The questions can be modified slightly to apply to process addictions, as in: Have you ever tried to cut down on your gambling/shopping/Internet use?)

Some practitioners say that a yes answer to one or more of the questions may indicate a possible problem; others say that yes to two or more suggests dependence. The test is obviously far from definitive, but can serve as a starting point for considering the issue of addiction.

### **Street Drugs**

Like alcohol, the use of illegal drugs is woven into the fabric of American society. An estimated 14.8 million Americans use illegal drugs<sup>25</sup> and five to six million Americans have drug problems.<sup>26</sup> One to two million use methamphetamine (speed) regularly<sup>27</sup> and 1.8 percent of Americans over the age of 12 use cocaine monthly.<sup>28</sup> Five percent of those over 12 years old report using marijuana every month.<sup>29</sup> Eight percent of high school seniors report that they have tried ecstasy (MDMA, methylenedioxymethamphetamine) at least once.<sup>30</sup> Nearly 80 percent of Americans have tried illegal drugs by the time they are in their mid-twenties.<sup>31</sup>

The stimulant drugs speed (amphetamine, methamphetamine, and dextroamphetamine), cocaine, and crack; the opioids heroin, opium, and morphine; the cannabinoids marijuana and hashish; the hallucinogens LSD, mescaline, and psilocybin mushrooms; and phencyclidine (PCP, angel dust) can all be the source of substance abuse. While not technically drugs, substances inhaled for intoxication purposes include paint thinner, glue, gasoline, nitrous oxide (laughing gas), propane gas, and amyl and butyl nitrate (poppers).

As with alcohol, all of these drugs are thought to affect the dopamine neurotransmitter system, among other neurotransmitters. Speed, for example, floods the brain with dopamine, and scientists have found that even low levels of methamphetamine over time can damage up to 50 percent of the dopamine-producing cells in the brain.<sup>32</sup> One study found that the level of dopamine in methamphetamine addicts was 24 percent lower than in normal subjects.<sup>33</sup>

Heroin and marijuana also trigger dopamine release. Cocaine and crack block the absorption of dopamine, resulting in more dopamine in circulation in the brain. Chronic use damages dopamine receptors and disturbs the regulation of pleasure. (Receptors are the components of nerve cells that receive the neurotransmitter.)

While amphetamines are prescription drugs, illicit speed is used in a variety of ways, from shooting up to smoking it, which takes it out of the realm of “popping a pill.” Street speed is also so prevalent that it must be included here as a street drug. Methamphetamine (known as crystal meth or crystal) use is on the rise around the world. In Thailand, for example, it is the “working man’s and woman’s preferred intoxicant,” and according to an investigating writer for Time magazine, in one Bangkok slum of 5,000 residents it is difficult on weekends to find anyone who is not high on yaba (mad medicine), the local name for meth.<sup>34</sup>

Speed is neurotoxic, meaning toxic to the nervous system, and chronic use can produce rapid or irregular heartbeat, weight loss, malnutrition, insomnia, irritability, restlessness, anxiety, panic, paranoia, psychosis, loss of coordination, tremors, seizures, stroke, and heart failure.

Heroin and other opiates operate on the brain’s natural painkillers, endorphins and enkephalins. With heroin use, the body makes less of these substances and tries to reduce the effects of the introduced opiates. The result is higher doses of heroin are needed to produce a high. The primary health consequences of heroin abuse, in addition to the risk of overdose and the contraction of HIV from sharing needles, are respiratory depression and arrest, confusion, insomnia, anxiety, and depression.

Although much has been made of the horrors of heroin withdrawal, addicts report that a severe illness such as hepatitis B is much worse.<sup>35</sup>

Many also report that it is more difficult to give up cigarettes. The focus on heroin as the bogeyman of withdrawal overshadows the real dangers of withdrawal from Valium and other benzodiazepines, which unlike heroin can be life-threatening. With any drug, if the natural medicine therapies you will learn about in part 2 were instituted in detoxification centers everywhere, withdrawal as we have known it would be a thing of the past.

While marijuana is regarded by many as a harmless drug, 10 to 15 percent of marijuana users become dependent on it, that is, are unable to give it up.<sup>36</sup> In the brain, marijuana binds to receptor sites in areas that regulate mood and memory. Impaired memory and learning, anxiety, and panic attacks are among the health consequences of chronic marijuana use. Other consequences include frequent respiratory infections, cough, and elevated heart rate.<sup>37</sup>

Cocaine is generally considered today to be one of the most addictive drugs there are, and as a result nearly impossible for addicts to quit on their own.<sup>38</sup>

There is research contradicting this view, however, and critics of this widely disseminated position point out that the same used to be said of heroin, which has since proven false. In reality, no illicit drug is inherently addictive, as evidenced by studies demonstrating that not everyone who uses these drugs becomes addicted and the majority of those who use drugs on a regular basis do not become addicted.<sup>39</sup>

This evidence underscores the fact that in order to identify the causes of addiction one must *look to the individual* rather than to the drug. Chapter 2 explores the multiple factors that can contribute to the development of addiction.

As with other substance abuse, cocaine addiction can have serious health consequences, including chest pain, respiratory failure, nausea, abdominal pain, headaches, insomnia, weight

loss, malnutrition, anxiety, panic, paranoia, psychosis, tremors, seizures, stroke, and heart failure.

Cocaine, amphetamines, PCP, hallucinogens, and inhalants are sources of substance-induced anxiety disorders and can worsen already existing anxiety.<sup>40</sup> Habitual use of cocaine and amphetamines, for example, can interfere with production of the neurotransmitters that inhibit irritability and other heightened reactivity, leading to excessive anxiety.<sup>41</sup> Narcotics, which people may use in an attempt to self-medicate anxiety, can actually worsen it.<sup>42</sup> People with panic disorder frequently cite the use of marijuana as the “single initiatory factor” in the first attack they experienced.<sup>43</sup>

## Prescription Drugs

In addition to iatrogenic (physician-induced) addictions, which means that a doctor prescribed the drug to which you are addicted, prescription drug abuse occurs through illegal channels as well. The following are categories of drugs that are commonly abused, whether they are obtained through legal or illegal means: amphetamines, sedatives (barbiturates), hypnotics, benzodiazepines (tranquilizers, sleeping pills), anxiolytics (anti-anxiety drugs), steroids, and the narcotic analgesics (painkillers such as codeine, Dilaudid, Darvon, Demerol, Percodan, and Vicodin).

The prevalence in abuse of prescription drugs is reflected in the cultural milieu. One joke making the rounds refers to the ubiquitous use of Xanax (alprazolam), pronounced zanax, an anti-anxiety drug: The drink of choice these days is the Zanatini, a martini with a Xanax-stuffed olive.<sup>44</sup> The painkiller Vicodin has become the trendy drug that cocaine was in the 1990s. The subject of pop songs and featured as a tattoo on the arm of platinum-selling rapper Eminem, Vicodin has become “the narcotic of choice for the celebrity set.”<sup>45</sup>

The illicit use of painkillers in general has risen dramatically throughout the United States. The number of Americans who began taking prescription painkillers for “nonmedical” purposes nearly tripled from 1990 to 1998 to a record 1.5 million, as reported by the Department of Health and Human Services.<sup>46</sup>

The greatest risk factor for abuse of prescription drugs is an existing alcohol or drug problem.<sup>47</sup> Those in recovery are also at risk. Richard Rogg, founder and owner of Promises Malibu, a rehab facility near Los Angeles that caters to celebrity clients, states, “I’m hearing the same old story: ‘I had five or ten years’ sobriety, but I got loaded on Vicodin, and I went out.’”<sup>48</sup>

Nonmedical use of Rohypnol (flunitrazepam) is also on the rise. It is a sleeping pill in the same class of drugs as Valium and Xanax (benzodiazepines) but is ten times more powerful than Valium. Though Rohypnol is illegal in the United States, it is sold by prescription in over 60 other countries and so is available as a street drug in the U.S.<sup>49</sup> One of its street names is *papas*, Spanish for “potatoes,” a reflection of the user’s mental capacity while on the drug.<sup>50</sup> Anxiety, insomnia, tremor, elevated blood pressure, seizures, and increased sensitivity to light, touch, and sound are among the withdrawal symptoms.<sup>51</sup>

Ritalin (methylphenidate), the amphetamine that record numbers of children are being given for ADHD (attention deficit/hyperactivity disorder), is an increasing source of adult drug abuse. In adults, it acts on the brain in a manner similar to cocaine. “Having practiced addiction medicine for many years, let me relay to you what my stimulant-addicted patients have to say about Ritalin,” says Charles Gant, M.D., Ph.D., of East Syracuse, New York. “They call it the “cognac of speed,” the “best stuff,” and the “nicest high of all the uppers.”<sup>52</sup>

Ritalin has also been dubbed the “poor man’s cocaine” and is used by college students pulling “all-nighters.”<sup>53</sup> Some of the indicators of abuse are depression, anxiety, insomnia, chronic pain, and headaches.<sup>54</sup>

Author Elizabeth Wurtzel, who wrote about her experiences with a Ritalin addiction in an article in the New York Times, reports that she was given a Ritalin prescription to enhance the action of her antidepressant medication. She was soon addicted and taking high doses every day. She ended up spending four months in a residential treatment center followed by six months of participation in an outpatient program in order to get off the drug. In Narcotics Anonymous meetings, other Ritalin addicts included those who had been prescribed the drug as a child and mothers who would steal pills from their children's prescription.<sup>55</sup>

## In Their Own Words

"After two years I am finally back in working order. I am finally able to concentrate without Ritalin. But suffice it to say my life at age 32 in no way resembles the one I had pictured before addiction became a part of it. And all this as a result of this little pill that is safe enough to give to preschoolers. Imagine that."<sup>56</sup>

— Elizabeth Wurtzel, on her Ritalin addiction

## Tobacco

Like drugs and alcohol, nicotine (in cigarettes, snuff, and chewing tobacco) affects neurotransmitters. Research suggests that nicotine has similar effects on the brain to cocaine.<sup>57</sup> Specifically, it triggers dopamine release and blocks the action of the enzyme that breaks down dopamine, resulting in a greater circulation of the "feel good" neurotransmitter. Like alcohol, it acts as both a stimulant and depressant, which explains the role of smoking as both a calming and pleasure-producing activity.

This may explain why it is so difficult to quit smoking, along with the fact that as most smokers started in their teens, the habit tends to be ingrained and smoking is integrated into so many activities of daily life. Addicts have rated it the hardest drug to give up.<sup>58</sup> Nevertheless, over 40 million former smokers no longer do so, and 90 percent of those who quit manage to accomplish it on their own.<sup>59</sup>

Despite the fact that the health consequences of smoking are well documented, more than 50 million Americans still smoke. Over 50,000 studies have linked smoking to lung cancer, emphysema, heart disease, and pregnancy complications.<sup>60</sup> One in six deaths are caused by cigarette smoking. Every year 400,000 people die as a result of their cigarette smoking, while another 50,000 people die as a result of secondary smoke.<sup>61</sup>

## Common Addictive Behaviors/Activities

Among the common behavior and activity addictions are food addiction, sex addiction (compulsive sexual activity), compulsive spending, compulsive Internet use, workaholism, addiction to relationships, exercise addiction, and gambling addiction.

The continuum of addiction is especially applicable to this category of addiction. It could be maintained that we all have addictions to some degree. Escaping through watching television, eating chocolate, or surfing the Internet are what some term "soft addictions," simply milder forms of self-medication than alcohol or drug addiction.<sup>62</sup> When such activities result in negative physical, mental, interpersonal, professional, or social consequences, they move out of the realm of soft addictions.

Based on the prevalence of obesity in the United States, Dr. Stanton Peele observes that "the substance problem that seems to be the most out of control for Americans is food."<sup>63</sup>

Research has shown that a high consumption of fat and sugar can disturb brain chemistry and cause addictive cravings for these substances.<sup>64</sup>

As you will learn later in this book, there is a body of evidence supporting the idea that sugar addiction sets the stage for all other addictions. Sugar is a simple carbohydrate, and it is thought that the addiction is caused by dysfunction in carbohydrate metabolism. Alcohol is also

a simple carbohydrate. This model may explain the tremendous sugar cravings experienced by alcoholics and other addicts when they go off their substance of choice.

Sex addiction is also quite common and can take a number of forms. Compulsively engaging in sex, masturbation, sadomasochistic activity, pornography viewing, and sexual fantasies or obsessions are all aspects of sex addiction.

Compulsive reading of romance novels could be placed in this category as well. While it may seem innocuous on the surface, it can be a destructive addiction. As one woman who also struggles with compulsive sexual activity explains it: “The underlying message in romance novels is that there is a perfect someone out there for you and you find it through an encounter of immediate attraction that results in incredible, mind-blowing sex. I have found myself reading the same novels over and over again, but when I do this, I’m looking only for the sexual encounters. I keep the books with the most titillating scenes readily accessible. These scenes leave me either more tense and unsatisfied or masturbating. The end result is not at all fulfilling, and I feel like a kid sneaking a peak at dirty magazines. I know that since I’ve been reading romance novels I look at men in an even more conflicted way than before. I feel further away from reality than ever before.”<sup>65</sup>

Another form of addictive escape is a phenomenon of the technological age. Internet addiction, or “chronic cyberphilia,” has become such a problem that Internet addiction centers and specialists are now treating it.<sup>66</sup>

Maressa Hecht Orzack, Ph.D., a clinical psychologist at Harvard Medical School who works with computer addiction, states that the addiction coexists with at least one other disorder in all of her patients. “Depression, social phobia, impulse control disorder, and attention deficit disorder are commonest,” she says.

Other addictions are also common. Research has found that Internet addicts are more likely than non-addicts to drink alcohol or use amphetamines, and pornography access may be a factor for a significant number of Internet addicts.<sup>67</sup> The addiction can progress to the point of loss of control, as with any other addiction. “Internet addicts can lose their jobs as they become unable to limit their time spent online, either because they fail to turn up for work or because they misuse their office computer facilities,” says Dr. Orzack.

## Multiple Addictions and Comorbidity

Multiple addictions, known clinically as polysubstance dependence, are common among addicts. Among alcoholics and drug abusers, independent research studies have found that 80 to 90 percent smoke cigarettes.<sup>68</sup> As noted earlier, an existing alcohol or drug problem is the greatest risk factor for abuse of prescription drugs. The incidence of sex addiction is higher among substance abusers than among the general population.<sup>69</sup>

There is an “extremely high” comorbidity between substance abuse and trauma.<sup>70</sup> Comorbidity means that two or more disorders exist together. One study of drug-abusing teenagers revealed that 77 percent of the girls and 45 percent of the boys had been sexually abused.<sup>71</sup> Other research demonstrated that childhood sexual abuse was far more common among women alcoholics than women who did not have a drinking problem.<sup>72</sup>

Similarly, there is a high comorbidity between addiction and mental disorders. ADD (attention deficit disorder) and addiction show a strong linkage. The risk of adult substance abuse is four to five times greater among children with untreated ADD than among non-ADD children.<sup>73</sup> As addiction is a form of obsession-compulsion, symptoms of obsessive-compulsive disorder (OCD) can emerge in early recovery.<sup>74</sup> OCD is characterized by persistent thoughts (obsessions) and repetitive or ritualistic behaviors or mental acts (compulsions).

As discussed earlier, addicts are often afflicted with depression and anxiety. The reverse is true as well. Among people who suffer from anxiety disorders, substance abuse is common;

these disorders include panic disorder, social anxiety disorder (social phobia), specific (simple) phobia, generalized anxiety disorder (GAD), and posttraumatic stress disorder (PTSD).<sup>75</sup> Social anxiety disorder, for example, is often paired with abuse of alcohol and sedatives such as barbiturates.<sup>76</sup>

One study revealed that two-thirds of 102 alcoholic admissions to an alcohol treatment facility suffered from phobic symptoms, with one-third having agoraphobia or a social phobia. Other research demonstrated that in the majority of alcoholic phobics their phobias predated their alcohol dependence.<sup>77</sup>

Comorbidity compounds each problem. In addition to each exacerbating the other, the combination of substance abuse and an anxiety disorder or depression puts the person at greater risk of suicide.<sup>78</sup>

## Creativity and Substance Abuse

The romanticization of the artist who abuses alcohol or drugs perpetuates the view that creativity and substance abuse are linked and traps many addicted artists into thinking that their talent will dry up when they dry out. The preponderance of substance abuse among creative people seems to lend credence to this view. The reality is that addiction has felled many brilliant writers, musicians, painters, and actors, either during their lives by interfering with their work or through bringing about their premature death. Either way, the world was deprived of their further contributions.

Jungian analyst and writer Linda Schierse Leonard, Ph.D., who battled with alcoholism herself, explores the issue in her book *Witness to the Fire: Creativity and the Veil of Addiction*. She concludes: “The relationship between addiction and creativity, as I see it, is not a causal one. Rather, there is a parallel process occurring in the psyche of the addict and the creative person. Both descend into chaos, into the unknown underworld of the unconscious. . . . But the addict is pulled down, often without choice, and is held hostage by addiction; the creative person *chooses* to go down into that unknown realm. . . .”<sup>79</sup>

It may be that the same forces that draw artists to the creative life draw them to substance abuse as well, or perhaps the emotional and psychological complexity of the creative process leads the artist to seek escape, relief, or transcendence through drugs or alcohol. Whatever the reason, romanticizing the contribution of addiction to creativity obscures the ugly reality of its physical, mental, spiritual, interpersonal, financial, and occupational toll.

## In Their Own Words

“My writing is no longer disjointed and vague, but clear and deliberate. All the time I spent about to drink and/or drinking and/or recovering from a drunken escapade, is now free to do all sorts of things.”<sup>80</sup>

—a recovering alcoholic on creativity

## The Medical History of Addiction

Humans have sought mind-altering substances throughout their history. In 4000 B.C., ancient Sumerians used opium. Chinese use of marijuana dates back to at least 2700 B.C. Peyote has been featured in religious ceremonies since the time of the Aztecs and likely longer. Throughout time, there have probably also been people who abused these drugs.

In more recent human history, society regarded excessive use of alcohol and drugs as a moral weakness or sin. Vestiges of this view persist today, despite the widely adopted model of addiction as a physiological disease. The disease model was actually proposed as early as 1804 when a Scottish physician wrote an essay propounding the concept of alcohol abuse as a physical disorder.<sup>81</sup> Both the church and the medical profession objected strenuously to this idea,

and it wasn't until the mid 1800s that physicians began to treat inebriates in institutions devoted to the purpose.

It was another one hundred years, however, before the medical profession, as represented by the American Medical Association (AMA), officially declared in 1956 that alcoholism is a disease.<sup>82</sup> Despite the ruling, belief in the addict's weakness of character continued to pervade medical circles.

### The Neurotransmitter Model

The advent of the pharmaceutical age brought research into brain activity, prompted by the effect of certain drugs on mental states and behavior. The psychiatric profession gradually turned from an emphasis on psychological causation to a focus on dysfunction in brain chemistry as the source of mental disorders, including addiction. Neurotransmitters, the brain's chemical messengers that enable communication between cells, became the subject of research and drug development aimed at manipulating brain chemistry.

The current conventional medical view is that addiction is a brain disorder caused by an imbalance or dysfunction in neurotransmitters. Research suggests that the problem may have its roots in genetics.<sup>83</sup>

All addictive substances and activities affect neurotransmitters, and these effects are the source of the associated "high." As noted previously, dopamine is thought to be the primary neurotransmitter involved in all addictions. Dopamine is the neurotransmitter that regulates pleasure. Its domain is satisfaction and euphoria. Anything that makes us feel good, including a compliment or a hug, elevates the dopamine in our brains. Scientists now regard dopamine as "the master molecule of addiction."<sup>84</sup> It is thought that addicts increase their usage or the amount they use in order to maintain the high levels of dopamine they have become habituated to through substance abuse.

Research on dopamine has nearly eliminated the formerly widely held view that some substances are addictive, while others are simply habit-forming, as in heroin versus cigarettes.<sup>85</sup> (As a side note, as recently as 1964, the Surgeon General of the United States held that cigarette smoking was not an addiction.<sup>86</sup>) According to the dopamine hypothesis, any substances that act on dopamine offer the potential for abuse.

Other neurotransmitters implicated in addiction vary according to substance type. For example, as discussed earlier in the section on alcohol, drinking acts on GABA (gamma-aminobutyric acid) and impedes the supply of tryptophan (the amino acid precursor to the neurotransmitter serotonin) to the brain, which interferes with serotonin production.

Serotonin is "the single largest brain system known."<sup>87</sup> Serotonin is another of the "feel good" neurotransmitters. In addition to influencing mood, it is involved in sensory perception and the regulation of sleep and pain, to name but a few of its numerous activities. Among the symptoms of serotonin deficiency are worry, anxiety, obsessions, compulsions, panic, phobias, insomnia, depression, and suicidal thoughts.<sup>88</sup>

GABA also has a large presence in the brain, being extant in 30 to 50 percent of brain synapses.<sup>89</sup> (A synapse is the gap between two nerve cells, or neurons, across which nerve impulses pass.) It operates to stop excess nerve stimulation, thereby exerting a calming effect on the brain. Symptoms of deficiency include a stressed and burned-out state, an inability to relax, and tense muscles.<sup>90</sup>

Alcohol and heroin and other opiates affect endorphins and enkephalins. Deficiencies in these natural painkilling neurotransmitters result in vulnerability to physical and emotional pain.

## Conventional Medical Treatment Today

Current conventional medical treatment of addiction predominantly uses the Minnesota Model, developed by the Hazelden Foundation of Center City, Minnesota, in the 1940s and 1950s, which is based on Twelve-Step principles.

While Alcoholics Anonymous (AA) and other Twelve-Step programs espouse the view that alcoholism and other addictions are progressive diseases, most often likened to diabetes or cancer, they give little to no attention to the subject of physical treatment. “Working the steps” involves addressing the psychological, moral, and spiritual aspects of addiction. This seems an inherent contradiction. If you had diabetes or cancer, would you neglect to get medical treatment for the physical components of your illness?

If addiction is a physiological disease, why aren’t Twelve-Step programs talking about imbalances in neurotransmitters and nutritional approaches to correcting those imbalances? (I focus here on biochemistry because it is conventional medicine’s own explanation for addiction. As you will see in the next chapter, there are many other factors that can play a role in substance abuse.) Some might argue that Twelve-Step programs are support groups, not treatment providers. However, they disseminate a lot of information on addiction and lay out a model for recovery. So where is the physical aspect of the disease in this model and in the disseminated information?

The above observations are not to undercut the tremendous value of Twelve-Step programs in providing a support network for the recovering addict. But for them to promote the view that the disease of addiction cannot be cured is to ignore a whole area of treatment that is potentially of enormous benefit to the individual. And when at least 90 percent of those working in drug treatment have received training that positions the Twelve-Step programs as the best option available,<sup>91</sup> information to the contrary is not likely to reach those who need it.

Other approaches in the addiction field are Rational Recovery (a nonspiritual-based alternative to Twelve-Step programs), cognitive-behavioral therapy (which works to identify and change thought patterns and behaviors associated with substance abuse), and harm reduction (a method that does not demand abstinence but seeks to reduce the harm that results from drug use; needle exchange programs are one example of harm reduction). While each of these makes valuable contributions, they likewise fail to address the biochemistry of addiction.

The biochemical component of conventional medical treatment involves the use of drugs. Methadone is used by the majority of heroin addiction treatment programs, at a cost of about \$500 million a year.<sup>92</sup> Valium has traditionally been used in alcohol detox, leaving many with another addiction to kick. Antidepressants and anxiolytics are prescribed for the depression and anxiety that often plague those in recovery. Antidepressants are also prescribed for sex addiction with the stated purpose that these drugs will treat mood symptoms and reduce sexual obsessions.<sup>93</sup> Addiction experts have a need for medications that can get addicts through the first few months of treatment when risk of relapse is highest, especially among cocaine users.

The drug approach to treatment is problematic, given the established addictive patterns of the patients. Perhaps the most important argument against the use of antianxiety, antidepressant, and other pharmaceuticals as treatment for addiction, however, is that they are not a treatment. They do nothing to address the deeper causes.

What factors are producing the depression and panic attacks in the recovering addict? If indeed a neurotransmitter imbalance is contributing both to the mood states and the addiction itself, what can be done to correct the imbalance, rather than attempt to mask it with drugs? What other factors might be operational in a particular individual’s addiction? If no drug is inherently addictive, what within this person is contributing to the addiction?

Chapter 2 explores the many factors involved in addiction, which can serve as a starting point for answering these questions.

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