

## Message from the Parish Nurses

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August 2019

### THE SCIENCE OF ADDICTION

#### (PART 1)

**Many people don't understand why or how other people become addicted to alcohol, nicotine, illicit drugs, and misuse of prescription drugs. They may mistakenly think that those who have an addiction lack moral principles or willpower and that they could stop using simply by choosing to. In reality, addiction is a complex disease, and quitting usually takes more than good intentions or a strong will.**

**(Hereafter, unless otherwise specified, drugs refer to all of these substances.)**

#### WHAT IS DRUG ADDICTION?

Addiction is defined as a chronic, relapsing disorder characterized by compulsive drug seeking and use despite adverse consequences. It is considered a brain disorder, because it involves functional changes to brain circuits involved in reward, stress, and self-control, and those changes may last a long time after the person has stopped taking drugs. If left untreated addiction can last a lifetime and may lead to death.

#### WHY DO PEOPLE TAKE DRUGS?

In general, people take drugs for a few reasons.

- **To feel good.** Drugs can produce intense feelings of pleasure. This initial euphoria is followed by other effects, which differ with the type of drug used. For example, with stimulants such as cocaine, the high is followed by feeling of power, self-confidence, and increased energy. In contrast, the euphoria caused by opioids such as heroin is followed by feelings of relaxation and satisfaction.
- **To feel better.** Some people who suffer from social anxiety, stress, and depression start using drugs to try to feel less anxious. Stress can play a major role in starting and continuing drug use as well as relapse (return to drug use) in patients recovering from addiction.
- **To do better.** Some people feel pressure to improve their focus in school or at work or their abilities in sports. This can play a role in trying or continuing to use drugs, such as prescription stimulants or cocaine.
- **Curiosity and social pressure.** In this respect, teens are particularly at risk because peer pressure can be very strong. Teens are more likely than adults to act in risky or daring ways to impress their friends and show their independence from parents and social rules.

#### DO PEOPLE FREELY CHOOSE TO KEEP USING DRUGS?

The initial decision to take drugs is typically voluntary. But with continued use, a person's ability to exert self-control can become seriously impaired; this impairment in self-control is the hallmark of addiction.

Brain imaging studies of people with addiction show physical changes in areas of the brain that are critical to judgement, decision-making, learning and memory, and behavior control. These changes explain the compulsive nature of addiction.

#### WHY DO SOME PEOPLE BECOME ADDICTED TO DRUGS, WHILE OTHERS DO NOT?

As with other diseases and disorders, the likelihood of developing an addiction differs from person to person, and no single factor determines whether a person will become addicted to drugs. In general, the more risk factors a person has, the greater the chance that drugs will lead to drug use and addiction. Protective factors, reduce a person's risk. Risk and protective factors may be either environmental or biological.

#### WHAT BIOLOGICAL FACTORS INCREASE THE RISK OF ADDICTION?

The genes that people are born with account for between 40 and 60 percent of a person's risk of addiction. Also, teens and people with mental disorders are at greater risk of drug use and addiction than others.

#### WHAT ENVIRONMENTAL FACTORS INCREASE THE RISK OF ADDICTION?

Environmental factors are those related to the family, school, and neighborhood. For example:

- **Home and family.** The home environment, especially during childhood, is a very important factor. Parents or older family members that use drugs or misuse alcohol, or who break the law, can increase children's risk of future drug problems.
- **Peers and school.** Friends and other peers can have an increasingly strong influence during teen years. Struggling in school or having poor social skills can put a child at further risk.

By Barbara Mueller, RN, Faith Community Nurse

**Source:** National Institute on Drug Abuse; National Institutes of Health; U.S. Dept. of Health and Human Services

**Visit:** [www.StAgnesShepherdstown.org](http://www.StAgnesShepherdstown.org) to read the continuation of "The Science of Addiction (Part 1)".

**Click on:** Parish Health Newsletter

## **WHAT OTHER FACTORS INCREASE THE RISK OF ADDICTION?**

- **Early Use.** Although taking drugs at any age can lead to addiction, research shows that the earlier a person begins to use drugs, the more likely he or she is to develop problems. This may be due to the harmful effects that drugs can have on the developing brain. It may also result from a mix of early social and biological risk factors, including lack of a stable home or family, exposure to physical or sexual abuse, genes, or mental illness. Still, the fact remains that early use is a strong indicator of problems ahead, including addiction.
- **How the drug is taken.** Smoking a drug or injecting it into a vein increases its addiction potential. Both smoked and injected drugs enter the brain within seconds, producing a powerful rush of pleasure. However, this intense high can fade within a few minutes. Scientists believe this starkly felt contrast drives some people to repeated drug taking in an attempt to recapture the fleeting pleasurable state.

## **THE BRAIN CONTINUES TO DEVELOP INTO ADULTHOOD AND UNDERGOES DRAMATIC CHANGES DURING ADOLESCENCE!**

One of the brain areas still maturing during adolescence is the prefrontal cortex – the part of the brain that allows people to assess situations, make sound decisions, and keep emotions and desires under control. The fact that this critical part of a teen’s brain is still a work in progress puts them at increased risk for making poor decisions, such as trying drugs or continuing to take them. Introducing drugs during this period of development may cause brain changes that have profound and long-lasting consequences.

## **PREVENTING DRUG MISUSE AND ADDICTION: THE BEST STRATEGY**

### **WHY IS ADOLESCENCE A CRITICAL TIME FOR PREVENTING DRUG ADDICTION?**

Risk of drug use increases greatly during times of transition. For the adult, a divorce or loss of a job may increase the risk of drug use. For the teenager, risky times include moving, family divorce, or changing schools. When children advance from elementary through middle school, they face new and challenging social, family, and academic situations. Often during this period, children are exposed to substances such as cigarettes and alcohol for the first time. When they enter high school, teens may encounter greater availability of drugs, drug use by older teens, and social activities where drugs are used.

A certain amount of risk-taking is a normal part of adolescent development. The desire to try new things and become more independent is healthy, but it may also increase teens’ tendencies to experiment with drugs. The parts of the brain that control judgement and decision-making do not fully develop until people are in their early or mid-20s; this limits a teen’s ability to accurately assess the risks of drug experimentation and makes young people more vulnerable to peer pressure.

## **CAN RESEARCH-BASED PROGRAMS PREVENT DRUG ADDICTION IN YOUTH?**

**Yes.** The term “research-based” or “evidence-based” means that these programs have been designed based on current scientific evidence, thoroughly tested, and shown to produce positive results. Scientists have developed a broad range of programs that positively alter the balance between risk and protective factors for drug use in families, schools, and communities. Studies have shown that research-based programs, such as in NIDA’s **Principles of Substance Abuse Prevention for Early Childhood: A Research-Based Guide** and **Preventing Drug Use Among Children and Adolescents: A Research-Based Guide for Parents, Educators, and Community Leaders**, can significantly reduce early use of tobacco, alcohol, and other drugs. Also, while many social and cultural factors affect drug use trends, when young people perceive drug use as harmful, they often reduce their level of use.

## **HOW DO RESEARCH-BASED PREVENTION PROGRAMS WORK?**

These prevention programs work to boost protective factors and eliminate or reduce risk factors for drug use. The programs are designed for various ages and can be used in individual or group settings, such as the school and home. There are three types of programs.

- **Universal programs** address risk and protective factors common to all children in a given setting, such as the school or community.
- **Selective programs** are for groups of children and teens who have specific factors that put them at increased risk of drug use.
- **Indicated programs** are designed for youth who have already started using drugs.

By Barbara Mueller RN, Faith Community Nurse  
**Source:** National Institute on Drug Abuse; National Institutes of Health; U.S. Dept. of Health and Human Services

**Note:** The September Parish Health Newsletter will be **“THE SCIENCE OF ADDICTION (PART 2)”**.