Understanding Addiction and the Science Behind the Treatment

At one time, drug addiction was viewed as a failure of willpower or a flaw of moral character. It was not recognized as a disease of the brain, in the same way that mental illnesses previously were not viewed as such. Medical authorities have now accepted drug addiction as a chronic, relapsing condition that alters normal brain function, just as any other neurological or psychiatric illness. Its development and expression are influenced by genetic, biological, psychosocial, and environmental factors. Outwardly, drug addiction is often characterized by impaired control over continued drug use, compulsive use despite harmful consequences, and/or intolerable drug craving.

Scientific research from the 1990s has allowed for a better understanding of addiction and subsequently a host of improved treatments. New technologies such as neuro-imaging and genomics, for example, have allowed scientists to observe the brain in action and examine the interplay of genetic and environmental factors in substance abuse illnesses.

The path to drug addiction begins with the act of taking drugs. Over time, a person's ability to choose not to take drugs can be compromised. Drug seeking becomes compulsive, in large part as a result of the effects of prolonged drug use on brain functioning and, thus, on behavior. Research has shown that addiction is a chronic relapsing brain disease. Brain imaging shows that addiction severely alters brain areas critical to decision-making, learning and memory, and behavior control, which may help to explain the compulsive and destructive behaviors of addiction.

Three decades of scientific research and clinical practice have yielded a wide variety of effective approaches to drug addiction treatment. Extensive data document that drug addiction treatment is as effective as are treatments for most other similarly chronic medical conditions.

In spite of scientific evidence that establishes the effectiveness of drug abuse treatment, many people believe that treatment is ineffective. In part, this is because of unrealistic expectations. Many people equate addiction with simply using drugs and therefore expect that addiction should be cured quickly, and if it is not, treatment is a failure. In reality, because addiction is a chronic disorder, the ultimate goal of long-term abstinence often requires sustained and repeated treatment episodes.

From the most current research, the following are common findings about addiction and the effectiveness of treatment:

**About Addiction**

- Addiction is a brain disease.
- Addiction is NOT a moral failure.
- Drugs and alcohol can “hijack” the brain’s natural pleasure pathways.
- The risk factors for addiction include genetic and environmental factors (stress, availability).
- Drug and alcohol abuse usually begins in adolescence, when the brain is still undergoing dramatic changes in both structure and function.
- The younger one starts misusing drugs or alcohol, the greater the chances they will become addicted.
About Treatment

- Addiction is a treatable illness.
- The sooner an addict gets into treatment the better.
- The longer an addict stays in treatment, the greater the chance treatment will be effective.
- There are medical treatments available to help treat addiction to opioids (prescription painkillers, heroin) and alcoholism.
- Evidence-based behavioral therapies are the best available treatments for treating addiction to stimulants (cocaine, methamphetamine).
- Adolescents with drug or alcohol problems may require a different type of treatment than adults.
- Treatments for addiction are as effective as treatments for diabetes, hypertension, or asthma.
- Temporary abstinence and reduced consumption are beneficial for the patient and the community in which the patient lives. If treatment contributes to these intermediate steps, as well as to the ultimate goal of permanent abstinence, it is working.
- Treatment does not have to be voluntary to be effective, but ultimately the addict must take personal responsibility for their recovery and be motivated to change.
- The addict must make an effort to succeed in treatment.
- Triggers can cause relapse, and relapse is a part of the disease, not (necessarily) a sign of failure.

FREQUENTLY ASKED QUESTIONS

1. What is drug addiction treatment?
There are many addictive drugs, and treatments for specific drugs can differ. Treatment also varies depending on the characteristics of the patient. Problems associated with an individual's drug addiction can vary significantly. People who are addicted to drugs come from all walks of life. Many suffer from mental health, occupational, health, or social problems that make their addictive disorders much more difficult to treat. Even if there are few associated problems, the severity of addiction itself ranges widely among people.

A variety of scientifically based approaches to drug addiction treatment exists. Drug addiction treatment can include behavioral therapy (such as counseling, cognitive therapy, or psychotherapy), medications, or their combination. Behavioral therapies offer people strategies for coping with their drug cravings, teach them ways to avoid drugs and prevent relapse, and help them deal with relapse if it occurs. When a person's drug-related behavior places him or her at higher risk for AIDS or other infectious diseases, behavioral therapies can help to reduce the risk of disease transmission.

2. Why can't drug addicts quit on their own?
Nearly all addicted individuals believe in the beginning that they can stop using drugs on their own, and most try to stop without treatment. However, most of these attempts result in failure to achieve long-term abstinence. Research has shown that long-term drug use results in significant changes in brain function that persist long after the individual stops using drugs. These drug-induced changes in
brain function may have many behavioral consequences, including the compulsion to use drugs despite adverse consequences in the defining characteristic of addiction.

Understanding that addiction has such an important biological component may help explain an individual's difficulty in achieving and maintaining abstinence without treatment. Psychological stress from work or family problems, social cues (such as meeting individuals from one's drug-using past), or the environment (such as encountering streets, objects, or even smells associated with drug use) can interact with biological factors to hinder attainment of sustained abstinence and make relapse more likely. Research studies indicate that even the most severely addicted individuals can participate actively in treatment and that active participation is essential to good outcomes.

3. How effective is drug addiction treatment?
In addition to stopping drug use, the goal of treatment is to return the individual to productive functioning in the family, workplace, and community. Measures of effectiveness typically include levels of criminal behavior, family functioning, employability, and medical condition. Overall, treatment of addiction is as successful as treatment of other chronic diseases, such as diabetes, hypertension, and asthma.

According to several studies, drug treatment reduces drug use by 40 to 60 percent and significantly decreases criminal activity during and after treatment. For example, a study of therapeutic community treatment for drug offenders demonstrated that arrests for violent and nonviolent criminal acts were reduced by 40 percent or more. Methadone treatment has been shown to decrease criminal behavior by as much as 50 percent. Research shows that drug addiction treatment reduces the risk of HIV infection and that interventions to prevent HIV are much less costly than treating HIV-related illnesses. Treatment can improve the prospects for employment, with gains of up to 40 percent after treatment.

4. How long does drug addiction treatment usually last?
Individuals progress through drug addiction treatment at various speeds, so there is no predetermined length of treatment. However, research has shown unequivocally that good outcomes are contingent on adequate lengths of treatment. Generally, for residential or outpatient treatment, participation for less than 90 days is of limited or no effectiveness, and treatments lasting significantly longer often are indicated. For methadone maintenance, 12 months of treatment is the minimum, and some opiate-addicted individuals will continue to benefit from methadone maintenance treatment over a period of years. Many people who enter treatment drop out before receiving all the benefits that treatment can provide. Successful outcomes may require more than one treatment experience. Many addicted individuals have multiple episodes of treatment, often with a cumulative impact.

5. What helps people stay in treatment?
Since successful outcomes often depend upon retaining the person long enough to gain the full benefits of treatment, strategies for keeping an individual in the program are critical. Whether a patient stays in treatment depends on factors associated with both the individual and the program.
Individual factors related to engagement and retention include motivation to change drug-using behavior, degree of support from family and friends, and whether there is pressure to stay in treatment from the criminal justice system, child protection services, employers, or the family. Within the program, successful counselors are able to establish a positive, therapeutic relationship with the patient. The counselor should ensure that a treatment plan is established and followed so that the individual knows what to expect during treatment. Medical, psychiatric, and social services should be available.

Since some individual problems (such as serious mental illness, severe cocaine or crack use, and criminal involvement) increase the likelihood of a patient dropping out, intensive treatment with a range of components may be required to retain patients who have these problems. The provider then should ensure a transition to continuing care or "aftercare" following the patient's completion of formal treatment.

6. Is the use of medications like methadone simply replacing one drug addiction with another?
No. As used in maintenance treatment, methadone and buprenorphine are not heroin substitutes. They are safe and extremely effective medications for opiate addiction that are administered by mouth in regular, fixed doses. Their pharmacological effects are markedly different from those of heroin.

7. What Role Can The Criminal Justice System Play In The Treatment Of Drug Addiction?
Increasingly, research is demonstrating that treatment for drug-addicted offenders during and after incarceration can have a significant beneficial effect upon future drug use, criminal behavior, and social functioning. The case for integrating drug addiction treatment approaches with the criminal justice system is compelling. Combining prison- and community-based treatment for drug-addicted offenders reduces the risk of both recidivism to drug-related criminal behavior and relapse to drug use. For example, a recent study found that prisoners who participated in a therapeutic treatment program in the Delaware State Prison and continued to receive treatment in a work-release program after prison were 70 percent less likely than nonparticipants to return to drug use and incur rearrest.

The most effective models integrate criminal justice and drug treatment systems and services. Treatment and criminal justice personnel work together on plans and implementation of screening, placement, testing, monitoring, and supervision, as well as on the systematic use of sanctions and rewards for drug abusers in the criminal justice system. Treatment for incarcerated drug abusers must include continuing care, monitoring, and supervision after release and during parole.

8. How does drug addiction treatment help reduce the spread of HIV/AIDS and other infectious diseases?
Many drug addicts, such as heroin or cocaine addicts and particularly injection drug users, are at increased risk for HIV/AIDS as well as other infectious diseases like hepatitis, tuberculosis, and sexually transmitted infections. For these individuals and the community at large, drug addiction treatment is disease prevention.

Drug injectors who do not enter treatment are up to six times more likely to become infected with HIV than injectors who enter and remain in treatment. Drug users who enter and continue in treatment reduce activities that can spread disease, such as sharing injection equipment and engaging in unprotected sexual activity. Participation in treatment also presents opportunities for screening,
counseling, and referral for additional services. The best drug abuse treatment programs provide HIV counseling and offer HIV testing to their patients.

9. Where Do 12-Step or Self-Help Programs Fit Into Drug Addiction Treatment?
Self-help groups can complement and extend the effects of professional treatment. The most prominent self-help groups are those affiliated with Alcoholics Anonymous (AA), Narcotics Anonymous (NA), and Cocaine Anonymous (CA), all of which are based on the 12-step model, and Smart Recovery. Most drug addiction treatment programs encourage patients to participate in a self-help group during and after formal treatment.

10. Is Drug Addiction Treatment Worth Its Cost?
Drug addiction treatment is cost-effective in reducing drug use and its associated health and social costs. Treatment is less expensive than alternatives, such as not treating addicts or simply incarcerating addicts. For example, the average cost for 1 full year of methadone maintenance treatment is approximately $4,700 per patient, whereas 1 full year of imprisonment costs approximately $18,400 per person.

According to several conservative estimates, every $1 invested in addiction treatment programs yields a return of between $4 and $7 in reduced drug-related crime, criminal justice costs, and theft alone. When savings related to health care are included, total savings can exceed costs by a ratio of 12 to 1. Major savings to the individual and society also come from significant drops in interpersonal conflicts, improvements in workplace productivity, and reductions in drug-related accidents.

REFERENCE WEBSITES:
American Society of Addiction Medicine:  www.asam.org
Association for Medical Education and Research in Substance Abuse: www.amersa.org
Substance Abuse and Mental Health Services Administration:  www.samhsa.gov
The Science of Addictions and Addictions Treatment:  www.addictionscience.net