Keeping Adolescence Healthy

Exploring the Issues Facing Today's
Kids and Communities

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Chapter 6

Exploration, experimentation and teen drug use – Putting things in perspective

America's drug cabinets and stash boxes are full of all sorts of chemicals that can alter the way that we think and feel. We have legal drugs with restricted access (alcohol, nicotine, ephedrine), legal drugs with unrestricted access (caffeine, St. John's Wort, aerosols), prescription drugs (Prozac, oxycodone, amphetamines) and illegal drugs (marijuana, heroin, cocaine). The topic of drugs, in one form or another, seems to dominate much of the discussion surrounding teenagers. Every parent has been told to fear drugs, yet many have used them. Kids are told to watch out for drug dealers outside of the home, yet highly addictive prescription drugs can often be found in medicine cabinets within the home. It is against this confusing backdrop that today's parents are trying to raise kids that do not fall into the trap of drug abuse. In this chapter, we will discuss teen drug use in the context of adolescent development. We will then discuss ways in which we can use teens' natural tendencies to prevent drug use and, if needed, to treat drug problems.

Janelle Hornickel and her boyfriend, Michael Wamsley, were heading home when the truck they were driving in slid off of a snowy Nebraska road. The fierce snowstorm outside made it difficult for them to get their bearings. The crystal methamphetamine in their systems made matters much worse. During the hours that followed, Janelle and Michael made a series of

phone calls to 911 operators pleading for help. The two 20 year olds were convinced they were blocks away from their apartment in Omaha. In fact, they were in a remote, wooded area 23 miles away. Rescue workers frantically searched for them, but hallucinations brought about by the artificial surges of dopamine in the couple's young brains made it impossible for them to give useful clues to their whereabouts. Their would-be rescuers were led on one wild goose chase after another. Below is an excerpt from Janelle's first 911 call at 12:28AM.

Dispatcher: 911, what's your emergency?

Hornickel: Hi, I'm in Omaha like in the Mandalay apartment complexes, only like right above them in the trees, the living area, and there's a lot of Mexicans and African Americans and they're all dressed up in like these cult outfits, and they're moving all the vehicles, the Mandalay ones they were above ... They blocked us all up in these trees up above Mandalay on Pacific...

Dispatcher: Whoa, whoa, your phone's breaking up for one, ma'am. I'm having trouble understanding what you're actually saying.

Hornickel:... They blocked us all in these trees above Mandalay apartments on Pacific.

Dispatcher: What's the address?

Hornickel: Right above Mandalay apartments.

Dispatcher: What is the address?

Hornickel: My address at Mandalay is 7524. The address for this is in the trees right above those complexes... (Wamsley in background: There's no power.) There's no power here (crying) ... (Wamsley in background: Get an officer here now!)
….

Dispatcher: How are they getting the cars in the trees?

Hornickel: They're ... breaking them down, taking the pieces of cars off, moving the pieces of metal around, and they're going in there.
….

Dispatcher: How many are out there?

Hornickel: I don't know. (to Wamsley: How many do you think are out here?) (To dispatcher) There's a ton of them. (Wamsley to Hornickel: There's a hundred, 200.) (To dispatcher) Oh, I have no idea there's a ton of them. I don't know...

…

Dispatcher: And they're taking the cars apart and putting them in the trees?

Hornickel: Yes. ... unless the owner is there moving the car for them. If the person is there they let them. Otherwise they do it themselves. And they they're putting them in the trees. And I can't find my car. I just have our pickup. (groan) They're very native looking - tribal ... They're in the trees and carving them... There's a lot of trails back...

Dispatcher: Is that north, south, east or west of the apartments?

Hornickel: (Asks Wamsley: Are they east or west of the apartments, would you say?) To dispatcher: Straight south. Go down 75th, go straight into them. Yeah, I think I'm just going to have to start running and get out of here. I don't know who else to call. OK, thank you.

Dispatcher: All right.

Hornickel: OK, bye.

The couple had plenty of gas – half a tank – in the truck. Waiting out the storm in the warm cab would have been the logical thing to do. Unfortunately for them, the meth removed logic from the equation. Fearing for their safety, the couple fled the truck and set off into the storm. They eventually found shelter in an abandoned shed near a gravel pit. The couple believed they were surrounded by people, some of whom were on the roof of the shack. During a call from Michael Wamsley at 1:45AM, one of the dispatchers asked him whether he had done any drugs that evening.

Dispatcher: Have you done any kind of drugs tonight?

Wamsley: No, I haven't done (garble) drugs.

Dispatcher: We can't prove it if you have, but it would help me to know if you did.

Wamsley: I don't do 'em, seriously, ma'am, I just, I really don't.

Dispatcher: Well, how come all these 200 people that you see, how come they can't help you?

Wamsley: Ma'am, I don't think they speak any…

Dispatcher: What?

Wamsley: Ma'am, I don't (silence for several seconds).

Dispatcher: OK, but I speak all kinds of different languages. So I need for you to get one of those people that don't speak English on the phone. They understand hand signals to wave them over to come to you.

Wamsley: They couldn't, they wouldn't.

Dispatcher: That's a universal language.

Wamsley: (Yelling aside) Hello! Could you please talk to her on the phone? Can I get help? Can you talk to her? Please? Help me? Can you please help me? (garble)

The thin walls of the shed could not protect the two from the subzero wind chill. At some point during the night, perhaps feeling threatened by the people they perceived to be all around them, they set out again. Janelle was the first to die. Her frozen body would be found in a field quite some distance from Michael's. The last contact with dispatchers occurred at 4:20AM. During the conversation, Michael no longer refers to "we" and uses the first person singular, "I." Janelle was presumably dead at this point.

Dispatcher: Saunders County 911.

Wamsley: (garble) I've just escaped (garble).

Dispatcher: Where are you at?

Wamsley: (garble) front gate (garble).

Dispatcher: Front gate of what?

Wamsley: Front gate.

Dispatcher: What's your name?

Wamsley: Michael Wamsley.

Dispatcher: OK. What front gate are you at?

Wamsley: ... There's one kind of a horseshoe shaped ...

Dispatcher: We're trying to find you. You were in a shed. You're out walking again?

Wamsley: Yeah. It's OK. There's…

Dispatcher: Where you're at we can get you some help?

Wamsley: OK.

Dispatcher: Are there any houses around you?

Wamsley: No. No houses.

Dispatcher: No.

(Static).

Janelle Hornickel was a junior at Creighton College with a seemingly bright future ahead of her. She was an attractive young woman, a good student, a member of a sorority, and a former cheerleader. To those around her, she did not seem like a drug addict out of control, and probably wasn't. In fact, she might have had her first experience with methamphetamine in the days leading up to her tragic death.

Janelle's story is a perfect example of the fact that methamphetamine does not discriminate. Users are drawn to the drug for its initial effects – pleasure, confidence, energy, improved mood, and a buzz that lasts for eight or more hours. Historians believe that Hitler was treated, daily, with methamphetamine, whether he knew it or not. Methamphetamine is highly addictive, and before long, many users crave it and their lives become focused on one objective – getting more. This drug grabs hold like few others, save perhaps heroin, nicotine and smoked cocaine. Letting go of the drug, if it happens, often follows years or decades of abuse. During these years, teeth fall out, fortunes are spent, careers are lost and families are destroyed. Hardcore addicts often feel as though bugs are crawling under the skin. These psychotic symptoms eventually lead many users to pick holes in their skin in an effort to get the bugs out.

It is difficult to comprehend the toll that drugs like methamphetamine can take on a person without living that life for oneself. Perhaps for this reason, most people do not realize they're in trouble with their particular drug of choice until it's too late, no matter how many cautionary tales they've heard that parallel their own lives.

Statistically, drug use is more likely to begin during the teen years than any other stage of life. In this chapter, we will explore some potential explanations for the initiation of drug use during adolescence. The case will be made that the natural adolescent urge to explore and take risks sets them up for experimentation with drugs. Because the teen brain is so malleable, it picks up drug-related behaviors, or "drug habits," with

ease. If the individual carries such habits with them into adulthood, beyond the window of enhanced brain malleability afforded by adolescence, replacing such habits with healthier ones can become extraordinarily difficult.

While we are young and measure the future in days rather than months and years, many of us are willing to risk our health (and freedom!) for the short-term enjoyment produced by commonly used and abused drugs. Once we mature enough to value the future, most of us realize the magnitude of the mistakes that we made and are no longer willing to make such trades. We could do kids a huge favor by helping them avoid the pitfalls of drug use to begin with. Substance use is a slippery slope. It's much easier to prevent kids from sliding down it than it is to hoist them back up to the top and keep them from sliding down again. For this reason, every effort should be made to dissuade kids from heading down these dead-end pathways and to debunk faulty expectations about positive outcomes resulting from drug use.

What is a drug?

Never before in human history has it been so difficult to define exactly what a drug is. It makes the standard "Just Say No to Drugs" mantra seem even sillier in light of the smeared lines between legal, presumably good drugs, and illegal, presumably bad drugs. According to the Food and Drug Administration (FDA), a drug is something that is:

> "intended for use in the diagnosis, cure, mitigation, treatment, or prevention of disease" [1]

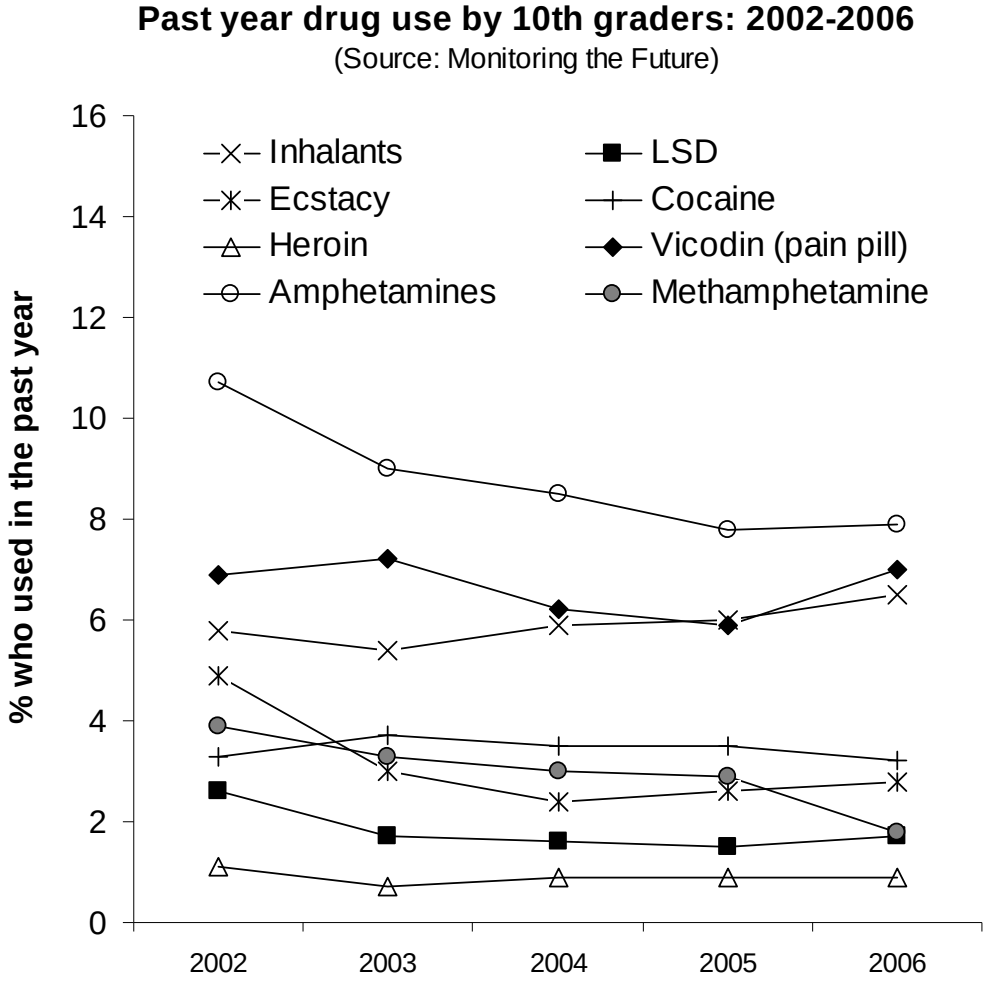
Interestingly, on the surface, the FDA's definition of drug seems to exclude many substances used to get high, because many such chemicals are not intended to treat or cure diseases. How can we possibly make sense of this mess? In a subsequent

section, we will look at the history of laws regarding drug use. This should help clarify how we arrived at the current, confusing view of what drugs are and the equally confusing approach we use to deal with them.

For the sake of our discussion in this book, we will define the term "drug" as any non-food substance that alters the way that the human body/brain functions. That allows us to include both prescription pharmaceuticals and street chemicals. Like pornography, we all know drugs when we see them. However, when it comes down to it, it is quite difficult to find a definition that includes everything that should be included and excludes the rest.

The slippery slopes of drug use

Most alcoholics, crack addicts, methamphetamine addicts, chronic weed smokers, junkies and cigarette smokers start out using their drugs of choice recreationally. It isn't until people start sliding down the slope of abuse and addiction that they realize they're in trouble – if they ever do. How steep the slope is will depend on several factors – including the addictive potential of the drug, the intentions behind the drug use, cultural attitudes about the drug, ease of access to the drug, the individual's history of drug use, genetic predispositions, and the presence and strength of protective factors. Some drugs are far easier to become hooked on than others. Heroin and drugs related to it – painkillers like Vicodin and OxyContin, for example – have an extremely high potential for abuse and dependence. They feel good, they act fairly quickly, and a small amount of withdrawal (i.e. physical and psychological discomfort) can occur after a single dose – which can motivate the user to use more of the drug to ease discomfort.



In general, levels of drug use by adolescents declined slightly in the opening years of the new millennium, though use of some drugs, such as prescription pain killers, increased. This is captured in the graph above, which displays trends in use of various drugs by 10th graders between 2002-2006.[2] Each year represents a new wave of students, suggesting that slightly fewer adolescents are picking up the baton of drug use than in years past. Good news, though any use of some of the drugs listed could be disastrous.

Despite small declines in the use of some drugs, non-medicinal use of prescription narcotic pain medications is on the way up and the problems they cause are here to stay for awhile.

Indeed, the number of Americans age 12 or older that abuses or is dependent on prescription pain killers is now on par with the number that abuses or is dependent on cocaine. Given the ubiquity of pain killers in medicine cabinets, schools and neighborhoods, it does not appear that the situation will improve anytime soon.

Let's look at a scenario that involves a kid living on the pain killer slope. We'll begin with the first pill and see how each subsequent decision influences the likelihood that an individual would find oneself in serious trouble down the road.

Side*Notes*

Heroin for kids. "Cheese" heroin in the Texas area.

One unfortunate consequence of the war in Afghanistan has been the unhindered outflow of opium from this poor country. Much of this opium is eventually converted to heroin and smuggled into the United States. Heroin also enters the United States from Mexico. The flooded heroin market has led to the development of cheap and potent forms of the drug. In the past few years, this has included a form of heroin called "cheese," presumably because the final product looks a bit like grated parmesan. Cheese heroin is made by combining Mexican black tar heroin, up to about 8% potency, with crushed up tablets of Tylenol PM. The combination is then snorted. At least 21 teenagers have died from overdoses of "cheese" in the Dallas, TX, area since 2005. At $2 per buzz, the cost makes the drug too alluring for some kids to pass up.

Let's say you are an adolescent who goes to a party and decides to take a pain pill that a friend offers. It feels good. Really good. Much better than your typical internal state as a typical teen. She gives you a few for later. You decide to take one before school. No one notices. You take one at home. Your parents don't notice and it helps make family dinner more enjoyable. You start thinking about them in class and wishing you are on one when you aren't. It isn't heroin and you aren't taking them every day or anything. They're prescription drugs not "sketchy drugs." That makes a big difference, right? Adults take them, so how can they tell you not to take them?

You discover that your parents have an old prescription in their medicine cabinet and you grab them. Score! Dozens of

pills! Taking pain pills is on your mind a lot at this point. You worry about running out. You can't wait to get more. It's just so much more enjoyable than your normal state, and you notice that you seem to feel a little extra bad when you don't take them. You begin wondering if it could become a problem for you and convince yourself that you'll cross that bridge when you come to it. As a strong willed kid, you're sure you can handle it. The die is cast.

You started taking pain pills recreationally for pleasure and now you're going to have to experience a fair amount of pain to stop, assuming you can. After you stop, the real battle begins – not going back to them. If you can make it through the first few weeks, the physical pain will dissipate, but you may spend the rest of your life wanting another pill. Your old friends are now threats to your sobriety. You can't go to parties anymore, unless you want to risk going back to being an addict.

Side*Notes*

Are addiction and dependence the same thing?

No. Colloquially, the words addiction and dependence are often used as synonyms. In reality, these phenomena are separate but overlapping. The term *addiction* refers to giving oneself over completely to something, whether it is a drug or Internet gambling. Intrusive thoughts, cravings and a compulsion to engage in the activity are all part of the addictive process. *Dependence* has a more specific physiological meaning. Following repeated exposure to a drug, the brain adjusts itself in a way that minimizes the impact that the drug has on brain function and behavior. This is called *tolerance*. If enough tolerance develops, the person can actually find themselves functioning at a subpar level during times when the drug is not onboard. This motivates drug use to get rid of withdrawal symptoms, which tend to be opposite of what the drug does for a person. The cycle simply continues from there.

It is possible for a person to be *addicted* but not *dependent*. This is probably the case with pornography or gambling problems. It is also possible to be *dependent* but not *addicted*. The author views his caffeine habit in this light. Of course, it is also possible to be both addicted *and* dependent, as is the case with cigarettes, heroin, alcohol and other abused drugs.

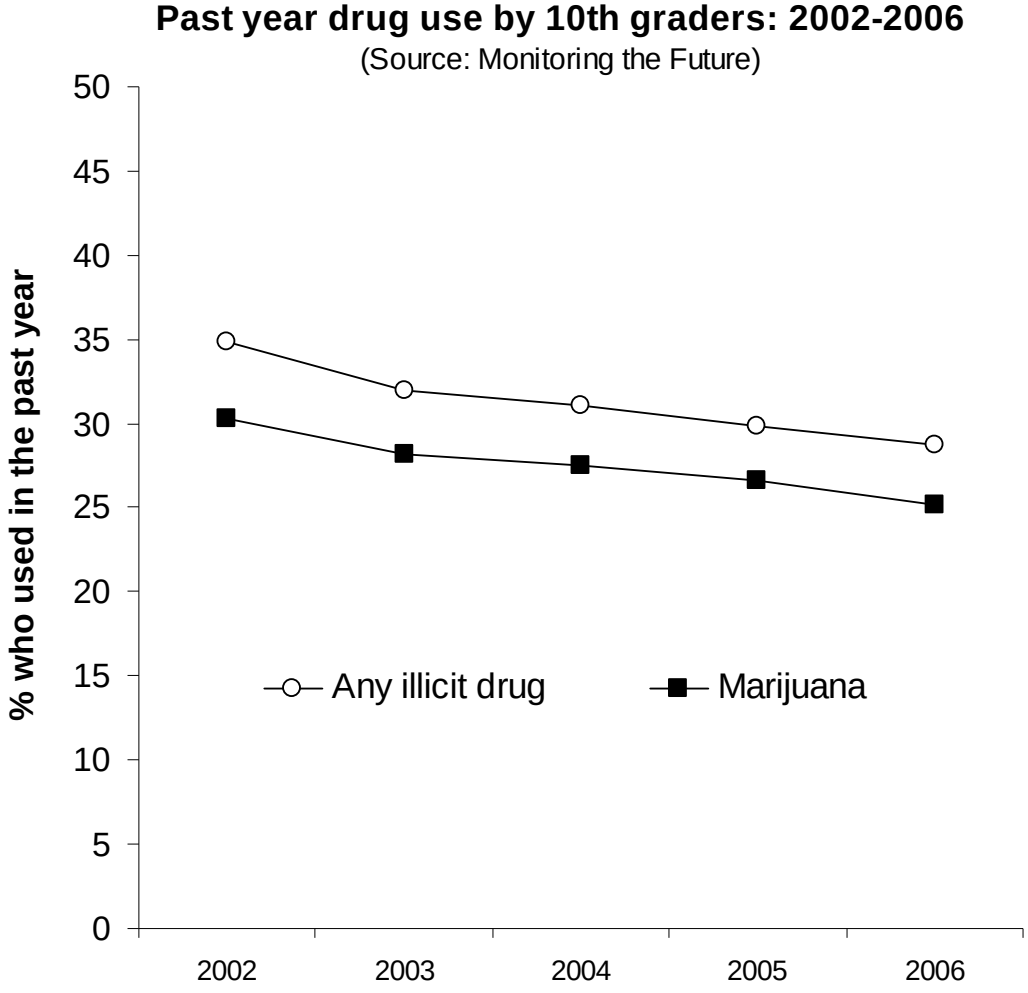
This scenario applies to a wide variety of drugs used by kids and adults these days, including cocaine, heroin, alcohol, ecstasy and nicotine. What goes up must come down, and because of tolerance, there is a law of diminishing returns with these drugs. Each time a user goes up, they go up a little less. Each time a user comes down, they come down a little farther. Because the rewarding effects decrease with each use, users often find themselves chasing the high and the fun. Breaking free from the gravitational pull of substance use once it has gone too far is far harder than many young drug users anticipate, and there is nothing fun about trying to learn to function again without the chemicals.

Marijuana is not quite as bad as many other drugs, and most savvy teens are aware of that fact. The drug has powerful effects on thinking and emotions, but does not seem, at least at the moment, to damage the brain in significant ways. Physical dependence is also less of an issue than with other drugs. In drug-to-drug comparisons, the science strongly suggests that drugs like alcohol and nicotine are far more hazardous and habit forming than marijuana. However, marijuana, too, can put users on a slippery slope, not to mention exacting some tolls on one's health.

The graph on the next page displays trends in marijuana use among adolescents, 10th graders in this case, during a five years period from 2002-2006. A clear trend toward decreased use is apparent, and follows a sharp increase in use during the 1990s.

Despite common misperceptions about the drug, marijuana definitely can be habit forming, and plenty of people – many of them teens – have difficulty quitting once they become accustomed to its psychological effects.[3] The drug alters the way that we think and feel. It has powerful effects on the higher cortical structures in the brain, thereby altering one's perception of the world and their place in it. This isn't all bad, but it certainly can be for kids or adults that learn to hide within those cognitive changes.

In laboratory studies, chronic marijuana users show all of the classic signs of addiction – looking forward to using the drug, worrying about running out, using the drug despite its interference with daily activities, preferring the drug state over sobriety, arranging one's life around use of the drug, and having difficulty cutting down on use.[4] Although the symptoms of addiction and dependence might be less severe with chronic marijuana use than heroin use, such symptoms do occur and reflect the difficulty that many marijuana users have functioning without the drug once it has become part of their daily routines.



Recently, withdrawal symptoms from cessation of chronic marijuana use were well-characterized in a clever study [5] in which researchers brought young daily users into a laboratory and allowed them intermittent access to marijuana and placebo joints, which are quite similar to the real thing. Three days of access to marijuana were followed by three days of access to placebo. Withdrawal symptoms, including anxiety, craving and aggression were measured throughout. On days without marijuana, the subjects' levels of anxiety, craving and aggression were all elevated. These symptoms were minimized by giving subjects small amounts of THC – insufficient to produce intoxication – in pill form, strongly suggesting that the mood changes were directly related to the drop in THC levels in the brain during non-smoking days.

Like adults, teens are often drawn to drugs for the pleasure and psychological distraction they produce. Whether one chooses pain pills or marijuana, initiation of use immediately places one on a slippery slope. Dabbling in the drug a little too much can lead to physical and psychological discomfort upon cessation, and pulls kids away from the primary purpose of adolescence – to interact with the world in healthy ways and prepare oneself for the challenges of adulthood. Unless one lives in a culture that places a high value on rolling nice joints or being able to inject large amounts of heroin without dying, drug use during adolescence ultimately has a high likelihood of being a waste of time, no matter how fun it can be.

How normal adolescent development might predispose teens to experiment with drugs

Most drug use begins during adolescence, if it begins at all. Statistically, if an individual can make it through the second decade of life without developing a drug habit, the odds go down that it will ever happen. The reasons for this are complex, but the state of adolescent brain development probably contributes.

As we have discussed briefly in previous chapters, the teen brain is in flux. As the transition from childhood to adulthood ensues, the brain enters a unique period of plasticity. The changes that take place serve multiple purposes, including making us more interested in exploring the outside world, taking some chances, and trying out different personas until we find one that fits. Most kids also feel emotionally blah during early adolescence. All of these changes predispose us to experiment with drugs during this stage of life.

The frontal lobes, located behind the forehead, play central roles in thinking about the consequences of our actions and putting the brakes on to keep us from doing things that could have dire consequences. At about the age of 10, the frontal lobes enter a decade-long period during which they are molded and fine-tuned by interplay between the adolescent and the outside world.[6] The changes that take place help prepare the adolescent to make forward thinking decisions and control urges during the daily grind of adulthood. Until changes in the frontal lobes are complete, they are not working at full capacity and can make it difficult for teens to function like adults with regard to delaying gratification and planning for the future.

During the early teen years in particular, the frontal lobes are far from finished developing, and this immaturity can manifest itself in difficulties with decision-making and impulse control. As such, a teen might have difficulty inhibiting the urge to do something that sounds fun, even if she can see that negative consequences might follow. In addition, many teens have lofty, positive expectations about the good that can come from risky behaviors, like drinking and using other drugs. This can further tilt the balance in favor of initiating drug use. Those of us who try drugs during adolescence and find that they satisfy our adolescent needs better than the environments in which we live might have real difficulty mustering the frontal lobe strength necessary to keep ourselves from going back for more. This is

where the importance of adult mentoring and support becomes quite clear. One of the primary roles of adults in the lives of teens is to serve as training wheels for their developing frontal lobes until adult-like decision-making skills and impulse control are fully online.

Dealing with teen drug use

Drug use is both a public health issue and a legal issue. Unfortunately, our national policies regarding drug use have thus far focused disproportionately on the legal side. We are now nearly a century into America's official "War on Drugs." How are we doing? There has never been a better time, from an economic standpoint, to be a drug user. With rare exception, most commonly used and abused drugs are easier to find than a few decades ago, cost less, and are more potent. If you've ever wanted to be a heroin addict but couldn't locate or afford heroin, now is a good time to live out your dream. In addition to become cheaper and more potent, the list of drugs from which to choose has become much longer and now includes a litany of prescription substances that can alter consciousness, produce pleasure and damage health.

Punitive approaches to dealing with adolescent drug use have their value. When laws are broken, some sort of punishment must follow or the laws will not be obeyed. However, the data overwhelmingly compel the conclusion that the current approach to dealing with teen substance use has generally failed and that new directions are needed.

Prevention and education programs remain the cornerstone of non-punitive efforts to dissuade kids from using substances, and the evidence indicates that they can work. Drug courts appear capable of reducing the likelihood that kids who enter the legal system due to drug use will return. We will explore such efforts in a moment. First, let's take a tour of the history of the War on Drugs and examine how and why it has failed to meet its objectives.

Anatomy of the failed War on Drugs

To understand where we are as a nation with regard to dealing with teen drug use, and to figure out how to proceed from this point, it helps to place the present situation in its historical context. Here is a brief chronological overview of drug use in America and the laws aimed at combating it. We'll begin in 1900 and quickly work our way to the present. Those not interested in the history lesson can skip ahead to the section on prevention efforts without missing anything vital.

In America at the turn of the 19th century, drug addiction was a major problem, particularly addiction to morphine. Morphine is one of the three major psychoactive components found in the sap of the opium poppy. It is a potent pain reliever for those with pain. For those without pain, it can produce temporary feelings of bliss – a state without fear or concern. That is, until the buzz wears off, at which point the fun ends. Non-medicinal, and even medicinal, use of morphine automatically puts an individual on a very slippery slope. The drug eases pain for those who need it, and produces bliss in those who use it but don't need it. Obviously, for both groups of people, there is powerful reinforcement to continue using.

Where did all of that morphine addiction come from? In the mid-1800s, morphine was widely used during the civil war to ease the pain of injuries and make operations tolerable. At least, this was the case in the North. Before getting a limb hacked off in the South, whiskey was often the only comfort available. So, soldiers represented a portion of morphine addicts. However, according to Richard Bonnie, Director of the University of Virginia Institute of Law and former Associate Director of the National Commission on Marihuana and Drug Abuse, and Charles Whitebread, Professor of Law at the University of Southern California Law School, a large percentage of morphine addicts in the early 1900s was comprised of middle-class white women. Door-to-door salesman would often come through

offering elixirs to fix what ails you. Many of these contained up to 50% morphine. No matter what is wrong with you, whether it is physical or psychological, chugging morphine would probably ease your discomfort for a time! Such elixirs could also be purchased over the counter at drug stores and must have brought about plenty of untimely deaths.

The early history of the drug war in the U.S. is nicely summarized in a 2001 document prepared for The Canadian Senate Special Committee on Illegal Drugs.[7]

> "From the time of the U.S. Civil War (1861-1865) to the end of the 19th century, the use and sale of opium, morphine, cocaine and other psychoactive drugs were legal and common. Opium was available with or without a prescription and was an ingredient in many patent medicines, including various pain-killers, cough mixtures and teething syrups for infants. Cocaine was also used medicinally, as well as in soft drinks and wine. Things started to change around the turn of the century. Heroin was first isolated in 1898 and was purported to convey the same benefits as opium or morphine, without the risk of addiction. The realization of heroin's addictive properties soon after its introduction coincided with racist appeals to protect American society from drugs. Initially, two drugs were targeted: Cocaine, associated mainly with blacks who were said to go on violent rampages under its influence, and opium, the smoking of which was associated with the Chinese. Alcohol temperance societies and religious groups also played key roles in lobbying for prohibition."

Passage of the Pure Food and Drugs Act of 1906 marks the beginning of Federal legislation aimed at controlling the

distribution and use of drugs in the U.S. The act required that food and drugs be approved by the government before sale, distribution, and consumption. The agency we now know as the Food and Drug Administration (FDA) was created to handle this. The act required that certain drugs be sold only by prescription from a doctor, and that those that can be habit forming contain a warning to that effect. Suddenly, morphine was not easily available and thousands of citizens had to deal with the reality of addiction and withdrawal.

In 1914, the Harrison Act was passed. It was the first Federal law in America criminalizing the use of drugs for non-medicinal purposes. The act outlawed the use of morphine and related drugs (opium, codeine), as well as the use of drugs derived from the coca plant (cocaine). It did so by placing an enormous tax on the non-medical distribution of the drugs. Why a tax rather than a crime? The Constitution gives states, not the Federal government, the power to prosecute criminal activity. However, two powers that were given to the Federal government included taxation and the regulation of foreign and interstate commerce. Hence, placing a high tax on drugs and prosecuting those who did not pay the tax afforded a way for Federal control of behavior deemed criminal. Getting arrested for possession at that time would have led to a charge of tax evasion! Because the drugs were outlawed via taxation, the law was enforced by people in the Treasury Department. The act also required doctors to pay a tax every year in exchange for a stamp allowing them to prescribe the outlawed drugs.

In 1937, another tax-related drug law was passed, called the Marihuana Tax Act. By the time this Federal law was passed, 27 states had already outlawed marijuana. Several states, like Texas, were trying to deal with the influx of Mexican workers, many of whom smoked marijuana. Law professor Charles Whitebread describes the climate this way:[8]

> "All you had to do to find out what motivated the marijuana laws in the Rocky Mountain and southwestern states was to go to the legislative records themselves. Probably the best single statement was the statement of a proponent of Texas' first marijuana law. He said on the floor of the Texas Senate, and I quote, 'All Mexicans are crazy, and this stuff (referring to marijuana) is what makes them crazy.' Or, as the proponent of Montana's first marijuana law said, (and imagine this on the floor of the state legislature) and I quote, 'Give one of these Mexican beet field workers a couple of puffs on a marijuana cigarette and he thinks he is in the bullring at Barcelona.' "

When states in the northeast caught a whiff of the supposed problems in the southwest, many took preemptive measures to keep citizens from using marijuana in case the drug found its way up there. Alcohol was outlawed by the 18th amendment, a.k.a. "Prohibition," and the north was replete with recovering narcotic addicts following passage of the Harrison Act. It seems they were concerned that recovering addicts and those craving a drink might spiral downward into addiction if marijuana were not outlawed. Based on the hype in southwestern states, they had legitimate reasons for their concerns.

Congressional hearings leading up to the Marihuana Tax Act lasted just a few hours. The legal fate of marijuana in America was probably sealed by the testimony of Henry J. Anslinger, Commissioner of the Federal Bureau of Narcotics during more than three decades – from 1930 until 1962. Commissioner Anslinger told Congress that,[9]

> "Marijuana is an addictive drug which produces in its users insanity, criminality, and death."

Anslinger believed that punishing drug users was the only way to deal with the problem. He would have his way.

In addition to Commissioner Anslinger, the Chief Counsel to the American Medical Association, a lawyer and doctor named William Woodward, testified at the hearings. Interestingly, in direct contrast to the testimony of Commissioner Anslinger, Dr. Woodward stated,[9]

> "The American Medical Association knows of no evidence that marihuana is a dangerous drug."

According to transcripts of the hearing, a Congressman immediately replied,[9]

> "Doctor, if you can't say something good about what we are trying to do, why don't you go home?"

The bill passed through the House and Senate with virtually no debate and was signed into law by President Roosevelt.

In the 1940s, Commissioner Anslinger learned that many musicians, particularly jazz musicians, were smoking marijuana despite the new law. He sent out letters to local law enforcement agencies instructing them to determine which musicians in their area were using the drug. The plan was to have a huge national roundup of marijuana smoking musicians during a single, undisclosed, day. This proved more difficult than the Commissioner expected. He had trouble finding law enforcement agencies that would cooperate or that could identify musicians who were breaking the law. In 1948, the Commissioner appeared before a Senate Committee and requested funding for more agents. When asked why he needed more agents, the Commissioner stated,[9]

> "Because there are people out there violating the marijuana laws."

When asked who was breaking the law, the Commissioner replied,[9]

> "Musicians. And I don't mean good musicians, I mean jazz musicians."

Drug use in America did not go away so, in 1951, the Boggs Act was passed. The Boggs Act increased penalties for all drug violations by four-fold. In his testimony supporting the law, Commissioner Anslinger was willing to admit that he was wrong about the addictive nature of marijuana and that it does not cause insanity and death. His new position was that it is unequivocally the first step toward heroin addiction.

The Daniel Act was passed in 1956. The impetus for the Act was organized crime and the realization that much of the money that flowed underground stemmed from drug trafficking. The Daniel Act increased penalties even further.

During the late 1950s and throughout the 1960s, many states passed their own laws increasing penalties for drug possession, sales, transport, and so on. Criminal prosecution of drug offenses took off and punishments often exceeded those for violent crimes by a long shot. In the words of Professor Whitebread:[8]

> "Just to show you where it was, in the same time period first degree murder in Virginia had a mandatory minimum sentence of fifteen years. Rape, a mandatory minimum sentence of ten years. Possession of marijuana – not to mention sales of marijuana with its mandatory minimum of forty years – mandatory minimum of twenty years."

In 1961, representatives from the American Medical Association and the American Bar Association worked together to assess whether drug addiction is best treated as a crime or a medical condition. They concluded that drug addiction is a disease and that criminal activity among addicts emerges from the combination of dependence on the drug and high prices due to the illegal nature of addictive substances. They also concluded that alcoholism was a much bigger problem than addiction to other drugs. They advocated for further research into treatment options and cautioned that prosecuting users as criminals could not, on its own, provide the answer to America's drug problem. Commissioner Anslinger severely criticized the report and countered that treating addicts in clinics would only increase the number of addicts, not decrease it.

Passage of the Comprehensive Drug Abuse Prevention and Control Act in 1970 led to significant changes in the way that we categorize drugs and prosecute drug offenses. The Act covered all drugs – with the exception of nicotine and alcohol. The Drug Enforcement Agency (DEA) was established in 1973 to enforce all Federal drug laws, including those in the Comprehensive Drug Abuse Prevention and Control Act. The new act repealed many of the previous drug laws, including the Harrison Act and Marihuana Tax Act, in favor of a new approach. The new approach involved sorting drugs into categories, or "schedules," based upon answers to two key questions

1. Does the drug have a medicinal use?
2. Does the drug have abuse potential?

The act proscribes that the penalties should be tied to the schedule of the drug. Below are the drug schedules, what they mean, and examples of drugs in the category.

Schedule 1. No accepted medicinal value and high potential for abuse and dependence. Pharmacies cannot sell them and doctors generally cannot prescribe them (marijuana is sometimes an exception to that rule). Marijuana, heroin, morphine, MDMA (ecstasy), LSD, gamma-hydroxybutyric acid (GHB).

Schedule 2. Limited accepted medicinal value. High potential for abuse and dependence. Some are available with prescription. Cocaine, codeine, amphetamines, methamphetamines, opium, oxycodone (OxyContin, Percocet).

Schedule 3. Accepted medical uses and less potential for abuse and dependence than the previous two. Some available with a prescription. Anabolic steroids (body building drugs), barbiturates, ketamine (Special K).

Schedule 4. Accepted medical uses and low potential for abuse and dependence. May be available with prescription. Alprazolam (Xanax), diazepam (Valium), flunitrazepam (Rohypnol), zolpidem (Ambien), modafinil (Provigil).

Schedule 5. Accepted medical uses and lowest potential for abuse and dependence. Regulated but do not require a prescription. Cough suppressants containing small amounts of codeine (e.g., Robitussin AC).

During the late 1960s and early 1970s, use of marijuana and psychedelic drugs became widespread in the youth counterculture, which included antiwar protestors and the like. Stressing the illegal nature of drug activities allowed for the easy targeting, demonizing and imprisonment of young people against the war. Nixon launched a very public war on drugs that amounted to a

war on disgruntled youth and vowed to rid the nation of the problem.

In the 1980s, the War on Drugs kicked into high gear under the Reagan administration. Crack cocaine use was a major concern then and preventing drug use was a passion of the first lady, Nancy Reagan. The first national media campaigns highlighting the horrors of drug use were launched, including the classic "This is your brain, this is your brain on drugs" commercial. Several acts, including The Comprehensive Crime Control Act of 1984, the Anti-Drug Abuse Act of 1986, and the Anti-Drug Abuse Amendment Act of 1988, increased federal penalties for drug violations. They also increased funding for enforcement of the laws. The Office of National Drug Control Policy (ONDCP) was created in 1988 with the passing of The National Narcotics Leadership Act. Leaders of the ONDCP have come to be known as "Drug Czars."

In the 1980s, presumably in part due to steps taken by the Reagan administration, drug use declined relative to 1970s levels. Indeed, in the late 1980s, marijuana use reached a 20 year low. Imprisonment for drug offenses surged, particularly for offenses involving the use or sale of crack cocaine, a drug associated with African Americans in inner cities. Penalties for the use or sale of powdered cocaine, associated with Caucasian drug users, remain far less harsh. Unfairly so.

In the 1990s, drug use among adults remained relatively constant, yet drug use among adolescents aged 12-17 skyrocketed. Most of the increase in overall drug use was driven by an increase in marijuana use.

As we have seen in this chapter, the first decade of the new millennium has witnessed small decreases in use of drugs overall.

Despite the passage of laws outlawing drug use and promising to punish American citizens severely if they still choose to do illegal drugs, drug use has not gone away. The

general approach that the U.S. has used to deal with drugs during the past century has failed. In fact, in some ways, we seem to be failing worse now than we were in the early 1900s. For every new drug law, it seems there is a report from a bipartisan or impartial committee concluding that users need better access to treatment services, not harsher punishments. Unfortunately, the laws are not based upon science. Indeed, the laws here often ignore science.

This is perhaps best reflected in the findings of a 1977 report by the New York Bar Association regarding the Rockefeller drug laws. The Rockefeller drug laws were the harshest in the country when passed in 1973 by the New York State government. The aim of the laws was to use severe mandatory prison sentences and harsher penalties in general to deter drug use and sales. The New York Bar Association concluded that the harsher penalties had no impact on drug abuse in the state and that mandatory sentencing didn't help. Yet, despite such reports, mandatory minimum sentences became en vogue. Spending on the law enforcement side of the drug war has grown astronomically – from around $2 billion in 1988 to well over $10 billion in 2008. In contrast, Federal funding on education and prevention initiatives is disappearing fast, despite evidence that well structured initiatives work. On the treatment front, funding and support have remained relatively stagnant over the years and only a few percent of adolescents who need help, probably somewhere around 10%, are estimated to get it.

We now have a century's worth of data demonstrating the limited utility of a largely punitive drug war. Some cities have chosen to take a new tact regarding how they view and deal with drug offenses, particularly those involving marijuana. Cities like Denver, Seattle and Oakland have made marijuana possession a very low priority for law enforcement, though it is still technically illegal. In Denver, adults 21 or older carrying an ounce of marijuana or less for personal use can receive tickets similar to those issued for traffic citations. Time will tell whether such

moves are good or bad for public health there. This kind of approach is in line with the science, but still requires intensive education efforts to ensure safe and responsible use, and only by adults. It remains to be seen how people there will respond to changes in the drug's legal status. This might not be the best approach, either.

Side*Notes*

Are criminally negligent drug companies and their executives exempt from the War on Drugs?

Pain medications are a godsend to those who need them, but are often abused by those who don't. In 2005, the number of Americans aged 12 and older that abused or were dependent upon prescription pain medications was on par with the number that abused or were dependent on cocaine. In the case of cocaine, billions of dollars in taxes are spent yearly tracking down and arresting dealers and users, and destroying coca fields in foreign countries. Mandatory minimum sentencing ensures that those who provide this addictive drug to kids pay for their crimes with their freedom. In 2007, the president of Stamford, Connecticut based Purdue Pharma acknowledged guilt in Federal court for intentionally misleading the country's MDs about the risks associated with its ultra-potent formulation of oxycodone, OxyContin. The company was made to pay a $634.5 million fine; a fraction of the billions it continues to make from the drug.

In a May 11, 2007, article entitled, "OxyContin maker, execs guilty of deceit," ABCNews.com quotes U.S. Attorney John Brownlee as saying:

> "With its OxyContin, Purdue unleashed a highly abusable, addictive, and potentially dangerous drug on an unsuspecting and unknowing public. For these misrepresentations and crimes, Purdue and its executives have been brought to justice."

Immediately after the settlement, Purdue Pharma representatives backpedaled publicly, claiming the settlement wasn't an admission of guilt and that OxyContin is safe. Not surprisingly, the public and many MDs remain enraged by the settlement and lack of prison time for guilty Purdue Pharma executives. The plea constitutes admission of responsibility for contributing to the documented overdose deaths of more than 400 citizens, many of them kids, and to 100s of thousands of cases of OxyContin abuse and dependence. The company was allowed to pay for its crimes in cash. Do you concur with the U.S. Attorney that justice was served in this case? How would the government have handled this scourge if the drugs were sold in plastic baggies rather than plastic prescription drug containers? Is it appropriate for such companies to use the nation's MDs as prescription dispensaries for dangerous drugs? Should MDs be reimbursed for their time in cases where companies plead guilty to misleading them?

In the past few decades, data have accumulated regarding the efficacy of specific treatment modalities and prevention initiatives. While punitive approaches have proven to be less than effective, education and treatment have proven themselves to be invaluable in our efforts to keep adolescents healthy.

Prevention and education programs – Do they work?

In a perfect world, everyone would make it through adolescence with some scrapes and bruises, maybe a few minor emotional or physical scars, and that's it. Because drug use can lead to more serious and sustained problems, it is critical that we give teens and their parents the tools they need to make wise choices. Often, teens are unaware of the problems that drug use can cause, and the ease with which things can get out of hand. Because we adults tend to focus on the illegal nature of drugs, so do teens. Adolescence is a time when challenging rules and evading laws can be fun, increasing the allure of drugs for some kids. Laws reflect external control. Getting teens to make wise choices around the issue of drugs requires making it relevant to them and shifting the sense of control here to an internal one.

There are several things that adults can do to help ensure that teens either make it through the teen years without testing the waters or, if they do, they do so without drowning. Having science-based, well-conceived, well-planned, and well-executed education and prevention programs is one of them. Let's take a look at some example programs, the approaches they use and how they have fared, beginning with one that didn't work.

Drug Abuse Resistance Education (D.A.R.E.) – Learning from failures

The story behind the D.A.R.E program is an interesting one. It begins in Los Angeles in the mid 1980s. Then police chief Daryl Gates hatched a plan to get law enforcement agents

into schools and, hopefully, dissuade substance use among teens at the same time. The premise of the program was simple – kids need to learn skills to resist peer pressure to use drugs. This fit perfectly with the "Just Say No" mantra offered by then First Lady, Nancy Reagan. Well-intentioned law enforcement agents administered the program to kids in 5th and 6th grade. Kids learned about the ravages of drug use and role-played scenarios in which they were approached on the school yard, in the hallways, or at parties, and offered drugs. The approach made intuitive sense, but intuition can be misleading.

During the 1980s and early 1990s, D.A.R.E. spread very rapidly, and eventually made its way into more than 70% of all schools in the U.S., as well as schools in more than 40 other countries. Communities embraced it, bumper stickers were plastered on cars everywhere, t-shirts were sold, and it seemed like D.A.R.E. was the answer. There was just one problem – it didn't work. It galvanized communities and raised awareness of some aspects of drug abuse, but it did not truly protect children from drug use. And so begins the most interesting part of the story.

In the 1990s, researchers began to point out the severe limitations of the D.A.R.E. program. These researchers had something that D.A.R.E. advocates lacked – data. The data failed to reveal any decreases in drug use among kids that had passed through the program. Overall, the only two noteworthy changes associated with the program were a short lasting increase in respect for law enforcement and a diminished likelihood that other prevention programs would increase the chances of drug use. Yes, odd as it seems, in some geographic and socioeconomic strata, kids who received school education and prevention programs were actually more likely to become drug users. For these kids, D.A.R.E. decreased the odds that further programming would contribute to drug use. However, the data

revealed clearly that D.A.R.E. did not decrease the chances that children would use drugs.

According to a February 15, 2001, article in the New York Times:[10]

> "D.A.R.E. has long dismissed criticism of its approach as flawed or the work of groups that favor decriminalization of drug use. But the body of research had grown to the point that the organization could no longer ignore it. In the past two months alone, both the surgeon general and the National Academy of Sciences have issued reports saying that D.A.R.E.'s approach is ineffective; several cities, most recently Salt Lake City, have stopped using the program. D.A.R.E. is also responding to a new hardnosed mentality among federal education officials, who distribute about $500 million in drug prevention grants each year. Starting last year, the Department of Education said it would no longer let schools spend money from its office of safe and drug-free schools on D.A.R.E. because department officials did not consider it scientifically proven."

D.A.R.E. failed for several reasons. First, kids aren't as weak as the curriculum presumes and direct peer pressure is not the primary fulcrum leading kids to start using drugs. Peer pressure is usually far more subtle and implied rather than in-your-face and confrontational. Another probable reason was its administration by law enforcement agents! That strategy might be fine for white kids in the suburbs, but what about kids in inner city schools or in areas rife with police corruption and deep mistrust between cops and citizens? America's prisons are straining at the seams, particularly with non-Caucasians. The U.S. contributes about 5% to the earth's population but holds 25% of the earth's prisoners. The vast majority of those serving

time for drug offenses, around 90%, are African-American or Hispanic. If your brother was arrested on a drug charge, pulled over on the basis of racial profiling, or roughed up by police, it's unlikely you'll respond well to drug-related messages from law enforcement officers in your classroom. While putting "good cops" in proximity to children might have helped build some trust with kids, it was not an effective drug education strategy.

It must be stressed that there is no doubt the program worked wonders in some highly involved communities, it simply didn't do so nationwide.

There are other, more subtle reasons for the failure of D.A.R.E. and similar well-intentioned programs. It turns out that administering programs to large groups of kids is not always the best idea. Nobody wants to be an outcast. For an individual to state, in a room full of peers, that he plans to say "No!" to drugs can make him feel like an outcast. In group settings, kids tend to glorify drug use, their own or use among others. This is why many adolescent substance abuse treatment programs forbid kids from sharing their drug use war stories in group meetings. Thus, in the context of a prevention program, the social dynamic could inadvertently reinforce pro-drug messages and increase curiosity about substances. For example, at the college level, mailing feedback to students regarding their drinking is more effective at reducing drinking than providing such feedback while the student is in a room with his or her peers. This is part of the reason that online programs like *AlcoholEdu*, from Outside the Classroom in Needham, MA, have the potential to be so effective. In group settings, many college students have a tendency to play up their levels of alcohol use rather than taking an honest look at their behavior.

When adults think about teen drinking and other drug use, we only see the potential negative consequences. Most programs, like D.A.R.E, are aimed at teaching kids about those consequences and using them to dissuade use. Research sug-

gests that kids are already aware that drugs have negative consequences, even if their knowledge of the actual facts is limited. While parents and educators try to dissuade use by focusing on the negatives, many kids remain attracted to the drugs because of their perceived benefits. Research suggests that many adolescents tend to overestimate the potential positive outcomes associated with risky behaviors, like drug use. Even if there's a chance that a drug can kill them, some adolescents will remain drawn to it because it seems fun and they tend to think that the really negative outcomes won't happen to them. Clearly, most of these perceptions about benefits are inaccurate. Not much good usually comes out of drug use during adolescence. Regardless, programs that fail to address misperceptions about the positive effects of drugs tend to fail themselves.

In the author's view, it is just as important to discuss the perceived benefits of drug use as it is to discuss the risks. For instance, alcohol can make it easier to be social, approach people, talk in crowds and so forth. But it can do some bad things, too. Taking this balanced approach has several advantages. It demonstrates an awareness of what motivates adolescents to experiment with drugs. It provides an opportunity to debunk rumors of benefits that are untrue and often circulated in ignorance of the facts about the drug's effects. This strategy also provides an opportunity for each teen to formulate their own strategy for dealing with situations in which drugs are available. A teen is far more likely to refuse the opportunity to try a drug if she has thought through the pros and cons and made an independent decision than if she has simply been taught a list of dangers and told to say "No!"

In response to critics, the D.A.R.E. program has been revamped. The curriculum now extends beyond 5th and 6th grade and includes booster programs during middle and high school – both very good ideas. With the reach and resources that D.A.R.E. has nationally, there is hope that the changes

could turn it into the program its creators wanted it would be. Time, and data, will tell.

Programs that work – Learning from successes

The world doesn't always cooperate with us and seemingly good ideas don't always pan out. We all wish that every treatment, whether it's a new medicine or a drug education program, could be thoroughly tested and studied before being tried. But that's not possible – so we often learn from our mistakes. Because the creators of D.A.R.E. believed in their approach and worked hard to implement it, a lot of very valuable information was gleaned from its successes and failures. The program did not accomplish its goals, but it has helped other programs to evolve. Over the years, prevention researchers have taken the lessons learned from failed programs and used them to guide the creation of successful programs. Many of these programs have only been implemented at the local level – often due to budget constraints, but also because some are not easily adaptable to national-level prevention.

One of the author's favorite initiatives, both because of its curb appeal and because of promising data, is *Project Northland*.[11] Project Northland is an alcohol prevention program that addresses alcohol use at multiple levels – from individual factors to factors in the community. Community-wide programs make sense in general. Project Northland includes programming aimed at kids from 6th grade through graduation, skipping only grade 10 – and students are not the only people involved. Parents and members of the community, including business owners, are also included. The program approaches the topic of alcohol use among adolescents from a very comprehensive perspective. You will not find any top down, authoritarian "Just Say No" slogans at use in Project Northland.

The content and strategies used in Project Northland are grade specific. Sixth grade programming focuses on par-

ent/child communication, classroom activities related to alcohol, and the formation of community task forces that work toward altering the culture of drinking, and attitudes toward underage drinking in particular, in the larger community. During seventh grade, a combination of role-playing, group discussions, and homework assignments are used to educate young adolescents about alcohol. At this time, community task forces address city-wide ordinances and talk to business owners, while kids in a peer program help organize alcohol-free events. During eighth grade, students are urged to become active in their communities. Ninth grade includes education and activities surrounding drinking and driving, as well as teaching kids to evaluate alcohol advertisements. Programming during 11th and 12th grade builds upon the work of previous years and includes debates and discussions regarding the pros and cons of drinking, not just in terms of individual outcomes, but in terms of the health of the community.

Data indicate that the program works. Measurements taken at various stages of the program suggest that program participation leads to:

- Slower rates of increased drinking throughout high school
- Lower levels of cigarette smoking and marijuana use
- Increased communication between students and parents about alcohol
- Less permissive norms regarding adolescent drinking among parents of program participants

Not bad! So, in short, Project Northland seems to be a success. Unfortunately, its scope and complexity will make it difficult to employ at the national level. However, the early success of Project Northland demonstrates that prevention programs can work and highlights the importance of addressing

issues like underage drinking in a much broader context than simply listing the negative effects of the drug and using the threat of punishment to deter use.

In contrast to in-depth, interactive programs like Project Northland, some programs aim to change attitudes and perceptions of drug use via media campaigns. One of the more promising new media campaigns is *Above the Influence*.[12] The message the campaign conveys is that drugs aren't necessarily going to hurt you, but they can take you away from experiencing life to its fullest. No program before it has succeeded in conveying this crucial point to kids. Hopefully, this one will. One commercial slot for the campaign shows a boy sitting on a friend's couch. The boy says that he smoked weed and nothing bad happened. In fact, he says, smoking weed seems to be a lot safer than going out into the world and actually doing things. For these reasons, our protagonist stands up and proclaims that he is getting off of his friend's couch and heading out into the world to experience the adventures of life.

This is a sensible approach, and one that is consistent with what we know about both drugs and adolescent development. It seems a vast improvement over recent ad campaigns from the Office of National Drug Control Policy, which have thus far relied on ineffective and sensationalistic messages. Let's see if these examples ring a bell. Shortly after September 11th, ads aired telling kids that if they purchased marijuana they could be complicit in acts of terrorism. A few years ago, a public service announcement was released in which a boy smokes marijuana and accidentally shoots his friend in the head with a loaded gun from his dad's desk drawer. Yes, these things could happen, but it's more likely that a kid will simply waste his time and blow the opportunity to grow in healthy ways than accidentally kill his friend with his father's loaded gun.

The Above the Influence website includes metered, science-based information about how marijuana affects the

brain. The site includes an interactive graphic of the human brain in which users can click on various brain areas to see what marijuana does to them and how those changes affect perception and performance. A very different approach, and one that seems to hold potential.

Finally, it is worth noting that the Above the Influence message extends far beyond the topic of drug use. It is a pro-social, pro-health, pro-kid message that can be adapted to address a number of other risks facing adolescence – like bullying and sex.

Other programs deserve mention here, as well. *Life Skills Training*, the *TRUTH* campaign for smoking prevention, the *Seattle Social Development Project*, and *Big Brothers Big Sisters* are all programs that have shown successes. Many of these programs kill lots of birds with just a few stones. They recognize that risky behaviors tend to cluster. For instance, smoking cigarettes predicts higher levels of alcohol use among teens, high levels of alcohol use predict higher levels of violence, violence predicts drug use, and so on. Many of these programs promote pro-social behaviors by teaching kids how to function in the world, rather than driving home frightening messages about one specific drug or another. Logically, kids who are coping well with life will be less likely to get caught in the gravitational pull of drugs.

In addition to programs aimed at altering the culture surrounding drinking and drug use, there are several programs that target individual kids with great success. *Brief Motivational Interviewing* is an approach developed masterfully by researcher Dr. Peter Monti and colleagues at Brown University and the Providence Veterans Affairs Medical Center. It involves getting kids to take a close look at their drug use and its role in their lives. This is particularly helpful when done shortly after life changing experiences involving drugs, such as when a kid ends up in the ER after drinking too much. It is based on an effective therapeutic approach called *motivational interviewing*. One aim is to

help patients resolve issues about which they are ambivalent. A kid is more likely to be ambivalent about drinking again if he just got arrested for urinating on the sidewalk! Counselors trained in brief motivational interviewing can seize those opportunities and help orient kids in safer directions.

What can parents do? Communicate early and often!

Parents are the first line of defense in protecting kids from the negative impact of drugs. Unfortunately, the line does not always hold up so well. In the past century, the pace of social and technological change has quickened and adolescence has lengthened, causing a widening of generation gaps and making it more difficult to know how to talk to teens, even for parents who want desperately to do so.

The Partnership for Drug-Free America estimates that more than 1/3 of parents do not talk to their kids about alcohol. They also estimate that kids whose parents do talk to them about alcohol are 42% less likely to drink than other kids. Organizations from the National Parent Teacher Association to the National Institute on Drug Abuse site communication between parents and teens as pivotal in preventing negative behaviors like drug use and nudging kids toward positive alternatives.

Many parents are uncertain how to talk with their kids about alcohol and other drugs, and often have inaccurate perceptions about the risks involved. They are also often unaware that their kids drink or do other drugs, and tend to underestimate the extent of drug use among their kid's peers. They might feel overwhelmed by the prospect of trying to become well-informed enough to talk to their kids, or they might believe that their kids actually know more than they do. Fortunately, plenty of good sources are now available that translate the science of drug actions into simple, useful, and accurate language. And the fact is that while kids have access to an immense

amount of drug information on the Internet, from friends, or from health classes – much of it is wrong. Once parents recognize that, and then learn the facts for themselves, they are well on their way to having productive conversations with kids about substance use.

Here are some tips that might make the process easier and more effective:

- Do your homework first. The following National Institutes of Health (NIH) web sites - www.niaaa.nih.gov and www.nida.nih.gov - are good places to begin, but be aware that the NIH is not free of political influence. The books *Buzzed* and *Just Say Know*, both written by colleagues of the author from Duke University Medical Center, are also excellent resources.
- Talk to kids as soon as you think they are capable of understanding the issues. And the first talks don't have to be about drugs. Talk to young children about their bodies – the kinds of things that keep them healthy, like good food, and the kinds of things that can harm them, like injury and illness. Help them to understand, at a very early age, that the things they put into their bodies, such as foods and medicines, all have an impact on how they feel at present and how they will ultimately develop as they grow. With these building blocks in place, when it comes time for a conversation about drugs the job will be much easier.
- When talking about drugs and drug use, be sure to focus plenty of attention on the false expectations that people have about what drugs will do for them. Research suggests that teens are aware of the general risks of drug use, but tend to have an overblown expectation of how good it will be.

- Use TV commercials, both public service announcements and drug company commercials, as opportunities to bring up the topic of drug use in general and to discuss the tactics of advertisers.
- Establish clear expectations surrounding alcohol and other drug use. What is your family policy? What consequences would follow violations? Consider posting these policies on the family refrigerator.
- If you drink, model healthy drinking practices. Kids follow our lead. In fact, research suggests that kids who see their parents intoxicated are more likely to drink to intoxication themselves.
- State your willingness to drive your teen home, no questions asked until the next day, if he is uncomfortable getting into a car with someone for any reason. This compromise can build trust and help keep kids safe. If teens follow through on their end of the deal, it can also save parents some serious stress!

Many parents still believe the myth that having conversations with kids about drugs will plant ideas in their heads and increase the likelihood they will end up doing them. When it comes to most unsafe behaviors – alcohol and other drug use, sexual promiscuity, violence, and so on – open, honest and respectful communication between parents and kids tends to increase the odds that adolescents will avoid the pitfalls and make healthy choices. While such conversations will plant ideas in kids' heads, such ideas should help keep them safe, not increase the odds that bad things will happen.

Reconciling your past with your adolescent's future

What goes around really does come around. If you are currently an adult, it's a safe bet you thought you were far cooler

than your parents when you were a teenager. It's also a safe bet that your kids will think they're much cooler than you! Having been a cool teenager does not make the task of parenting any easier. As we have seen, adolescents are built to internalize what we teach them while pushing away at the same time. It's possible that the best stories from your teen years will be met with rolling eyeballs and sheer boredom if you try to share them with your adolescent. Every generation thinks they have figured out what the previous generation missed. Most teens think that adults are boring and out of touch. That's okay, and should not interfere with one's ability to guide a teenager down the right path. When faced with rolling eyeballs and sighs of boredom, try to keep your ego out of it, recognize that it is normal, and stay on task. Remember, the goal is not to be well-liked, it's to keep your adolescent moving in a healthy direction.

One of the challenges that parents face when trying to have forthright conversations with their kids about drugs is the fact that many current adults dabbled with drugs when they were young. Statistically, the odds are better than 50/50 that an adult who came of age in the 1970s or 80s has at least tried marijuana, and many were (or still are) regular users. This can certainly make the task of discussing drugs with kids more daunting, particularly for those who enjoyed their experiences and did not suffer any observable repercussions. How can we convince teens that drugs will ruin their lives if we, ourselves, have done some of them and survived? How can we maintain open and honest lines of communication if we are not willing to share such stories with our kids?

Fortunately, it is quite possible to talk with teens openly and honestly about the risks of substance use without obfuscating the facts or pretending to have lived the life of a saint. It's not possible to make a specific recommendation about whether, or to what degree, to be forthcoming with your teen about your own drug use history. However, it is a good idea to try hard *not* to fall into the trap of trying to convince a teen that you are as

cool as you say you are by telling them your own drug stories, particularly if the stories involve you having lots of fun. It might get a teen to pay closer attention to you while you speak, but it is unlikely to help them make better decisions when it comes to drugs, and could put you in the position of looking like a hypocrite if you ever have to discipline your teen because of drug use.

When gearing up to talk with a kid about drugs, recognize that knowledge about the risks inherent in drug use during the teen years has expanded greatly since today's adults were kids. We had no clue 20 years ago that the brain was still developing during adolescence, or that drugs like alcohol can have a lasting impact on the teen brain (see the next chapter for a brief overview of that literature). Thus, regardless of one's drug use history, it is quite clear that we simply did not know then what we know now about some of the risks. This simple fact should give previous drug using parents the conviction necessary to work hard at dissuading drug use by their own kids.

Importantly, efforts to dissuade drug use by adolescents should go hand-in-hand with identifying and promoting activities that scratch the adolescent itches that often lead to experimentation with drugs in the first place. Kids who are passionate about their hobbies or busy with extracurricular activities are much less likely to turn to drugs for thrills than kids who or bored and lack healthy outlets for their needs to explore and be social. Similarly, adolescents that have a high sense of self-worth, an internal locus of control, and who are surrounded by supportive and loving adults are less likely to turn to drugs to help them cope with the pressures of life.

How can you tell when drug use has become a problem?

Most teens who experiment with drugs of various kinds do not end up developing serious problems with them, but some do. Before we can treat a substance abuse problem, it has to be

spotted. Statistics suggest that, by their senior year in high school, 80% of today's teens will have consumed alcohol outside of the home, 50% will have smoked marijuana, and at least 10% will have taken pain pills recreationally.[13] The fact that an adolescent has used a particular drug cannot, on the surface, compel the conclusion that there is a clinical problem that requires professional treatment. However, it should raise red flags.

Based on the brain science, there are no known safe levels of drug use during adolescence. This includes alcohol. Any drug use by teens should be a cause for concern, but not necessarily concern sufficient to seek treatment. So, what do you do when your teen comes home smelling of alcohol, or you find that little bag of pot in the drawer next to the school planner and the dusty old Cub Scout Badge? Situations like this are serious, and it is very important that parents react quickly, calmly, and firmly. But how do you know when to get professional help, and what kind to get? This can be a difficult decision, but there are some obvious signs that can

Side*Notes*

Should companies that sell habit forming drugs be allowed to do stuff like this?

During the fall of 2006, the drug company that makes Lunesta, Sepracor, began offering potential patients seven free pills. Lunesta is a prescription sleep aid with the potential for abuse and dependence. As such, the tactic of giving away free samples of the drug to lure users is eerily similar to the tactics employed by many school-yard drug dealers.

> **Get 7 Free LUNESTA Tablets**
> LUNESTA® is proud to announce a new 7-Night Trial Script® Voucher Program. If you have trouble sleeping and your doctor thinks LUNESTA is right for you, take advantage of this special offer today to get your seven free tablets. After your doctor attaches the voucher to a completed and signed prescription form, go to the pharmacist of your choice and receive seven tablets, at no charge. This offer is only good through December 31, 2006.

Should such tactics be allowed? From the author's perspective, no. Glitzy ads for prescription drugs go too far as is. Using the nations MDs to pass out samples of habit forming drugs is unconscionable and inappropriate, and ought to be illegal.

point in the direction of pursuing formal treatment. This is true independent of the drug in question. These signs include, but are not limited to:

- Known dishonesty about the extent of use
- Use in the morning or difficulty functioning without use in the morning
- Stealing money or selling belongings to continue use
- Greater than normal amounts of irritability on family trips lasting more than a day or two
- A drop in grades associated with the onset of, or escalation in, substance use
- Failure to meet obligations as a result of substance use
- Hanging out with kids known to use/abuse drugs

Deciding to pursue further options is the easy part. The hard part is trying to figure out which options to pursue. Because money is often the determining factor in treatment decisions, early in the process, one should place a call to one's insurance company to determine how much assistance they provide for substance abuse evaluations and treatment.

If one has a family doctor or pediatrician, it is worth placing a call to their office to seek a referral for a treatment center. Alternatively, one can look in the yellow pages under "Substance Abuse" and visit the Substance Abuse and Mental Health Services Administration (SAMSHA) website to locate a treatment provider in the area.[14]

Once the potential provider has been identified, call and ask if it will be possible to evaluate your child to assess the nature and extent of their particular problems, and to assess whether there might be underlying medical or psychosocial triggers involved. Also ask about the specific services that are offered, the cost, and whether they deal with your particular

insurance company. Finally, schedule an appointment to have your teen evaluated, and hope they go peacefully!

Does treatment work?

It certainly can, but there are several factors that influence whether treatment will work initially and whether the benefits will stick over time.[15] In the author's own research, motivation to improve one's life at the onset of treatment serves as a strong predictor that an adolescent will get through a treatment program without relapsing. Other studies suggest that motivation predicts good outcomes after the treatment ends, as well. In short, when teens want to change, it is much easier to get them to change!

Treatments come in a variety of shapes and sizes, lengths and costs. Some programs are outpatient and involve the entire family. The author is particularly fond of programs like this because teen substance abuse influences, and sometimes stems from, the family dynamic. As such, the family needs to be engaged in the treatment process. It is naïve to think that a teen will stay sober after treatment if the home remains littered with liquor bottles and the fridge is packed with beer.

In addition to outpatient programs, which are the most widely used type of program for adolescent drug treatment, residential programs, in which the teen lives at the facility, are also available. The extent to which these programs involve the family varies considerably. There are also non-traditional options, like wilderness programs, boot camps, and alternative schools. The data on those programs are mixed. In general, it appears that wilderness programs can help, but not for all teens. These programs are superior to boot camps, which lack evidence of effectiveness. Alternative schools that provide intensive counseling and health promotion are a worthwhile option to consider for those with some money in the bank.

In all of the above cases, it is important to recognize that the environment in which the treatment occurs is probably quite different from the environment in which the teen uses substances, unless of course the teen lives in the woods or only does drugs while white water rafting! This makes it essential to plan carefully for re-entry once the program is finished. What safe guards will be in effect to prevent use once the teen returns home? How will the teen be shielded from triggers for craving and use, such as particular kids or contexts? Similarly, what parameters (rewards and punishments) will be in place to motivate the teen to avoid returning to their bad habits?

Treatment programs tend to focus primarily on the adolescent and perhaps the family. It will be up to parents to deal with any environmental factors that contributed to the onset of use and pose risks for triggering relapses. Counselors at the treatment program you choose should be able to help you prepare for your adolescent's re-integration into a normal life.

With regard to traditional treatment programs, it is difficult to compare outpatient to inpatient programs because they are so different from one another. One advantage of outpatient treatment is that the treatment can take place without completely disrupting the life of the teen. It is also much less expensive, does not disrupt the school year, and allows for greater family involvement. One advantage of inpatient programs is that patients can be kept under observation and should be guaranteed not to have access to drugs for a set period of time. For those with resources or adequate insurance coverage, inpatient followed by outpatient treatment is a possibility to consider.

Regardless of the treatment modality or setting, the hard work begins, not ends, with treatment. The difficulty for most kids is staying away from drugs once they return home. Formulating a strategy for keeping teens on the right track after treatment ends is essential to success.

Drug abuse often hides other problems

Many readers have probably seen the A&E program, *Intervention*. It's a good one. The show portrays the lives of individuals struggling with one problem or another – usually drug addiction, but sometimes eating disorders or other conditions. At the end of the program, each individual experiences an intervention. They are brought into a room with loved ones and friends and asked to get help. Those who say "yes" are promptly taken to a treatment facility specializing in their condition.

By watching these individuals live their lives, it becomes clear that, for many of them, drug abuse is only one of several problems. In some cases, the drug abuse appears to be secondary to an underlying psychological pathology (see Episode #31, "Cristy"). In other cases, the drug abuse stems from efforts to control physical pain. Episode #53, "Brooke," provides a powerful example. Here is a description from the A&E website:

> "Brooke, 26, was a beautiful teenager with a magnetic personality. An elite gymnast on the cheerleading squad, she looked forward to a successful and athletic life. But tragedy struck in her senior year when she was crippled by Still's disease, an early form of rheumatoid arthritis. Her doctors prescribed narcotics to ease her pain, but Brooke soon became addicted. Her heartbroken family has sought new treatments to help Brooke, but she denies she's an addict. Now her family has turned in desperation to their last hope – an intervention."

Until the actual intervention, Brooke's family underestimated the amount of pain she was in, and failed to appreciate the bind in which Brooke found herself – not wanting to be dependent on narcotics but not being able to cope with the pain without them. They viewed and treated her as if she were an addict by choice, which was clearly not the case here.

Helping an adolescent stay clean after treatment

Anyone who has ever wrestled with an addiction, smoking for example, is well aware that quitting can be the easy part. The trick is staying quit! Most of us know smokers who manage to go weeks without cigarettes, long beyond the length of time necessary to deal with the physical discomfort of withdrawal, which is usually over within the first week. Yet, their cravings, often in response to triggers like advertisements or even changes in the weather, can be enough to draw them back years later. Having a strong social support network and lots to do can help. Starting hobbies that are inconsistent with the drug habit, such as jogging for those trying to stay away from cigarettes, can also help. The point is that getting off the drugs initially, regardless of how painful and difficult it is, can be easier than staying away from the drugs in the days, weeks, months and years to come.

Context has a powerful influence on behavior. While sitting alone in her room, a teen in recovery might crave substances but can avoid doing them. But at a party with friends, the context in which the drug choice is made is very different. Clearly, in this context, the risk of relapse is much higher. Falling off of the wagon one time can be enough to trigger a resumption of drug use. Thus, it is paramount that kids in recovery *not* be allowed to hang out with the kids with whom they used drugs. Even if those kids quit, too, the risk of a synergistic relapse is simply too great.

Part of the recovery process must involve carefully monitoring who the teen spends time with and where. Slowly, over time and with maturation on the part of the kid, the leash should be lengthened and they should be allowed to engage in unsupervised activities with non-drug using kids in safe environments. The incentive to stay clean should include their relative freedom along with any other agreed upon reinforcers, like use of the family minivan. The consequences of screwing up

should be made clear and enforced. These rules should be laid out very clearly within a reasonable number of days after the end of in-patient treatment or during the early stages of outpatient treatment. Dealing with relapses can be heart breaking and frustrating. The experience can be made less difficult if the rules regarding relapses, as well as plans for what to do next, are etched in stone early in the process of recovery.

Home drug tests can now be purchased at most local drug stores, and they are worth considering for a while after formal treatment ends. It helps to explain to the teen why the tests are being used, which is presumably to help them stay on track. Consequences of failed drug screens should be decided upon and made clear to the adolescent up front. Every effort should be made to help the teen recognize that the drug screen is being use to promote their recovery, not out of distrust or with the intent to punish or pester them.

What if the teen fails a drug screen? To be certain that the test was accurate, it is worth performing another screen to verify. After that, the agreed upon contingency plan should be enacted. If the teen completed a treatment program, hopefully a counselor is available from the program to help you through the process via phone. If the teen denies drug use, but fails multiple urine screens, probability says to trust the tests.

What about kicking a drug using teen out of the house? Failed efforts to get a kid to quit using drugs can be a gut wrenching situation. Many parents are tempted to simply kick their child out of the home. If you feel like doing so, remind yourself that state laws consider kids the full responsibility of their parents until the age of 18. This means that kicking them out might not be an option to begin with! Again, if the teen has been through a treatment program, a follow-up consultation can be arranged to re-assess the problem and help determine the most effective course of action. If they are out of control, and parents feel threatened or afraid for the child, a call to law enforcement might be in order. The same is true if the teen

decides to run away from home and cannot be talked into returning.

Throughout the process, remind yourself that you love your child and want only what is best for them, even if you don't have access to those feelings at the moment. Despite their protestations, if you are truly concerned about the path they are on, the only reasonable course of action is to do your best to help them. Fortunately, the vast majority of teens make it to adulthood okay, even if the situation seems hopeless at the time. Like a bad sprain, the long-term prognosis for drug-dabbling-kids tends to be better than appearances suggest. Keep that in mind as you try to ride out the process.

Giving kids incentives not to use drugs?

Each year, an inordinate amount of money is spent trying to dissuade kids from using drugs, chasing down those who use them, and then punishing them for their actions. Recent research strongly suggests that providing incentives to recovering teen drug users helps keep them clean.[16] If this is true, then what about providing incentives, perhaps financial, to kids and families to avoid drugs *before* the drug use begins? For instance, what if kids and their families were offered the opportunity to earn free tuition or other compensation by getting through high school without using drugs? Bonuses could be added for maintaining a Body Mass Index in the healthy range, graduating from high school, scoring above the national average on standardized tests, and so on. In this way, we could provide incentives to kids not to use and reward them for making wise choices. Should they choose to use, they would lose the incentives. It would be like a stimulus package promoting health.

Think this sounds crazy? Think about it this way. Underage drinking costs taxpayers an estimated $60 billion per year. That's just drinking, not the use of other drugs. If the population consists of 300,000,000 people with an average life

expectancy of 75 years, and the population were equally divided among those 75 years (which it isn't), then there would be something like 4,000,000 eighteen year olds eligible to graduate from high school each year. Let's assume for a moment that we could spend our $60 billion in tax money on something else rather than on cleaning up the damage caused by underage drinking. We could offer $15,000 to each graduating senior who made it through high school with clean random urine screens and no alcohol or other drug violations. Perhaps free tuition or even a new car could be given as options instead of the cash.

Even if 10% of students actually made it, that's 10% of America's youth who will have protected their brains and bodies from the potentially deleterious effects of drug use and will not become a burden to society in those ways. Further, we would be reinforcing positive, healthy decision-making rather than waiting for an adolescent to screw up so that we can punish them. These kids could become positive forces for change, and the cash reward could help them start their young lives right. Unrealistic? Perhaps, but the fact remains – incentives work to keep kids from using, even as they struggle to overcome the cravings and other symptoms that linger well into recovery.

The need for substance abuse treatment for incarcerated adolescents

Under President Reagan, the drug war escalated to unprecedented levels. This led to skyrocketing rates of incarceration for drug offenders. At the Federal level, the number of inmates imprisoned for drug offenses swelled from 8,152 in 1984 (29.5% of all prisoners) to 77,867 in 2004 (54.1% of all prisoners). As hindsight now reveals, these escalating rates of incarceration have done very little, if anything, to deter drug use among either adults or juveniles. Indeed, as the number of adults incarcerated for drug offenses rose steeply in the 1990s, so did

rates of drug use among teens, those next in line for the adult justice system.

The current, general approach to rehabilitation in the juvenile justice system amounts to sending kids away for a long period of time in the presence of other troubled kids, with minimal effort to deal with their underlying problems. It would be the equivalent of sending a kid to her room for a long time for being rude, only her room is full of other kids with bad manners! For an increasing number of kids, detention homes or even prisons have replaced public high schools and community wide education and prevention programs for shaping attitudes and behaviors around the issue of drugs.

Side*Notes*

The importance of grass roots groups and motivated parents

Sheboygan, Wisconsin, is a fascinating city with a tremendous amount of cooperation between grass roots groups and government-funded public health entities. Not long ago, parents in a Sheboygan community became concerned as evidence accrued that heavy drug use, and perhaps dealing, was taking place in a neighborhood home. They dealt with it in an ingenious way, by placing signs saying something like, "This Is a Drug Free Home," in the yards of homes *around* the drug house. The people in the alleged drug-house eventually moved out. The incredible cooperation between parents and organizations in Sheboygan is made possible by the dedication of people like Phil Duket at the city's Family Resource Centers. Without dedicated people, many of them volunteers, the limited amount of funding available to strengthen communities wouldn't be sufficient to effect positive change. Sheboygan should serve as a role model for other communities for how to focus their resources on the problems of underage drinking and drug use.

The adolescent brain is very moldable. This means that there are unique opportunities for change, including rehabilitation, for teens. Simple incarceration is not enough to reform most kids, particularly those with substance abuse problems rooted in poverty and/or deep emotional distress. Locking them away in the midst of negative influences, and creating in them additional emotional discomfort, virtually ensures a trajectory of unhealthy development. For many, emotionally unhealthy

conditions are what initially led to the behaviors for which they were arrested. The data support the assertion that we should escalate our efforts to help kids in trouble, not tuck them away and try to forget about them.

The good news for those teens with serious drug problems is that, once they're incarcerated, they are forced to quit, at least for a while. The bad news is that, at present, a large percentage return to drug use after they leave. By dealing with substance abuse issues while a teen is in the juvenile justice system, the odds decrease that they will return to the justice system after release. This is highlighted in a 2000 report from the Council on Criminal Justice in Minneapolis, Minnesota.[17] The report concludes that substance use in the six months after being released from incarceration is a key predictor of recidivism (reentry into the juvenile justice system) during the two years that follow. Stated differently, adolescents who did not use in the six months post-release were less likely to find themselves back in the justice system within a two year period. As such, addressing substance abuse problems while kids are in the system could increase the odds that they leave detention heading in the right direction and decrease the odds that they come back.

Several reports suggest that a comprehensive approach for dealing with adolescent substance use and delinquency increases the odds that a teen will integrate back into society successfully rather than ending up back in the judicial system. Juvenile drug courts have emerged across the country to meet the rising demand for effective rehabilitation for young offenders. Originating in Dade County, Florida, in the 1980s, these courts represent alternatives to the ineffective turnstile that characterizes so much of the American justice system. Developed for adults, drug courts were adapted to the juvenile population in the mid-1990s. By 2005, a total of 1262 drug courts were active around the country, with 335 of them processing juvenile offenders.

The exact nature of individual drug courts varies considerably from community to community, but they share the common objectives of reducing the cost of incarceration, reducing levels of substance abuse, reducing recidivism, and helping teens get their lives back on track. These courts take themselves very seriously, and are engineered to try to address as many of a juvenile's needs as possible. The aim is not just to reform the individual, but to try to understand and address the environmental factors that contributed to the individual's arrival in the juvenile justice system in the first place.

A review and evaluation of the Eleventh Judicial District Juvenile Drug Court in San Juan County, New Mexico, was undertaken in 2006. The stated objectives of this particular drug court are as follows:

1. Reduce recidivism.
2. Enhance self-esteem by developing responsibility and accountability in juvenile offenders.
3. Provide intensive outpatient substance abuse counseling for youth in the community. Counseling to include individual, group and family.
4. Monitor program participants through urinalysis and regular reporting regarding treatment and academic progress.
5. Increase accountability through regular court appearances and the use of sanctions and incentives.

In order to be accepted into the program a juvenile must be free of a record of violent felonies or sex offenses. They must also be charged with something other than a first degree felony in the current case. Finally, the offense for which the individual is charged must be alcohol or other drug related.

The Court attempts to meet its stated objectives using an impressive combination of carrots and sticks. Providing incen-

tives for improvements is a primary part of the strategy. Incentives include praise, ceremonies, movie tickets, and – for those who complete the program successfully – college scholarships! Assessments are performed at the program outset and counseling is provided while the juvenile is in the program. But does it work?

In 2006, Pitts compared outcome data from program participants to data from peers in the system who were eligible for drug court but, for whatever reasons, ended up in the mainstream system.[18] Importantly, program participants and non-participants were quite similar, including the length of time spent incarcerated, about 10 months, and average age, about 16. Recidivism rates were recorded for up to 40 months after program completion. Those individuals who were processed by the juvenile drug court rather than the mainstream court system were *significantly less likely* to return to court.

If this outcome holds true across drug courts, and regions of the U.S., we could be on the way to a far more effective means of dealing with drug offenses and young drug offenders. Drug courts bridge the gaps between the prevention, treatment, and justice communities. In fact, John Walters, Director of the Office of National Drug Control Policy is quoted as saying that,[19]

> "drug courts are perhaps the most significant innovation in criminal justice of the past twenty years."

The promise of juvenile drug courts highlights, yet again, the importance of comprehensive, and incentive based, approaches to dealing with the overlapping problems of teen substance use and delinquency of other types. So, there is real hope for the juvenile justice system with respect to drug abuse and young offenders. As discussed previously, there have also been some advances in the prevention strategies used to help teens avoid trouble with drugs in the first place. It is entirely

possible that the number of juvenile offenders being referred to drug courts could decrease in the coming years, and that those who enter the system will be less likely to return. The savings could then be reinvested in the system and further progress could be made.

Why does all of this matter, anyway?

The topic of drug use, whether during adolescence or adulthood, is a confusing one. Some dangerous drugs are legal or prescribed, while some safer compounds are outlawed and understudied. Public service announcements stoke the coals of fear surrounding illegal drugs, while beer commercials suggest that nothing will improve life more than drinking alcohol.

When trying to dissuade kids from drug use and educate them about the risks, it is quite easy to lose track of why we want to keep kids off of those slippery slopes to begin with. The motivation should be to protect kids and their brains until they are old enough to make these decisions for themselves. The motivation should not be simply to "bust" kids and punish them for breaking the rules. Drug abuse by teens, as with adults, is often a sign that something is missing in the individual's life. It is unlikely that punishment alone will fill those holes, and could just cause problematic behavior to move from substance use to something else.

There are plenty of reasons why we should do what we can to teach kids to value their bodies and their futures, and to avoid alcohol and other drugs at least until they are adults. The most compelling reasons have to do with helping them reach their full potential and find pleasure internally rather than searching for an external substance to make them feel good or cope. Recall our discussion about internal vs. external locus of control from Chapter 1. In the long run, those who seek external means to find pleasure tend to suffer in a variety of ways.

The purpose of adolescence is to create a healthy foundation for adulthood. This involves learning skills, honing cognitive functions and becoming comfortable interacting with the larger social world. Drug use, particularly repeated drug abuse, can hinder all of these objectives. As such, we adults should do our best to dissuade drug use and to nullify the allure it has for kids by creating environments that keep them busy, keep them healthy, and help them build positive momentum. Keeping these objectives in mind can provide adults with a sense of purpose when it comes to trying to prevent kids from using alcohol and other substances. At the same time, we need to be honest about levels of drug use among adults, which are particularly high among aging Baby Boomers, and address it in a way based on evidence rather than ignorance, fear and legalism.

"Which is worse for you, alcohol or marijuana?"

High school students often want to know which drug is worse for a person, alcohol or marijuana. This isn't the kind of question a speaker wants to answer in thirty seconds or less. However, it's obviously something that crosses kids' minds while wrestling with these issues. Clearly, in a perfect world, all kids would forego both. In reality, many do both, often at the same time. For the sake of argument, let's examine this question, briefly, from the perspective of the drugs' effects on the brain and behavior. Only one paragraph will be given to each drug and its effects. Keep in mind there are no perfect comparisons here.

Alcohol is a simple molecule that easily crosses the blood-brain barrier and inserts itself into the membranes of brain cells. What it does then is complicated, but it tends to disrupt the ability of individual brain cells to work. This compromises the ability of the brain circuits these cells form to keep up with what they are supposed to be doing. Some neurological loops in the brain are sped up by alcohol while others are slowed down. Like spilling water on a laptop, the brain short circuits, initially just a

little. At low doses, the parts involved in anxiety are calmed and life seems more tolerable. Some people feel a little energized here. Alcohol produces pleasure by increasing dopamine levels in the brain's reward center. The brain reads this as reinforcement for whatever it is the person is doing, making the activity seem more enjoyable and fun. For some people, the reinforcement combined with reduced anxiety translates into instant confidence. After a few more servings, thinking is really affected. Many adults like this part as it seems to interfere with the brain's ability to worry and ruminate. This also leads to "reduced inhibitions," or reduced concerns about the consequences of one's actions. Another drink or two and alcohol continues numbing the brain from the top down, affecting cognitive abilities like decision-making and impulse control. If the level of alcohol that hits the brain is big enough early on, memory blackouts are common. As we will see in the next chapter, memory blackouts represent spans of time during which people can't record what they are doing, despite the fact that they could be doing just about anything. At high enough doses, alcohol turns the basics like walking and talking into real chores. A few shots passed that and basic life support functions can be shut off, bringing about a premature demise. Some aspects of what alcohol does are molded by the culture, like whether it's cool to keep drinking after you vomit or, perhaps even worse, do karaoke. Other effects depend mostly on gene-driven biology. For 10-20% of the population, trouble quitting will be a reality if they start drinking regularly, and the earlier one starts the closer their particular risk will be to the big number. Further, a growing stack of research suggests that alcohol abuse during the teen years can knock healthy adolescent brain development off track, resulting in lingering cognitive (e.g., reasoning and memory) impairments.

Marijuana is a bit different but problematic in its own ways. Its effects follow a different time course and involve

qualitatively different effects on the brain. Fortunately, marijuana does not share the profound impact alcohol has on vital reflexes, like gagging and breathing. If it did, it would be common to hear reports of people choking on food while trying to satisfy the munchies or dropping dead after that last bong hit; smoke wafting from their smiling dead lips. Marijuana can bring about death via its effects on the cardiovascular system, particularly in the first half hour or so after smoking it. It can also lead to death by causing people to do stupid things that seem really smart at the moment. Like alcohol, heavy use can lead to cancers of various types. Unlike alcohol, marijuana has very selective effects on particular types of receptors in the brain, called cannabinoid receptors. Those receptors are somehow involved in the growth and development of the brain during childhood and adolescence and the continued formation of brain circuits afterward. With regard to one active component of marijuana, THC, the brain makes its own. Release of this substance might play a role in the "runner's high" that many get from exercise (endorphins might play roles, too, but probably for pain relief mostly). Whether inhaled, eaten or sprayed in the mouth, THC crosses the blood-brain barrier and alters how circuits in the brain function. Unlike alcohol, it doesn't produce the widespread numbing of the brain that leads to real problems regulating behavior. Its effects are concentrated in areas involved in thinking, memory formation, abstract reasoning, emotional reactions to environments, the perception of time and space, things like that. While alcohol reduces anxiety marijuana can exacerbate it, intensely in some people, leading to the paranoia often attributed to the drug, and causing entire rooms full of people to collectively gasp if someone knocks on the front door. A wise neuroscientist once told the author, "Marijuana won't kill you, but it can make you feel like you're going to die." The potency of marijuana has gone up considerably over the years. He referred to highly potent strains as "hospital pot," as many inexperienced adolescents ingest more THC than their developing psyches can handle and they struggle

to cope with frightening thoughts and emotions. Indeed, according to the D.A.W.N. network, which tracks mentions of drug use recorded during visits to Emergency Rooms, marijuana-related visits have been on the rise of late, surpassing the number of Emergency Room visits attributed to heroin. In large quantities, marijuana can make doing nothing seem like the most important thing a person could be doing. It doesn't appear to permanently change kids into unmotivated kids, but it can sure unmotivate them for a time. The initial effects of the drug last for a few hours, but alterations in mood and even some cognitive functions, like memory and attention, can linger for a day or more. For this reason, daily use amounts to creating a drug state that persists round the clock. As with alcohol, there appears to be a genetic component to marijuana dependence. A recent study examined the DNA of kids with and without dependency on the drug, and found that there is a particular type of gene associated with dependence as well as another associated with use but no dependence. Around 12% of the sample had the putative dependence-risk-enhancing gene.

Despite differences between the drugs with regard to their specific effects on the brain, the behavioral output produced by them can overlap greatly, meaning that the combination of the two can spell real trouble for some people in some situations. Alcohol and marijuana both produce memory impairments and both make it dangerous to drive, though for slightly different reasons. Alcohol impairs the ability to brake quickly and engage in all but primitive evasive maneuvers. It has the paradoxical effect of impairing the ability to recognize when one is driving poorly and increasing confidence that one can drive well. Marijuana makes it easy for drivers to be distracted and research suggests that young drivers in particular are susceptible to wrecking cars when their attention is divided. Marijuana might make it less likely that a driver recognizes a crash is about to occur and that evasive maneuvers are necessary. The

combination of alcohol, marijuana and driving is entirely unsafe. While many people view both drugs as truth serums of sorts, neither is. Alcohol does not make it more likely that people will express honest emotions and marijuana alone will not unlock the secrets of the universe for you.

If one had to be chosen as the riskiest for developing kids, it might just be a flip of the coin. If the issue were forced, alcohol would likely emerge as the more dangerous due to the fact that it can kill directly and has profound toxic effects on developing brains, though early research suggests that regular use of marijuana during the teen years might alter how the brain develops, too. For adults, both drugs appear to be fine when used wisely, in moderation, by healthy people, and not when important decisions have to be made or when one is responsible for the safety of others. For kids, both drugs can become sinkholes for time, attention, energy and money, and pull them away from the real task of learning to thrive in the world. As such, we should do everything we can to dissuade use of either drug until adulthood.

What does it all mean?

It seems that multiple developmental changes converge during adolescence and increase the odds that substance use will occur then. Teens are built to explore, take some chances, push away from authority, and try out different identities until they find one that fits. At some point during all of this, many teens, but not all, experiment with substances of one type or another – most commonly alcohol. Fortunately, most kids do not get hooked, arrested, or injured as a result of experimentation with drugs, and move on without any serious damage. Others and their families are not so lucky. For them, there are options.

Understanding the intra- and inter-personal factors that contribute to teen drug use can help us create better safety nets for our kids and minimize the odds that drugs will become an

ever present facet of their lives. For those kids who have already crossed over the line from experimentation to regular use, a variety of out-patient and in-patient treatment options are available and can be successful in many cases.

It is critical to keep drug use during adolescence in perspective. We should all be concerned about the easy access that kids have to drugs, including many made by pharmaceutical companies. We should also be concerned about the damage that drug abuse can do to developing adolescents, their families, and the surrounding communities. But drug use is only one of many categories of risk, and focusing disproportionately on the problem of adolescent drug use can distract us from addressing other issues and from promoting activities that actually support healthy development. Drug use can be bad for kids and adults, but simply avoiding drugs does not guarantee health! That requires activities aimed at actually promoting health. In the end, the best strategy for keeping kids off of the slippery slopes of drug use might be to put resources into creating healthier environments for kids in general. It might not be possible to prevent all experimentation with drugs during adolescence, but much can be done to prevent such use from becoming problematic.

Quick Facts:

- For many teens, drug use kills several birds with one stone – exploration, attainment of social reinforcement, and escape from the stress of daily living.
- Most teens that dabble in drugs make it through adolescence unscathed. However, others aren't so lucky.
- Generally, adolescents with serious drug problems do not set out to develop them. The first use of a particular drug places them on a slippery slope. Repeated use of the drug causes them to begin sliding down. Most kids are unaware they're in trouble until it's too late.

- Once drug use has begun and is detected, and if it's a problem, there are a variety of ways in which parents can proceed, including the use of inpatient and/or outpatient treatment programs.
- As is the case with adults, quitting is often the easy part for adolescents. The tough part is staying quit.
- By keeping kids busy and reinforcing healthy decision making, it is possible to help kids build enough positive momentum that they make it out of the adolescent years with using or abusing substances.