Real Peacework eAkademie
- Department "Education / Information for a new society" -

Modern warfare

How to destroy a country, its future and its people without weapons, bombs or military means:

The underestimated role of alcohol, energy drinks and the legalisation of drugs

Part 2 of 3

"Alliance 'Future': spiritual, economical & social recovery of the Ukraine"
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Part I: Alcoholism – Economic Effects, Social Effects … its Effects on Worker and Employees

Part II: Alcoholism – Social Effects and Effects on Adolescents

Part III: Alcoholism – Spiritual health effects of drinking alcohol

Part IV: Rudolf Steiner on Alcohol and Alcohol abuse (Page 335)

Part II:

Alcoholism – Social Effects and Effects on Adolescents

The Social Effects of Alcoholism

Posted on March 28th, 2012

Alcohol is the term we use for ethanol, the substance suitable for humans to drink. Another form of alcohol is methanol and it is toxic to humans. Alcohol is the result of combining food substances like grapes or barley with sugar and yeast and allowing them to ferment. People around the globe consume alcohol in various forms and within various cultural settings. But although alcohol is used the world over, it is also commonly misused or abused. Whenever and wherever it occurs, the abuse of alcohol has deleterious effects on the abuser, those close to him/her and to the wider society.

Alcohol Abuse Hurts the Family

Although most people abuse alcohol because it makes them feel better about themselves, the truth is that over-use of alcohol tends to negatively impact the abuser's personality. Increased irritability, poor judgment and reasoning are just a couple of ways that alcohol damages the human personality and relationships by extension. One study suggested that abuse of alcohol is behind as much as 40 percent of instances of serious domestic violence. Alcoholism is attributable to verbal and physical abuse of the spouse and the children and carries a great responsibility for the break up of marriages. Children living in the home with an alcoholic have lower grades, higher rates of depression and frequently feel socially isolated.

The Common Presence of Psychological Harm Which Accompanies Alcoholism

When alcohol is abused over a period of time, the risk of psychological damage to the drinker increases. Study after study points to the link between alcohol abuse and psychological disorders such as anxiety disorder and depression. People may initially over-drink in order to overcome their low feelings of depression, but in fact, the more they drink, the more depressed they become. Alcohol does not counteract depression, instead it exacerbates the problem. This connection probably explains why 15-70 percent of those who misuse alcohol are also sufferers of depression.

Other people use alcohol as a tool to help them relax and deal with stressful social situations. Maybe they use alcohol in order to feel better in tense family settings or to help them overcome social phobias when they need to attend social functions related to work or dating. As with depression, the number of people who are alcoholic and who live with social phobias is remarkably high. Sadly, people who abuse alcohol, often behave in ways that cause others to withdraw from them society. Pretty soon, only others who abuse alcohol are within the social circle.

Alcohol Abuse Hurts Society at Large

The damaging effects of alcohol abuse are not limited to the person and those living closest to them. Alcohol abuse is linked to many social ills which affect people otherwise unconnected to the drinker. There is a clear connection between alcohol abuse and higher rates of workplace absenteeism. Abuse of alcohol is also linked to higher rates of violent crime in neighborhoods. Because alcohol impairs good judgment, it is often connected to risky sexual activity. Finally, alcohol is involved in a majority of automobile accidents.

Alcohol, or ethanol, may not be as toxic as methanol to the human body, but it is still damaging to everyone intimately or remotely connected to the one who abuses it.

You May Also Be Interested In…

- *Alcoholism in our Aging Population*
- *Older Alcohol Abusers Drink Significantly More than Younger Abusers*
- *Sleep Deprivation during Childhood Linked to Substance Abuse*
- *Well-Educated Women More Likely to Keep Drinking During Pregnancy*
- *Combating Polysubstance Abuse*
- *Recent Studies on Alcoholism*

http://www.promises.com/articles/social-effects-alcoholism/

"The Effect of Religion on Alcohol, Drug Use, & Delinquency

(March 24, 2011)

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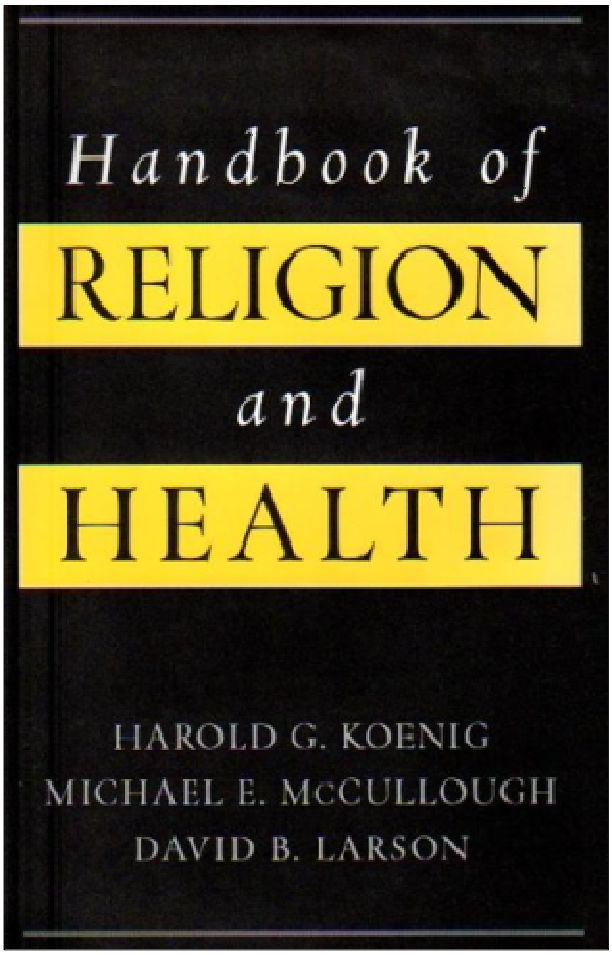
Today and Upcoming Thursday Class Schedule

March 24: Effect of Religion on Alcohol and Drug Use, Delinquency (chapter 11 - 12, HRH) •
March 31: Effect of Religion on Heart Disease & Hypertension (chapters 16-17, HRH) •
April 7: Effect of Religion on Immune System Dysfunction and Cancer (chapter 19-20, HRH) •
April 14: Effect of Religion on Longevity and Disability (Chap. 21-22, HRH)

Outline for today – Alcohol, Drug Use, & Delinquency

I. Introduction
II. Alcohol
III. Drug Use
IV. Delinquency
V. Summary

I. Introduction: •



Today we are looking at Chapters 11 & 12 of Dr. Harold Koenig, Michael McCullough and David Larson's book,

Handbook of Religion and Health (2001) published by Oxford University Press, New York.

II. Effect of Religion on Alcohol Usage

- Alcohol and Drug Addiction exact an enormous cost on individuals and society in terms of physical disease and mental suffering, disturbed social order, and loss of productivity.
- Religious beliefs and practices may play an important role in the prevention of serious alcohol and drug problems and in rehabilitation of abusers.
- However, some forms of religion may also exacerbate or interfere with recovery from substance abuse problems. This should not be ignored.

II. Categorizing Alcohol and Drug Problems

Clinicans use two major systems for classifying alcohol and drug problems:

- *The International Classification of Disease (WHO, ICD-9, 1992)*
- *Diagnostic & Statistical Manual of Mental Disorders (DSM-IV, 1994)*

Recent research provides overwhelming evidence that alcohol and drugs not only interfere acutely with normal brain activity but also have long-term effects on brain metabolism and functioning (National Institute for Drug Abuse, 1998)

These changes in the CNS eventually lead to a compulsive craving for drugs that is so overwhelming as to impair the ability to exercise restraint. There is both a physical and a psychological dependence (Fritzche, 1998). Soon, the addicts resources, time, and energy are solely focused on acquiring, using and recovering from their addictive substances.

II. Clinical and Social Consequences

Abuse of alcohol and drugs ranks among the leading health and social concerns in America today.

Chronic alcohol consumption is associated with an increased risk of both morbidity and mortality:

- *Liver disease*
- *Cancer and Cardiovascular problems*
- *Mental illness – depression & suicide (very high)*
- *Accidental death and disability (DUI) & Homicides*

Among teens – higher risk for early sexual activity, pregnancy, STDs

- *18% of newborns are exposed to alcohol/drug throughout gestation*
- *28 million children are being raised by alcohol/drug addicted parents*

Because the liver is the primary site of alcohol metabolism, death due to cirrhosis has been used as an indicator of alcohol consumption patterns in nations. In US: 29,000 deaths/year

II. Effect of Religion among adolescents

Adlaf & Smart (1985) studied 2,066 Canadian Adolescents and found that Catholic students were less likely than Protestants or nonaffiliated students to have used marijuana, nonmedical or hallucinogenic drugs during the previous year.

Level of religiosity and church attendance variables both had strong negative relationships with drug use though both groups were users: (60& vs 80% for alcohol; 6% vs 39% for marijuana; 2% vs 22% for hallucinogenics; and 10% vs. 20% for medical drug use).

Hadaway et al (1984) explored relationship of religion and drug use among 23,000 high school students in 21 public schools in Atlanta, GA. The study showed a significantly negative relationship in drug usage/attitudes & religiosity. II. Religion and adolescents, cont.

Lorch & Hughes (1985) studied 13,878 Colorado adolescents and found church membership was inversely related to alcohol and drug usage.

Of six variables studied –"church attendance" yielded the highest correlation and "importance of religion" was the second highest.

"The importance of Religion" was the strongest if looking at drug usage alone.

The authors concluded: "This implies the controls here are deeply internalized values and norms rather than that they come from fear associated with church ideology or peer pressure coming from interaction with one's church group."

II. Religion and adolescents …

Amoateng & Bahr (1986), national survey of 17,000 high school seniors examined the impact of many factors: parent's education, mother's employment, number of parents at home, religiosity, religious affiliation, gender, and race.

Found Religious Affiliation was inversely related to drug use:

- *Mormons had the lower use of alcohol and marijuana*
- *Baptists and fundamentalists had lower usage than other Christian Denominations*

Among all religious denominations, the degree of "personal religiosity" had strongest inverse relationship with drug use. I.e., students who were more committed to their religion were the least likely to report either marijuana or drug use.

Interestingly, none of the three family variables had any effect on student alcohol usage (the value of church attendance)

II. "Monitoring the Future Survey"

Amey et al (1996) surveyed a random national sample of 11,728 senior high students around the country.

Religiosity was measured by affiliation, religious importance and religious attendance. The use of various substances: cigarettes, alcohol, marijuana, other drugs including LSD, cocaine, amphetamines, barbiturates, heroin, other narcotics and inhalants.

Religious involvement was inversely related with use of all substances. The odds ratio, Church attendance for cigarettes (29% lower); for alcohol (45% lower); for marijuana (33% lower); for other drugs (21% lower).

II. "Socialization" of College Students …

Hardert and Dowd (1994), examined the relationships between four "socialization" variables and alcohol and marijuana use among high school and college students.

"Socialization Factors" were:

- *Socio-demographic (gender and educational level)*
- *Intrapersonal (personality and attitudes and values)*
- *Interpersonal (peers' values, peers' usage of drugs and parents values)*
- *Contextual (communication with teachers, exposure to violence in school, fear of terrorist or nuclear attack)*

Found College students were six times more likely to use alcohol and marijuana than were high school students

The strongest predictors for college student use were interpersonal – Peer drug use and peer attitudes about drugs.

II. Summary for Adolescent and Young Adults

Research on adolescent and young adult drug use suggests that there is a clear inverse relationship between various measures of religion (attitudes, beliefs, affiliations, behaviors) and alcohol or drug use.

Koenig, et al (p 172, HRH): "Young persons who attend religious services regularly, who report that religious is very important in their lives, and who belong to a denominations that prohibit or discourse drug use are less likely to be involved with drugs than those who are less religious."

Peer association may be one of the mechanisms by which religion exerts its effect on drug use in adolescents. But, other mechanisms may be involved.

II. Religion and Substance Abuse in Adults

As with adolescents and young adults, studies of middle-aged or older adult populations consistently find an inverse relationship between religious involvement and substance use/abuse.

Cahalan and Room (1972) study of 2,746 adults found that more abstainers than infrequent, moderate, or heavy drinkers participated in church activities.

A later study by same authors found two religious variables were significant: conservative Protestant affiliation and attendance at religious services. In Protestant denominations that favored abstinence, there were a high percentage of abstainers, but those who did drink, drank heavily. There were many heavy drinkers among Catholics and liberal Protestants. Among Jewish, most drank a little, but few drank heavily.

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Khavari and Harmon (1982) examined data from 4,853 persons surveyed. They reported a "powerful relationship" between degree of religious believe and the consumption of both alcohol and psychotropic drugs – marijuana, hashish, amphetamines and tobacco. All were significantly higher in the non-religious group.

The authors concluded that "drug treatment personnel may do well to closely scrutinize the possibility of enlisting the addict's religion as an aid to the overall treatment strategy."

Koenig, et al (1994) examined 2,969 people aged 18-97 in N.C. checking many religious variables (bible reading, prayer, church attendance, religious denomination, "born-again") and found alcohol disorders were significantly less common among those who were weekly church goers and those "born-again."

Interestingly, in Koenig's study, alcohol disorders were more common among those who frequently watched/listened to religious television or radio programs.

And, lifelong Alcohol disorders were more prevalent among members of Pentecostals than others Christian denominations (perhaps due to aggressive proselytizing by this group of the lower socio-economic class)

To summarize: research suggests that adult alcohol and drug use may be influenced by religion.

- *Greater: the importance of religion, the frequency of church attendance, and private religious practices (prayer and Bible reading) all predict less alcohol and drug use/abuse among adults.*
- *And, membership in a denominational group that discourages alcohol and drug use is also a predictor of less substance use and abuse.*

II. Possible Explanations

What is it about religious involvement that influences alcohol and drug abuse?

- *For adolescents and young adults, peer influence is important (indirect)*
- *Studies indicate there may be a direct effect on alcohol and drug use:*

Instilling Moral Values – religion may directly influence substance use by serving as a moral compass.

Burkett (1980) surveyed 323 high school students to correlate attitudes about drinking with religiosity measures including the belief drinking was a "sin."

In the study, Protestants who were highly religious tended to believe drinking was a sin and were significantly more likely to abstain from drinking alcohol.

II. The Moral Compass

To test the hypothesis that religion can directly influence alcohol consumption via strong moral message, Bock, et al (1987) examined 4,278 American Adults.

Analysis indicated that the moral message of respondents increased proportionally according to religious commitment and being affiliated with a denomination that prohibited/discouraged alcohol use.

In addition to indirectly influencing alcohol and drug us by influencing peer interactions, religion may play a direct role in discouraging alcohol use by supporting a moral code of conduct which excludes the use of alcohol and drugs.

And, the more one is exposed to a religion which teaches this, the more likely one is to not partake of alcohol and drugs.

II. Religion and Psychological Well-Being

Another way that religion might reduce the risk of alcohol and drug use is by increasing psychological well-being.

Existing literature suggests that religion reduces the need for alcohol and other drugs by making people less susceptible to stress, by increasing their coping skills, and/or both.

Krause (1991) examined 1,607 elderly people, 60 and older, to understand the relationship between coping resources and alcohol use and religion.

He found as health problems grew, religious intensity grew also, suggesting that religion was effective coping with health problems. Increased religiosity was correlated with greater likelihood the individual would abstain from alcohol.

II. Spiritual Intervention for Alcohol, Drug abuse

If religious involvement is protective against initial alcohol or drug use, might it also be used as a method of treating those whose lifes are devastated by addiction?

Research has shown that religious involvement has been low among people in treatment for substance abuse. Might fostering religious or spiritual beliefs in substance abusers provide a mechanism for bolstering therapy outcomes?

Thoresen (1997) argues that religious or spiritual interventions can help people find meaning, direction, and purpose in life.

And Harvard psychiatrist George Vaillant (1983) wrote:

"in the treatment of addiction, Karl Marx's aphorism "Religion is the opiate of the masses" masks an enormously important therapeutic principle. Religion may actually provide the relief that drug (and alcohol) abuse only promises."

"First, alcoholics and victims of other seemingly incurable habits feel defeated, bad, and helpless. They invariably suffer from impaired morale. If they are able to recover, powerful new sources of self-esteem and hope must be discovered. Religion is one such source. Religion provides fresh impetus for both hope and enhanced self-care."

"Second, if the alcoholic is to become abstinent, enormous personality changes must take place. We associate such dramatic change with the experience of religious conversion."

"Third, religion, in ways that we appreciate but do not understand, provides forgiveness of sins and relief from guilt. Unlike many intractable habits that others find merely annoying, alcoholism inflicts enormous pain and injury on those around the alcoholic."

"As a result, the alcoholic, already demoralized by his inability to stop drinking, experiences almost insurmountable guilt from the torture he has inflicted on others. In such an instance, absolution becomes an important part of the healing process." Koenig (p, 177f) presents an overview of research that examines the effectiveness of three types of religious/spiritual interventions: (1) church-based interventions; (2) 12-step programs and (3) meditation.

II. Churches and Substance Abuse Rehabilitation:

Most early church-based substance abuse programs were run by Protestant churches. Since the 1960s, however, the Catholic Church has become increasingly involved in rehabilitation services for substance abusers.

Today, many of the church-based programs are confined to sponsoring Alcoholic Anonymous and Narcotics Anonymous meetings and services.

Teen Challenge bases its treatment on conservative Christian doctrine. Hess (1977) found the success rate varied with precious religious experience; 75% who were not initially church regulars successfully graduated from the program while only 20% graduated who previously attended church. The latter may have had a bad church experience, making it more difficult for them to use religion in their recovery.

II. Twelve-Step Fellowships:

12-Step fellowships seek to help people with alcohol or drug abuse, and recently other addictions (gambling, overeating, and sexual addiction)

The original 12-step program is explicitly based on spiritual principals. These principles include dependence on a self- defined Higher Power, self-examination, prayer and meditation, and assistance from others (fellowship & sponsor)

Steps 10 – 12 are the most important for spiritual growth and maintenance of sobriety. They are:

II. Steps 10, 11, and 12:

Step 10 – Continued to take personal inventory and when we were wrong promptly admitted it.

Step 11 – Sought through prayer and meditation to improve our conscious contact with God as we understood Him, praying only for knowledge of His will for us and the power to carry that out.

Step 12 – Having had a spiritual awakening, as the result of these steps, we tried to carry this message to alcoholics and to practice these principles in all our affairs.

II. Are the 12-Steps successful?

12 Step programs are considered to be one of the most successful methods for ending substance abuse and preventing relaps (Emrick et al, 1993)

Studies have concluded that active AA membership enables 60-68% of alcoholics to drink less (or not at all) for up to a year, and 40-50% achieve sobriety for many years (Emrick)

Not all experts are so optimistic about AA. Peele (1990) concluded that AA programs have not demonstrated their efficacy. Alford et al (1991) found that the positive effects of involvement in AA, while often short-lived in men, persisted for at least two or more years with women. He found no difference between male completers (at 1 year) and non- completers.

II. 12-Steps' success

Some AA practices are more important in recovery than others. Montgomery et al (1995) found that, while post-treatment frequency of AA attendance was not predictive of drinking outcomes, the extent to which patients became involved in AA did predict longer sobriety.

Carroll (1993) tested "purpose of life" among AA members and showed that those who practiced steps 11 and 12 had a sense of "increased purpose of life." The number of AA meetings attended correlated with longer sobriety and fewer relapses.

Carroll concluded that practicing Step 11 (seeking through prayer and meditation to improve conscious contact with God and for the power to carry it out) was especially important for recovery and maintaining sobriety.

II. Meditation

Meditation-based interventions have been reported in a number of studies to reduce alcohol and drug abuse. (Alexander, et al 1994; Taub, et al, 1994)

Gelderloos et al (1991) reviewed 24 studies of the benefits of Transcendental Meditation (TM) in treating and preventing substance abuse and dependence. All studies showed positive effects for the TM program.

The authors concluded TM simultaneously addressed several factors that underlay chemical dependency, providing not only immediate relief from physical distress, but also long range improvements in well-being, self-esteem, personal empowerment, and in general, psycho-physiological health.

II. Religion and Exacerbation of Substance Use

By inducing guilt and suppressing aggressive or sexual drive, religion may in some cases lead to or worsen problems with substance abuse.

Walters (1957) at a VA hospital report that a larger proportion of those alcoholics had parents who were both members of the same church denomination than did a control group.

Mothers of Alcoholics were also more involved in religious activities than were mothers of control group (66% to 55%).

Zucker (1987) conducted a study of 61 male alcoholics and found that religious patients who had anti-alcoholic attitudes on admission had the least room for change in attitudes. The least religious patients found attitude adjustment easier.

Other than 3 studies that showed negative findings for religion and substance abuse, nearly 150 studies on the relationship between religious involvement and substance abuse suggest less substance abuse and more successful rehabilitation among the more religious.

II. Summary: Effect of Religion on Alcohol/Drug Abuse

Over 100 studies suggest religion may be a deterrent to alcohol and drug abuse in children, adolescents and adults.

The greater a person's religious involvement the less likely he or she will initiate alcohol or drug use. Religious participation may reduce usage by:

- *Providing friends that do not abuse substances*
- *Instilling moral values*
- *Increasing coping skills*
- *Reduces likelihood of turning to alcohol/drugs during times of stress*

12-step fellowships and private spiritual practices can have a significant impact on the rehabilitation of persons with substance abuse problems.

III. Delinquency

Definition: Delinquency is problem behavior that is against the basic principles of society, is harmful to society, or is in violation of the law.

Onset is usually at early ages, around 9 or 10, particularly in boys and may be marked by the onset of stubborn behavior or minor covert acts such as frequent lying or shoplifting.

These behaviors are followed around 11-12 by acts of defiance, minor aggression and property damage.

Over time, more serious forms of delinquency may ensue, such as violent behavior (fighting or assault) and chronic resistance to authority figures, truancy, staying out late at night, and running away from home.

III. Consequences of Delinquency

In 1992, estimated that 1 million Juveniles in the US were charged with 1.5 million delinquent acts, a 26 % increase over the number of cases report just five years previously.

Aggravated assault rates doubled, as did murder rates.

Males drove the 1987-1994 spike in the murder arrest rate, and the increases were seen in acts committed with firearms. Females did not experience the sharp rise and fall that occurred with males during the '90s. Instead, arrest rates among female offenders have continued to slowly climb year after year.

Since 1994 most arrest rates have been in steady decline. Murder arrest rates, for example, were 74% lower in 2000 than they were in 1993. Drug abuse arrest rates, however, rose steadily through the '90s and have not dropped significantly.

III. The Effect of Religion and Delinquency

Religion has long been considered a deterrent to crime because it promotes social control and encourages the development of moral character and the acceptance of societal norms and values (Davis, 1948, Erikson, 1966, Fitzpatrick, 1967).

Hirschi and Stark (1969, disputed this notion and reported that church attendance and belief in supernatural sanctions were virtually unrelated to self-reported delinquency studies.

Stark et al (1982) found that delinquency was consistently lower in religious communities than secular communities and concluded that religion lowers one's risk of delinquency only if it is reinforced by prevailing social norms –i.e., one's surrounding community. This is known as Social Control Theory.

III. Church Attendance and Delinquency.

Higgins & Albrechht (1977) analyzed data from 1,400 high school students. Two items were evaluated about religion – church attendance and church affiliation.

When analyzed, they found modest to moderately strong negative relationship between frequency of church attendance and 17 delinquent behaviors studied.

In a later report, Ellis (1985) reviewed the literature on the subject and found 31 relevant studies – all but five studies (84%) reported a significant inverse relationship between church attendance and crime. Even in the five mentioned, the relationship was negative, though not as convincing.

III. "Importance of Religion" and Delinquency

Middleton & Putney (1962) found that in adolescents religious salience, religion ideology (belief in God), and religious attendance, were all negatively related to victimless crimes (gambling, smoking, petting, and drinking alcohol).

Benson & Donahue (1989) found that the number of nights high school seniors reported they "went out for fun and recreation" was the single strongest positive predictor of delinquent behaviors.

Conversely, religiousness and plans to graduate from college were the two most powerful negative predictors of delinquent behaviors -- cigarette use, binge drinking, and marijuana use.

III. Religion and Long-term Criminality

Evans et al (1995) – studied the relationship between religion and adult criminality.

They found surprisingly, that three of the four measures of religiousness

- *general religiousness, religious beliefs of punishment, and religious influence (salience)*
- *were unrelated to adult criminality.*

However, religious activities (attending religious services, reading religious material and listening to religious TV and radio) were related to less adult criminality.

Interestingly, members of conservative religious denominations did not commit crimes less frequently than did members of liberal denominations. However, socio-economic factors differ.

III. Religious/Spiritually-based programs & Criminality.

Despite the historical importance of religious groups as unique and powerful social institutions within communities, the influence of these institutions in preventing or controlling juvenile delinquency has drawn limited attention from social scientists and criminologists.

One of few exceptions is Richard Freeman (1986) who concluded that participation in the African American church helps inner-city African American male youth escape the world of poverty, drug use, and crime.

Freeman analyzed data from 2,358 African-American youth in Boston, Chicago and Philadelphia, and found that church attendance had a significant negative effect on deviant activities among at-risk youth, including alcohol and drug use.

III. Religious/Spiritually-based programs.

Johnson, Larson et al (1997) studied prison inmates in four NY state prisons for two years to determine whether participation in Prison Fellowship (PF) had any effect on the inmates adjustment in prison. They also examined inmates recidivisim rates and post-release arrests.

201 inmates in the PF program were matched with an equal number not in the program. Results indicated that both groups were similar on their initial adjustment to prison and in the follow-up period while in prison.

However, the level of PF participation in Bible study groups did predict recidivism rates. PF inmates in the high participation category were significantly less likely than non-PF inmates to be arrested during the followup period (14% vs 41%).

IV. Summary, Religion and Delinquency

- *The causes of delinquency are multifaceted. Individual, familial, community, and societal factors interact to produce behavior.*
- *There is growing evidence that affiliation with religion may help protect against delinquent behavior and attitudes among youth.*
- *Further evidence suggests that such effects persist even if there is not a strong prevailing social control against delinquent behavior in the surrounding community.*
- *Religious involvement may help adolescents learn social behavior skills and concern for others' welfare.*

The Effects of Substance Abuse on Adolescent Development

Last Updated: Aug 16, 2013 | By Christy Bowles

Substance abuse can have a variety of adverse effects on an adolescent's development. Photo Credit drugs image by alimat from http://www.fotolia.com

According to the United States Office of Juvenile Justice and Delinquency Programs, adolescents who abuse substances are at risk for a wide variety of issues that may interfere with their development. The physical, social and psychological effects of adolescent substance abuse can have lasting consequences on the individual, and may interfere with a successful transition from adolescence to adulthood.

Significance

According to the Partnership for a Drug-Free America, adolescence is a developmental period in which the human brain is still developing, and substance abuse has the potential to inhibit healthy neurological development. Ongoing substance use or abuse can place an individual at greater risk for addiction in adulthood. The teen years are also a period of significant social, emotional and academic development, and ongoing substance abuse has the potential to disrupt or even prohibit healthy and effective skill development.

Physical Consequences

The United States Office of Juvenile Justice and Delinquency Programs reports that substance abuse during the teen years has a number of negative effects on the individual's physical development. Drug-related accidents and overdoses often result in physical injuries and illnesses, and teens abusing substances have a higher risk of practicing unsafe sex, which may expose them to HIV and other sexually transmitted infections.

Psychological Consequences

Substances such as alcohol and psychoactive drugs can have lasting effects on the psychological development of an adolescent. The United States Office of Juvenile Justice and Delinquency Programs reports that teens who abuse these substances are at higher risk for mood disturbances and mental health disorders, such as conduct disorders. Depression and anxiety resulting from prolonged substance abuse can disrupt an adolescent's ability to function and develop in a constructive manner.

Social Consequences

Adolescents with substance abuse problems are more likely to experience issues with social development. The American Academy of Child and Adolescent Psychiatry notes teens who abuse substances are more likely to withdraw from peers and family, and are more likely to have problems with the law. In addition, these teens may experience difficulties in school due to an inability to study or participate, and this often inhibits the successful development of academic and employment skills.

Prevention/Solution

The American Academy of Child and Adolescent Psychiatry suggests that parents and other adults can help prevent teen substance abuse by having open communication about the potential consequences. Adults should also role model healthy behaviors, and take action if they see signs of a problem. Teens who have sudden changes in mood, are often fatigued and have decreased interest in school or daily activities may be

showing signs of substance use. Parents should be aware of all the symptoms of substance abuse and should consult with a medical provider if they have concerns about their child.

http://www.livestrong.com/article/254084-the-effects-of-substance-abuse-on-adolescent-development/

The Effects of Alcohol Abuse on Teens

Posted on Sunday, December 13th, 2009 at 4:20 pm.
Written by Casa Palmera Staff

Alcohol abuse among teens is a very common problem. In fact, almost 80 percent of high school students report drinking alcohol and over 40 percent of students report trying alcohol by the eighth grade. Despite how common it is, teen alcohol abuse is not something that should be brushed aside as a fact of growing up. The effects of alcohol abuse on teens can lead to serious consequences now and later in life, including health problems, social problems, permanent damage and problems with alcoholism well into adulthood.

Signs of Teen Alcohol Abuse

In addition to the usual signs of intoxication, teens who abuse alcohol will exhibit some of the following signs:

- *Lying or making excuses*
- *Breaking curfew*
- *Hiding in their room*
- *Becoming verbally or physically abusive toward others*
- *Mood swings*
- *Stealing*
- *Poor hygiene*
- *Frequently feeling ill*
- *Changes in sleeping patterns*
- *Changes in friends*

Effects of Alcohol Abuse on Teens

Teenagers who abuse alcohol increase their risk of negative health effects because their organs, brain and mental capabilities are still growing. Some of the most notable negative effects of alcohol abuse on teens are:

- *Emotional problems. Alcohol abuse can cause or mask emotional problems such as anxiety or depression. It can also increase the severity of these emotional problems. Studies show that eighth-grade girls who drink heavily are three times more likely to attempt suicide than girls in their grade who don't drink, and teenage girls aged 12-16 who drink are four times more likely than their non-drinking peers to suffer from depression.*
- *Behavioral problems. Teen drinkers have an increased risk of social problems, depression, suicidal thoughts and violence. According to the Substance Abuse and Mental Health Services Administration, 39 percent of teenage drinkers exhibit serious behavioral problems and 31 percent suffer extreme levels of psychological distress. Regular alcohol consumption is also associated with higher levels of attention-deficit disorder, hyperactivity and aggressiveness.*
- *Addiction and dependence. Studies prove that the younger a person is when they start drinking the more likely they are to develop a problem with alcohol. In fact, people who reported drinking before the age of 15 are four times more likely to become dependent on alcohol than those who started drinking later in life.*
- *Risky sex. Teens that drink are more likely to have unprotected sex, have sex with a stranger, or engage in various forms of sexual activity. This leads to higher risks of STDs, teen pregnancy and sexual assault.*
- *Learning problems. Teens that binge drink perform worse in school, are more likely to fall behind, and have higher drop-out rates. Research shows that teen drinkers score worse than their non-drinking peers on vocabulary, visual-spatial and memory tests.*
- *Brain damage. Heavy drinking among teens over many years can result in serious mental disorders or permanent, irreversible damage to the brain or nervous system. According to the American Medical Association, scientific evidence suggests that even modest alcohol consumption in adolescence can result in permanent brain damage.*
- *Car accidents. Alcohol-related traffic accidents are a major cause of death among teens. A recent study showed that 28 percent of 15- to 20-year-old drivers who were killed in car crashes had been drinking.*
- *Gateway drug. Alcohol is often a gateway drug to other illicit substances. Teens that drink are more likely than non-drinking teens to use other drugs like marijuana, cocaine, Ecstasy or heroin.*

Teen Alcohol Rehab

If you know a teen who is abusing alcohol, don't wait to intervene. The sooner your teen gets help for alcohol abuse, the more likely they'll be to avoid the long-lasting effects of their alcohol abuse. Fortunately, there are many different teen alcohol rehabs to choose from. The most effective teen alcohol rehab, however, may be a residential treatment program. Here your teen will have access to 24/7 supervision and care, detoxification, dual diagnosis treatment and a variety of holistic treatments based on their individual needs. Talk to a medical doctor about your teen's symptoms and determine which type of alcohol abuse treatment is best for your teen.

Related Posts:

- *Top 5 Reasons Teens Use Drugs*
- *Are you an Alcoholic?*
- *Teen Depression: Warning Signs, Effects and How to Help*
- *Social Drinking and Alcohol Abuse: Defining the Fine Line*
- *Why Alcohol Affects Women Differently Than Men*

http://casapalmera.com/the-effects-of-alcohol-abuse-on-teens/

STUDYING SPIRITUALITY AND ALCOHOL

Release Date: February 7, 2000 (RFA: AA-00-002)

National Institute on Alcohol Abuse and Alcoholism – The Fetzer Institute

Letter of Intent Receipt Date: April 24, 2000
Application Receipt Date: May 24, 2000

THIS REQUEST FOR APPLICATIONS (RFA) USES THE "MODULAR GRANT" AND "JUST-IN-TIME" CONCEPTS. IT INCLUDES DETAILED MODIFICATIONS TO STANDARD APPLICATION INSTRUCTIONS THAT MUST BE USED WHEN PREPARING APPLICATIONS IN RESPONSE TO THIS RFA.

PURPOSE

The Fetzer Institute (http://www.fetzer.org) in Kalamazoo, Michigan is a non-profit foundation that supports scientific research and education exploring the relationship of the physical, mental, emotional, social, and spiritual dimensions of life. It joins with the National Institute on Alcohol Abuse and Alcoholism (www.niaaa.nih.gov) in co-sponsoring this RFA. This RFA is intended to support research to better understand the role of religiousness and spirituality in the prevention and treatment of and recovery from alcoholism and alcohol-related diseases.

There is a growing interest in the impact of religious and spiritual commitment and activities on health outcomes. Medical scientists, in general, have understudied the role and relationship of religion and spirituality in health and this has also been the case for alcoholism research. Yet, the history of alcohol use and alcoholism is intertwined with spirituality and religion. Many religious traditions express strong beliefs about alcohol use and some encourage specific practices with regard to the consumption of alcohol. Some treatment programs insist that spirituality be at the core of any enduring recovery from alcohol addiction. Further work is needed to better understand the role of religiousness and spirituality as protective and/or risk factors in the development of alcohol disorders. Studies are needed on the role and efficacy of spirituality in intervention programs, and on the effects of race, gender and ethnicity on the relationship between spirituality and alcohol abuse and alcoholism.

This RFA builds upon the presentations and discussions held in a conference entitled Studying Spirituality and Alcohol, held February 1-2, 1999, and co-sponsored by the National Institute on Alcohol Abuse and Alcoholism (NIAAA) of the National Institutes of Health and the Fetzer Institute. The meeting brought together experts from a variety of disciplines, including alcohol researchers, neuroscientists, treatment professionals, religion researchers, and general health experts to examine spirituality and alcoholism from a multi-disciplinary perspective. The conference reviewed conceptual issues, the current state of knowledge, the best available methodologies, and promising avenues for future research. Copies of the conference summary are available and may be obtained by sending a request to Madhu Gola, Office of Collaborative Research Activities, National Institute on Alcohol Abuse and Alcoholism at mgola@willco.niaaa.nih.gov or (301) 443-7043 (fax).

This RFA follows the conference and is designed to stimulate research on the influence of spirituality on the prevention of alcohol abuse, the development and treatment of alcohol dependence and alcoholism, and on the maintenance of long-term recovery from alcohol dependence. Applications will be submitted to the NIH and will be reviewed according to normal NIH peer review procedures. Applications judged meritorious, but not funded by the NIAAA, will be eligible for funding by the Fetzer Institute. Applicants eligible for funding consideration by the Fetzer Institute will be notified following completion of the NIH peer review process. At that time it will be the applicant's responsibility (following the application guidelines of the Fetzer Institute) to submit the application, along with the NIH prepared summary statement, to the Fetzer Institute to be eligible for Fetzer Institute funding.

HEALTHY PEOPLE 2000

The Public Health Service (PHS) is committed to achieving the health promotion and disease prevention objectives of "Healthy People 2000," a PHS-led national activity for setting priority areas. This Request for Applications (RFA), Studying Spirituality and Alcohol, is related to the priority areas of alcohol abuse and alcoholism. Potential applicants may obtain a copy of "Healthy People 2000" at http://odphp.osophs.dhhs.gov/pubs/hp2000.

ELIGIBILITY REQUIREMENTS

Applications may be submitted by domestic and foreign, for-profit and non-profit organizations, public and private, such as universities, colleges, hospitals, laboratories, units of State and local governments, and eligible agencies of the Federal Government. Racial/ethnic minority individuals, women, and persons with disabilities are encouraged to apply as Principal Investigators.

MECHANISM OF SUPPORT

This RFA will use the National Institutes of Health (NIH) Exploratory/Developmental Research Grant (R21) award mechanism. Normally Exploratory/Developmental Research Grants supported under this RFA will be for $50,000 or $75,000 per year (direct costs) for up to two years, but maybe for up to $100,000, if well-justified. Responsibility for the planning, direction, and execution of the proposed project will be solely that of the applicant. The total project period for an Exploratory/Development Research Grant application submitted in response to this RFA may not exceed two years, although requests for no-cost extensions may be considered. R21 awards are not renewable, however, it is the expectation that successful exploratory/developmental projects supported through this RFA will lead to the subsequent submission of regular research project grant (R01) applications.

Applications for competitive supplements to existing R01 research grants for $100,000 (direct costs) or less a year for up to two years will also be accepted. In planning to submit an application for a supplement to an existing grant, the investigator should assure that the grant meets the requirements to be supplemented. Competing supplements cannot exceed the parent grant project period. The program administrator should be consulted before submission of a competing supplement application.

This RFA is a one-time solicitation. The anticipated award date is September 29, 2000.

FUNDS AVAILABLE

The National Institute on Alcohol Abuse and Alcoholism and the Fetzer Institute intend to commit up to $1 million in FY 2000 to fund 7 to 10 new grants in response to this RFA. An applicant may request a project period of up to two years and a budget for direct costs of up to $100,000 per year for an R21 or a competitive supplement to an existing grant. Because the nature and scope of the research proposed may vary, it is anticipated that the size of each award will also vary. Although the financial plans of the Institute provide support for this program, awards pursuant to this RFA are contingent upon the availability of funds and the receipt of a sufficient number of applications of outstanding scientific and technical merit.

BACKGROUND

Alcoholism and alcohol-related problems have an enormous impact on our society. Most adults can drink alcohol moderately and responsibly without complications. However, nearly 14 million Americans meet the medical criteria for a diagnosis of alcohol abuse or alcoholism. In addition, it is estimated that about 40 percent of Americans have direct family experience with this issue. Although a dollar figure cannot adequately reflect the social and human devastation caused by these illnesses, it is estimated that the economic and health care costs to society from alcoholism and alcohol abuse are nearly $167 billion annually. Much of this cost is related to lost productivity, motor vehicle crashes, alcohol-related medical expenses and crime. Cirrhosis is the tenth leading cause of death in the United States and a significant portion of this incidence is related to alcohol dependence. Only a fraction of the total cost, around $10.5 billion, is attributable to treating alcohol dependence and its medical consequences.

Alcoholism is a disease associated with alcohol seeking and the increasing dominance of alcohol in a person"s life, a dominance that essentially displaces other concerns and responsibilities. Why some people who drink get into trouble from alcohol use, while many others do not has been a central question in alcohol research. It is clear that there are genetic influences on an individual"s risk for alcoholism, but environmental influences are also key factors. Religiousness and spirituality are a part of the internal and external environment which should be considered when dealing with individuals facing the risk of alcoholism and in dealing with and treating people with alcohol problems.

Religiousness and spirituality form interlocking pieces of a multidimensional construct. Looking at various aspects some features have emerged. Spirituality may be found within or outside of specific religious traditions. It can be related to attitudes about life"s meaning and purpose, fundamental connections among people, or the value people give to themselves and others. These can be crucial for coping with difficulties and motivating behavior.

Studies have typically found less alcohol abuse among people claiming to be very religious than among less religious people. Recovery from alcoholism is often associated with corresponding increases in spiritual measures, although the causal direction is not clear. It is also unclear to what extent some aspects of

religion/ spirituality may be risk factors for alcoholism and alcohol-related diseases. As a foundation for the development of rigorous research on these issues, the Fetzer Institute supported the development of an annotated bibliography on spirituality and substance use. The bibliography was developed by Drs. William Miller and Melanie Bennett of the University of New Mexico and is available on the website:

http://casaa-0031.unm.edu/bib/fetzer.html.

It is the result of a series of literature searches that cross spirituality terms with alcohol terms with the citations entered into a structured database.

There are different therapies for alcoholism that may have a spiritual base. Alcoholics Anonymous (AA) is a orldwide organization that advocates a spiritual approach to recovery. AA is a major social movement that has grown in size and significance in shaping public opinion, yet the mechanisms by which members are helped and the nature and degree of that help remain inadequately understood. AA and groups that use this approach can provide solid ground for exploring the relationship between spirituality and treatment. Studies are needed to elucidate the spiritual aspects of AA affiliation, the relationship of spirituality and possible differences in attendance and involvement in AA, and the role of spirituality in mechanisms of change.

In addition, there is a need for further study of other programs based on religious and spirituality precepts. A recent multi-site trial found that a 12-step facilitation treatment was at least as effective, and on some outcome measures more effective, than two other treatment approaches, previously well supported by outcome research (Project MATCH Research Group, l997). However, little is understood about 12-step programs from a cross-cultural perspective, and the efficacy of culturally developed programs addressing the spiritual needs and alcohol problems of specific cultural groups, (e.g., American Indians) have been inadequately studied.

It is customary to assess drinking behavior together with a broad range of dimensions of functioning to understand the process of recovery. Physical health, psychological adjustment, legal status, employment, emotional stability, and cognitive functioning are typically studied. However, greater attention to spirituality may also lead to a better understanding of the process, prevention, and treatment of alcoholism.

Reliable findings will emerge from studies that utilize strong measures, define constructs carefully, and propose clear hypotheses which are tested using rigorous methodology.

KEY CONCEPTS, MEASURES, AND METHODS

While some may regard religiousness and spirituality as indistinguishable, others see the terms as distinct but intertwined. Generally, religiousness has specific behavioral, social, doctrinal, and denominational characteristics because it involves a system of worship and doctrine that is shared within a group. Spirituality can be characterized as concerning the transcendent (that which is addressing ultimate questions about life"s meaning with the assumption that there is more to life than what we see or fully understand). Spirituality can call one beyond oneself to concern and compassion for others. There is no need to polarize the two constructs. Religions aim to foster and nourish the spiritual life, and spirituality is often a salient aspect of religious participation, but it is possible to adopt the outward forms of religious worship and doctrine without having a strong relationship to the transcendent. Researchers should be clear in the operationalization of these multidimensional constructs within their specific research programs so it is clear what is being measured.

Religiousness and spirituality, like personality and health, are complex, multi-dimensional constructs. In an earlier effort, the National Institute on Aging (NIA) and the Fetzer Institute developed a working document that identified different domains of religiousness and spirituality that may be relevant for studies involving health and health outcomes (see reference below). Domains identified by NIA and Fetzer working group include: meaning, values, beliefs, forgiveness, private religious practices, coping, history, commitment, organizational religiousness, and daily spiritual experience. The working group also concluded that domains to be used in studies for specific populations or disease processes need further refinement. A multi-dimensional approach to the characterization of religiousness and spirituality is a reasonable starting point for conducting research on alcohol and religiousness/spirituality. The multi-dimensional approach can help by focusing on specific aspects or a combination of aspects of religiousness and spirituality that are most relevant to the topic studied.

In addition to the NIA/Fetzer supported report on measurement issues, there are a large number of measures of spirituality and religiousness in use in various research. Dr. Peter Hill, a presenter at the conference, and Ralph Hood recently published a book examining many of these measures (see reference below). There is room too, for further development of dimensions of the construct that might have particular relevance for populations suffering from alcohol use disorders.

RESEARCH ISSUES

The following areas illustrate suitable topics for research. While applicants are not limited to these themes, they are advised to consult with program staff on the relevance of their proposed subject to the RFA.

Prevention/Intervention Issues

Studies to determine the role of religiousness/spirituality as a protective factor and/or vulnerability influence for alcoholism. Research to explore the aspects of religiousness/spirituality that are most relevant as protective and/or risk factors.

Studies to determine the aspects of religious traditions that influence the risk of alcohol abuse.

Studies of the role of spirituality in adolescent development and how this relates to alcohol use among adolescents.

Research on the role of individual spiritual practices (prayer, meditation, readings, etc.) in intervention programs that are not spirituality based. An exploration of the effectiveness of spiritually focused interventions.

An examination of spirituality in the different stages of substance abuse: from initial use, to continued use, to dependence, and in primary prevention vs. secondary prevention.

Treatment and Recovery Issues

12-Step Programs

Studies of the role of spiritual or religious ingredients in 12-step treatment programs.

This might include studies on the association of spirituality/religiousness and personality factors in individuals in spirituality based intervention programs.

Determine the relationship of spirituality/religion and cohesiveness of spirituality-based 12 step programs including the relationship of spirituality/religion and attendance vs. engagement in the process of 12 step groups.

Examine the effectiveness of spirituality-based 12-step programs in cross cultural contexts.

Research to determine whether consideration of a patient"s spirituality might lead to more efficacious assignment to type of treatment.

Research in spirituality/religiousness and Alcoholics Anonymous: This might include how spirituality is understood, differences with other treatment adjuncts and behavior associated with core spiritual beliefs.

An exploration of the influence of spirituality and religious beliefs in non-spirituality-based treatment programs Encouraged are well thought out qualitative studies which explore the role of religious and spiritual factors on the experience of treatment and recovery.

Studies of the effectiveness of treatment programs that incorporate a traditional or cultural spiritual focus.

The relationship of spirituality/religion to known personal traits and cognitive and affective variables associated with recovery (e.g., regret/remorse, self responsibility).

Examine how an individual's spirituality changes as the person progresses into dependence and then through treatment and recovery.

Evaluate whether clergy trained in therapies, e.g. motivational enhancement techniques, are more effective in supporting those in recovery to maintain sobriety than clergy who are not trained.

Studies of the role of religious institutional support, (e.g., African American inner city churches) in the community matrix of care and other integrated approaches to alcoholism treatment.

Studies of the possible role of spirituality in natural recovery.

Health Services Research

Research to determine effective models of formal and informal linkages between organized religion and alcohol services.

Studies to determine the effect of religion-based services (e.g., pastoral counseling) on access to alcohol treatment services - the effectiveness of clergy as gatekeepers?

An exploration of whether reimbursement for spirituality-based alcohol services affects access, quality and outcomes of those services.

Physiological Relationships

Research on the use of neuroimaging techniques and electrophysiological assessments to better understand mechanisms involved in spirituality and alcoholism.

Multi-disciplinary approaches that include physiological, psychological, and spiritual aspects of prevention, treatment, and recovery from alcoholism.

Other Research Areas

Research on the relationship of spirituality and spiritual resources of the family of an alcoholic and the family's ability to cope.

Studies of the moderating effects of gender, race, and ethnicity on the relationship between religiousness/spirituality and alcoholism.

An examination of the domains and qualities of spirituality and religion often neglected in research (perceptions of guilt, one"s religious history, non-religious spiritual practices, and qualities such as hope and joy) in relationship to treatment outcome.

Studies of alcohol problems and spirituality/religiousness over different stages of the life-course.

SPECIAL REQUIREMENTS

An annual meeting will be held in the Washington, D.C., area to facilitate the exchange of information and coordination among investigators. Applicants must include support for these required meetings in the budget request.

INCLUSION OF WOMEN AND MINORITIES IN RESEARCH INVOLVING HUMAN SUBJECTS

It is the policy of the NIH that women and members of minority groups and their subpopulations must be included in all NIH supported biomedical and behavioral research projects involving human subjects, unless a clear and compelling rationale and justification is provided that inclusion is inappropriate with respect to the health of the subjects or the purpose of the research. This policy results from the NIH Revitalization Act of 1993 (Section 492B of Public Law 103-43).

All investigators proposing research involving human subjects should read the "NIH Guidelines for Inclusion of Women and Minorities as Subjects in Clinical Research," which was published in the Federal Register of March 28, 1994 (FR 59 14508-14513) and in the NIH Guide for Grants and Contracts, Vol. 23, No. 11, March 18, 1994, available on the web at:

http://grants.nih.gov/grants/guide/notice-files/not94-100.html.

INCLUSION OF CHILDREN AS PARTICIPANTS IN RESEARCH INVOLVING HUMAN SUBJECTS

It is the policy of NIH that children (i.e., individuals under the age of 21) must be included in all human subjects research, conducted or supported by the NIH, unless there are scientific and ethical reasons not to include them. This policy applies to all initial (Type 1) applications submitted for receipt dates after October 1, 1998.

All investigators proposing research involving human subjects should read the "NIH Policy and Guidelines" on the Inclusion of Children as Participants in Research Involving Human Subjects that was published in the NIH Guide for Grants and Contracts, March 6, 1998, and is available at the following URL address: http://grants.nih.gov/grants/guide/notice-files/not98-024.html.

Investigators also may obtain copies of these policies from the program staff listed under INQUIRIES. Program staff may also provide additional relevant information concerning the policy.

LETTER OF INTENT

Prospective applicants are asked to submit a letter of intent that includes a descriptive title of the proposed research, the name, address, and telephone number of the Principal Investigator, the identities of other key personnel and participating institutions, and the number and title of the RFA in response to which the application may be submitted. Although a letter of intent is not required, is not binding, and does not enter into the review of a subsequent application, the information that it contains allows Institute staff to estimate the potential review workload and avoid conflict of interest in the review.

The letter of intent is to be sent to the following address by the letter of intent receipt date listed in the heading of this RFA.

RFA: AA-00-002

Extramural Project Review Branch
National Institute on Alcohol Abuse and Alcoholism
6000 Executive Boulevard, Suite 409,MSC 7003
Bethesda, Maryland 20892-7003
Rockville, Maryland 20852 (for express/courier service)

APPLICATION PROCEDURES

The research grant application form PHS 398 (rev. 4/98) is to be used in applying for these grants. These forms are available at most institutional offices of sponsored research and from the Division of Extramural Outreach and Information Resources, National Institutes of Health, 6701 Rockledge Drive, MSC 7910, Bethesda, MD 20892-7910, telephone 301/435-0714, E-mail: GrantsInfo@nih.gov.

SPECIFIC APPLICATION INSTRUCTIONS FOR MODULAR GRANTS

The modular grant concept establishes specific modules in which direct costs may be requested. Only limited budgetary information is required under this approach. The just-in-time concept allows applicants to submit certain information only when there is a possibility for an award. It is anticipated that these changes will reduce the administrative burden for the applicants, reviewers, and Institute staff. The research grant application form PHS 398 (rev. 4/98) is to be used in applying for these grants, with the modifications noted below.

BUDGET INSTRUCTIONS

Modular Grant applications will request direct costs in $25,000 modules, up to a total direct cost request of $100,000 per year for R21 applications. Applications for competitive supplements to existing research grants for less than $100,000 (direct costs) a year for two years will also be accepted. The total project period for an application submitted in response to this RFA may not exceed two years. The total direct costs must be requested in accordance with the program guidelines and the modifications made to the standard PHS 398 application instructions described below:

PHS 398

FACE PAGE - Items 7a and 7b should be completed, indicating Direct Costs (in $25,000 increments up to a maximum of $100,000) and Total Costs [Modular Total Direct plus Facilities and Administrative (F&A) costs] for the initial budget period. Items 8a and 8b should be completed indicating the Direct and Total Costs for the entire proposed period of support.

DETAILED BUDGET FOR THE INITIAL BUDGET PERIOD - Do not complete Form Page 4 of the PHS 398. It is not required and will not be accepted with the application.

BUDGET FOR THE ENTIRE PROPOSED PERIOD OF SUPPORT - Do not complete the categorical budget table on Form Page 5 of the PHS 398. It is not required and will not be accepted with the application.

NARRATIVE BUDGET JUSTIFICATION - Prepare a Modular Grant Budget Narrative page. (See http://grants.nih.gov/grants/funding/modular/modular.htm for sample pages.) At the top of the page, enter the total Direct Costs requested for each year. This is not a Form page.

Under Personnel, list key project personnel, including their names, percent of effort, and roles on the project. No individual salary information should be provided. However, the applicant should use the NIH appropriation language salary cap and the NIH policy for graduate student compensation in developing the budget request.

For Consortium/Contractual costs, provide an estimate of total costs (Direct plus F&A) for each year, each rounded to the nearest $1,000. List the individuals/organizations with whom consortium or contractual arrangements have been made, the percent effort of key personnel, and the role on the project. Indicate whether the collaborating institution is foreign or domestic. The total cost for a consortium/contractual arrangement is included in the overall requested Modular Direct Cost amount. Include the letter of intent to establish a consortium.

Provide an additional narrative budget justification for any variation in the number of modules requested.

BIOGRAPHICAL SKETCH - The Biographical Sketch provides information used by reviewers in the assessment of each individual"s qualifications for a specific role in the proposed project, as well as to evaluate the overall qualifications of the research team. A biographical sketch is required for all key personnel, following the instructions below. No more than three pages may be used for each person. A sample biographical sketch may be viewed at:

http://grants.nih.gov/grants/funding/modular/modular.htm.

- *Complete the educational block at the top of the Form page,*
- *List position(s) and any honors,*
- *Provide information, including overall goals and responsibilities, on research projects ongoing or completed during the last three years, and*
- *List selected peer-reviewed publications, with full citations.*

CHECKLIST - This page should be completed and submitted with the application.

If the F&A rate agreement has been established, indicate the type of agreement and the date. All appropriate exclusions must be applied in the calculation of the F&A costs for the initial budget period and all future budget years. The applicant should provide the name and phone number of the individual to contact concerning fiscal and administrative issues if additional information is necessary following the initial review.

The RFA label available in the PHS 398 (rev. 4/98) application form must be affixed to the bottom of the face page of the application. Be sure to type the RFA number on the label. The sample RFA label available at: http://grants.nih.gov/grants/funding/phs398/label-bk.pdf has been modified to allow for this change. Failure to use this label could result in delayed processing of the application such that it may not reach the review committee in time for review. In addition, the RFA title and number must be typed on line 2 of the face page of the application form and the YES box must be marked.

Submit a signed, typewritten original of the application, including the Checklist, and three signed, photocopies, in one package to:

CENTER FOR SCIENTIFIC REVIEW
NATIONAL INSTITUTES OF HEALTH
6701 ROCKLEDGE DRIVE, ROOM 1040, MSC 7710
BETHESDA, MD 20892-7710
BETHESDA, MD 20817 (for express/courier service)

At the time of submission, two additional copies of the application must be sent to:

RFA :AA-00-002

Extramural Project Review Branch
National Institute on Alcohol Abuse and Alcoholism
6000 Executive Boulevard, Suite 409, MSC 7003
Bethesda, MD 20892-7003
Rockville, MD 20852 (for express/courier service)

Applications must be received by the application receipt date listed in the heading of this RFA. If an application is received after that date, it will be returned to the applicant without review.

The Center for Scientific Review (CSR) will not accept any application in response to this RFA that is essentially the same as one currently pending initial review, unless the applicant withdraws the pending application. The CSR will not accept any application that is essentially the same as one already reviewed. This does not preclude the submission of substantial revisions of applications already reviewed, but such applications must include an introduction addressing the previous critique.

REVIEW CONSIDERATIONS

Upon receipt, applications will be reviewed for completeness by the CSR and responsiveness by the NIAAA. If the application is not responsive to the RFA, CSR staff may contact the applicant to determine whether to return the application to the applicant or submit it for review in competition with unsolicited applications at the next review cycle.

Applications that are complete and responsive to the RFA will be evaluated for scientific and technical merit by an appropriate peer review group convened by the NIAAA in accordance with the review criteria stated below. As part of the initial merit review, a process will be used by the initial review group in which applications receive a written critique and undergo a process in which only those applications deemed to have the highest scientific merit, generally the top half of the applications under review, will be discussed, assigned a priority score, and receive a second level review by the National Advisory Council on Alcohol Abuse and Alcoholism.

Review Criteria

The goals of NIH-supported research are to advance our understanding of biological systems, improve the control of disease, and enhance health. In the written comments reviewers will be asked to discuss the following aspects of the application in order to judge the likelihood that the proposed research will have a substantial impact on the pursuit of these goals. Each of these criteria will be addressed and considered in assigning the overall score, weighting them as appropriate for each application. Note that the application does not need to be strong in all categories to be judged likely to have major scientific impact and thus

deserve a high priority score. For example, an investigator may propose to carry out important work that by its nature is not innovative but is essential to move a field forward.

(1) Significance: Does this study address an important problem? If the aims of the application are achieved, how will scientific knowledge be advanced? What will be the effect of these studies on the concepts or methods that drive this field?

(2) Approach: Are the conceptual framework, design, methods, and analyses adequately developed, well-integrated, and appropriate to the aims of the project? Does the applicant acknowledge potential problem areas and consider alternative tactics?

(3) Innovation: Does the project employ novel concepts, approaches or method? Are the aims original and innovative? Does the project challenge existing paradigms or develop new methodologies or technologies?

(4) Investigator: Is the investigator appropriately trained and well suited to carry out this work? Is the work proposed appropriate to the experience level of the principal investigator and other researchers (if any)?

(5) Environment: Does the scientific environment in which the work will be done contribute to the probability of success? Do the proposed experiments take advantage of unique features of the scientific environment or employ useful collaborative arrangements? Is there evidence of institutional support? In addition to the above criteria, in accordance with NIH policy, all applications will also be reviewed with respect to the following:

- *The adequacy of plans to include both genders, minorities and their subgroups, and children as appropriate for the scientific goals of the research. Plans for the recruitment and retention of subjects will also be evaluated.*
- *The reasonableness of the proposed budget and duration in relation to the proposed research.*
- *The adequacy of the proposed protection for humans or the environment, to the extent they may be adversely affected by the project proposed in the application.*

Additional consideration pertinent to the review of Exploratory/Developmental Grant (R21) applications:

- *Pilot/feasibility studies may contain little or no preliminary data. Review should focus on whether the rationale for the study is well developed and whether the proposed research is likely to generate data that will lead to a regular research project grant or full-scale clinical trial. Adequate justification for the proposed work may be provided through literature citations, data from other sources, or investigator-generated data. Schedule*

Letter of Intent Receipt Date: April 24, 2000
Application Receipt Date: May 24, 2000
Peer Review Date: July/August, 2000
Council Review: September 13, 2000

Earliest Anticipated Start Date: September 29, 2000

AWARD CRITERIA

Award criteria that will be used to make award decisions include:

- *scientific merit (as determined by peer review)*
- *availability of funds*
- *programmatic priorities.*

As indicated above under the Purpose of the RFA, applications will be submitted to the NIH and will be reviewed according to normal NIH peer review procedures. Applications judged meritorious, but not funded by the NIAAA, will be eligible for funding by the Fetzer Institute. Applicants eligible for consideration by the Fetzer Institute will be notified following completion of the NIH peer review process. At that time it will be the applicant's responsibility to submit the application, along with the NIH prepared summary statement, to the Fetzer Institute (following the application guidelines of the Fetzer Institute) to be eligible for Fetzer Institute funding.

INQUIRIES

Inquiries concerning this RFA are encouraged. The opportunity to clarify any issues or questions from potential applicants is welcome. Inquiries should be limited to the persons identified below as NIH administrators.

Direct inquiries regarding programmatic issues to:
Raye Litten, III, Ph.D.
Division of Clinical and Prevention Research
National Institute on Alcohol Abuse and Alcoholism
Willco Building, Room 505

6000 Executive Boulevard
Bethesda, MD 20892-7003
Telephone: (301) 443-0636
FAX: (301) 443-8774

E-mail: rlitten@willco.niaaa.nih.gov

Vivian Faden, Ph.D. Division of Biometry and Epidemiology National Institute on Alcohol Abuse and Alcoholism Willco Building, Room 514 6000 Executive Boulevard Bethesda, Maryland 20892-7003 Telephone: (301) 594-6232 FAX: (301) 443-8614 E-mail: vfaden@willco.niaaa.nih.gov

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Direct inquiries regarding fiscal matters to: Ms. Judy Simon Grants Management Branch National Institute on Alcohol Abuse and Alcoholism 6000 Executive Boulevard, MSC 7003 Bethesda, MD 20892-7003 Telephone: (301) 443-2434 FAX: (301) 443-3891 E-mail: js182a@nih.gov AUTHORITY AND REGULATIONS

This program is described in the Catalog of Federal Domestic Assistance No. 93.273. Awards are made under authorization of the Public Health Service Act, Title IV, Part A (Public Law 78-410, as amended by Public Law 99-158, 42 USC 241 and 285) and administered under NIH grants policies and Federal Regulations 42 CFR 52 and 45 CFR Parts 74 and 92. This program is not subject to the intergovernmental review requirements of Executive Order 12372 or Health Systems Agency review.

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"Mentor is the leading international non-government organisation working globally to prevent substance abuse"

Adolescent Brain Development & Vulnerability to Drug Use

Project Location: *Online*
Status: *Materials available to download*
Duration: *2007–2008*

There is significant new research concerning adolescent brain development and the effects of alcohol and other drug use on the developing brain. This emerging science is providing new insights about how teenagers make critical and life influencing decisions, including their decisions about drug use. Brain imaging studies suggest that the brain continues to develop through adolescence and into young adulthood (age 25 years). During adolescence, the parts of the brain that are responsible for expressing emotions and for seeking gratification tend to mature sooner than the regions of the brain that control impulses and that oversees careful decision making. As one expert puts it the teenage brain "has a ***well-developed accelerator*** *but only a* ***partly developed brake****."*

The maturing brain of the adolescent may also pose a particular risk toward drug abuse. There is some evidence that the developing brain is prone to the deleterious effects of alcohol. One study showed that memory ability may be negatively affected by about 10% as a result of alcohol abuse.

Mentor has prepared a more detailed summary of this emerging science about brain development and the vulnerability of adolescents to drug abuse. The pack includes a booklet and a slideshow (complete with speaker's notes, see below for preview). If you find these resources useful please consider making a donation using the form on the right of this page. Your donation will help support Mentor's work all over the world.

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Mentor has used this new research on the Adolescent brain to create a stimulating program for young people in the 14-18 age group, with Hazelden.

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Mentor Germany

Mentor Germany was launched in 1997 as a member of The Mentor Foundation, committed to the prevention of drug abuse and addiction.

Mentor Germany initiates and promotes the development, implementation and dissemination of prevention projects for children (6-14 years) and adolescents and young adults (15-25). Mentor Germany aims to meet children and young people as equals and enable them to develop in a healthy way. Mentor Germany sees itself as a mediator and mouthpiece for the interests of children and young people and represents their views to society and politicians.

Information about our work, especially the rebound project can be found on these pages or directly at www.my-rebound.de. We are happy to present our work in person and invite you to directly project visits. You can mentor the work of Germany through your donation to participate in our events, as a CSR project partner or sponsor support.

Eigenständig werden
Project Location: *Germany*
Status:
Duration: *1998- 2004*
Operated by: *Mentor Germany / Implemented by the Department for Therapy & Health Research ITF Nord*
Target Group / Participants: *Primary school children (40,000), parents and teachers (2000).*

Mentor Germany has mainly invested in one major prevention initiative, "Eigenständig werden". "Eigenständig warden" is a school-based project which focuses on teaching children independence, self confidence and conflict resolution skills in the school grades 1- 4 in elementary school. The programme is designed to address the major cognitive, attitudinal, psychological and social factors that are empirically or conceptually related to pupils drug use.

Materials for grades 1 to 4 were initially developed and tested in a pilot study which was monitored and evaluated by IFT-Nord. Teachers were asked to fill out a number of questionnaires when taking part in the study, asking them to assess training methods, the teaching units and the project overall, as well as filling in a questionnaire at the end of each lesson to evaluate the programmes feasibility and weaknesses which showed that over 90% of the teachers considered the program to be "good" or "very good".

The programme materials included:

A Teacher's Handbook: *providing general information of childhood development, fostering social skills and a comprehensive review of theoretical and practical considerations.*

Instruction cards: *Including 40 different teaching units for grades 1 to 4. Each unit included a lesson card providing teachers with objectives, time and recourses for the lessons.*

A Teachers Guide: *For cooperative work with parents which provides information about how to carry out project related parents evenings*

Implementation in schools:

More than half of the units were used; some were also used with children older than they initially were developed for. Units such as "coping with anxiety" and "others have feelings too" were used more extensively. Teachers reported these units as particularly important in the central steps of the child's healthy development and the examination of one's own and other people's feelings.

Integration of parents:

The support and cooperation of parents is believed to be one of the prerequisites for a successful drug prevention programme, especially for children in primary schools where parents act as important role models and shape their children's moral concepts. According to more than 70% of the teachers, the parents showed interest in the programme and 25% of the teachers reported that parents supported the implementation of the project actively and with great enthusiasm.

Outcome:

According to reports from the teachers, the pupils enjoyed the programme. The majority noticed an improved social climate within the classes, outsiders were integrated more often and socially anxious children participated far more actively during lessons. On average 81% of the pupils participated actively.

So called decentralised "multipliers" are now also trained within the framework of "Eigenständig werden". 50 other educators and a further 33 "multipliers" were also trained, so that they can train teachers elsewhere. Since 1999, 850 teachers in have taught the programme to approximately 40,000 children in over 100 schools.

An outcome evaluation has been carried out in order to determine the effects of the program on health behaviour in children. The study started in June 2002 and is carried out in a control-group-design with repeated measurement for a period of 5 years. In 2004 the project won a National German Award from the Bertelsmann Foundation in recognition for its quality of approach in providing a valuable school based project offering training and support for teachers and parents as well as well developing materials to use in schools. "Eigenständig werden" has now been recognised in 8 of the 16 regions throughout Germany and in all has trained approximately 2000 teachers.

The project evaluation (in German) is available to download.

For Further Information on the project contact Mentor Germany
http://www.mentorfoundation.org/projects.php?nav=3-27-35-61&pg=1&id=33

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Early Spirituality Deters Alcohol Abuse

Teens who have an active spiritual life are half as likely to become alcoholics or drug addicts or even try illegal drugs that those who have no religious beliefs or training, a new study reports.

Previous studies have indicated that being spiritual or religious may help persons recovering from substance abuse overcome their addictions later in life, but this new study suggests that adolescents are much less likely to ever develop those problems, if they have a spiritual foundation when they are young.

"Alcoholism, in addition to being a biological disorder, is a spiritual disorder," lead author Dr. Lisa Miller told Reuters Health. "Adolescents who claim to have a personal relationship with the Divine are only half as likely to become alcoholics or drug addicts, or for that matter even to try contraband drugs (marijuana and cocaine). This is particularly important because onset of alcoholism and drug addiction usually occurs in adolescents."

To determine the relationship between their religiosity and substance use of 676 adolescents aged 15 to 19, Miller and colleagues at Columbia University conducted a study using survey data. This is the first study to show that personal spirituality strongly protects against ever developing alcoholism or drug abuse.

The study shows that teens with a higher degree of personal devotion, personal conservatism, and institutional conservatism were less likely to engage in alcohol consumption and less likely to engage in marijuana or cocaine use.

Spiritual, Not Religious

"The findings show that a personal sense of spirituality helps adolescents avoid alcohol and drug use and abuse," Miller told Reuters. "Unlike adults in (Alcoholics Anonymous), adolescents in this study were shown not to be helped by a rigid or forced adherence to religion."

In other words, "religion" forced upon adolescents by their parents or others has little effect, but if teens have made a personal choice to pursue a spiritual life, they are much less likely to drunk and drug.

"Spirituality, whether within or without of religion, is the most central baring in an adolescent's life," Miller emphasized. "It cannot be ignored by parents, or the adolescent will go 'shopping' for meaning, communion and transcendence," she said.

The study authors concluded that adolescents at high risk might be protected from substance dependence or abuse if they engage with a Higher Power or become involved in a religious community.

The survey question teens about their personal devotion, personal conservatism, and institutional conservatism defined as "representing an active personal relationship with the Divine, representing a personal choice to teach and adhere closely to creed, in some cases initiated through a 'born-again' experience, and as the degree of fundamentalism in a religious denomination."

The study was published in the Journal of the American Academy of Child and Adolescent Psychiatry.

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Alcohol s Effects on Adolescents

Linda Patia Spear, Ph.D.

Linda Patia Spear, Ph.D., is a Distinguished Professor and chairperson in the Department of Psychology at the Center for Developmental Psychobiology, Binghamton University, Binghamton, New York.

During adolescence, many people begin to experiment with alcohol, yet relatively little is known about alcohol's effects on this critical stage of development. We do know that early initiation of alcohol use remains one of the most powerful predictors of later alcohol abuse (Grant 1998). We also know that during adolescence changes occur in the regions of the brain involved in modulating drug reinforcement, so it cannot be assumed that factors precipitating alcohol use or abuse are the same in adolescence as in adulthood. Rapidly changing body systems often are particularly vulnerable to disruption, and hence long–term consequences may result from alcohol exposure during this time of accelerated neural and endocrine system maturation (Spear 2000a). For all of these reasons, adolescence is a critical stage of development, and additional research is warranted into the effects of drinking during this important transition period. This sidebar briefly reviews findings on how alcohol affects adolescents, with a special emphasis on the impact of alcohol on neural and endocrine development. Though the research in this area is scarce, gender–specific effects are highlighted whenever possible.

Epidemiology of Drinking Among Adolescents

Results from national surveys of adolescents and young adults show that alcohol use is prevalent among both young men and women. The prevalence of drinking and binge drinking (consuming five or more drinks on a single occasion in the previous 2 weeks) is higher among male students relative to their female peers, but data from the Monitoring the Future Survey (MFS) (Johnston et al. 2002)—a nationally representative sample of 8th, 10th, and 12th graders—show that the gender gap is closing. For example, in 2001, 36 percent of 12th grade males reported binge drinking, compared with 24 percent of their female counterparts (a 12–percentage–point difference). However, in 1975 there was a 23–percentage–point difference between rates of male and female binge drinking (Johnston et al. 2002). Among females, 20.6 percent of 8th graders and 45.1 percent of 12th graders reported using alcohol in the 30 days prior to the survey (i.e., 30–day prevalence); of those 8th grade females, more than half reported binge drinking.

Early Initiation of Alcohol Use

This early alcohol use may have potentially long–lasting consequences. Early onset of alcohol or other drug use is one of the strongest predictors of later alcohol dependence (Grant 1998). Although young men are significantly more likely than young women to report using alcohol before age 13 (34.2 percent versus 24.2 percent) (Grunbaum et al. 2002), survey data suggest that, over time, the age of initiation to alcohol use among young women has decreased. For example, in 1975, 42 percent of female high school seniors reported first using alcohol before 10th grade, compared with 53 percent in 1993 (the last year for which the specific question was asked) (Johnston et al. 2001).

Two possible explanations exist to describe the relationship between early alcohol use and later dependence. First, exposure to alcohol or other drugs during adolescence may alter critical ongoing processes of brain development that occur at that time, increasing the likelihood of problems with alcohol later in life. Indeed, heavy drinking during early and mid–adolescence has been found to be associated with memory problems and other neuropsychological deficits, although the causality of this relationship has yet to be determined (Brown et al. 2000). Another interpretation for the early exposure effect is that early use of alcohol or other drugs might simply serve as a marker, not a precursor, for a later abuse disorder. For instance, a preteen's tendency to seek out new experiences (i.e., high novelty–seeking behavior) was found to be predictive of alcohol abuse at age 27 (Cloninger et al. 1988). Strong novelty–seeking behavior is one of a number of traits that have been linked to early initiation of alcohol and other drug use (Baumrind 1987).

These two views on the significance of the early exposure effect are not necessarily mutually exclusive. For example, adolescents with conduct disorder are at higher risk for early as well as later alcohol and other drug use. Yet people with conduct disorder who begin to drink at an early age have a particularly high risk for problems with alcohol and other drugs later in life (Robins and McEvoy 1990).

Neural and Endocrine Development

Striking physical changes occur in the brain during adolescence, including the maturation of new brain constituents (such as the formation of additional connections between nerve cells) as well as a prominent loss (or pruning) of some existing connections. Adolescence–associated changes in the brain's dopamine

(DA) system may affect the way this important neural messenger communicates with the prefrontal cortex and limbic brain regions (i.e., the so–called mesocorticolimbic DA system). Changes in these systems may have a profound effect on adolescent behavior and psychological functioning (Spear 2000b). It is possible that features of the adolescent brain may predispose young people to behave in ways that place them at particular risk for trying alcohol or other drugs. In rats, the DA system has been implicated in novelty seeking (Dellu et al. 1997) and has been identified as part of a brain cell circuit involved in assigning value (i.e., "incentive salience") to stimuli, including alcohol, and translating the decision to use alcohol into action (Kalivas et al. 1993).

Adolescence also is the time during which changes in hormone patterns begin to emerge. Sex differences in behavior appear, orchestrated in part by the rapid changes in these pubertal hormones (for more information, see the article in this issue by Emanuele and colleagues, pp. 274–281). Surprisingly, though, puberty–related increases in reproductive hormones have not been associated in any simple way with other characteristic behavioral features of adolescence (Susman et al. 1987). Instead, the unique behavioral features of adolescence—such as a greater emphasis on peer interactions, increased novelty seeking, and other reckless behavior (Arnett 1992; Spear 2000b)—may be driven largely by maturational changes in the nervous system, as reviewed below.

During adolescence, the prefrontal cortex, a region thought to be involved in various goal–directed behaviors (e.g., rule learning, working memory, and spatial learning) and in emotional processing (particularly of unpleasant stimuli) undergoes substantial remodeling. For example, as demonstrated in nonhuman primates, the input from two key chemicals (i.e., neurotransmitters) involved in brain cell communication—the excitatory neurotransmitter glutamate and the inhibitory neurotransmitter gamma–aminobutyric acid (GABA)—is reduced during adolescence, while input from another neurotransmitter, DA, peaks in the prefrontal cortex during adolescence (Lewis 1997). Another region that undergoes developmental adjustment is the amygdala (Yurgelun–Todd 1998), a complex grouping of brain cells that, among other things, is thought to be involved in a person's emotional reactions and in coordinating the body's response to stress.

In research on another brain region, the hippocampus, which is important for learning and memory, DeBellis and colleagues (2000) used magnetic resonance imaging to evaluate the volume of this region in alcohol–abusing or alcohol–dependent adolescents (average age 17). The researchers found that hippocampal volumes were significantly smaller in the adolescents with alcohol use problems, compared with control subjects. Older age of onset of the alcohol use disorder and shorter duration of the disorder were associated with larger hippocampal volume. Although studies show that alcohol use affects neurocognitive function in adult women and men equally, female study participants' shorter drinking histories suggest that they may be more sensitive to alcohol's effects (Glenn et al. 1988; Nixon 1994). In addition, limited research suggests that women may be more susceptible than men to alcohol–related brain shrinkage (Hommer et al. 1996a,b).

Responses to Stress

Gender differences in the body's hormonal response to stress also begin to emerge late in adolescence. For example, compared with males, prepubescent female rats show elevated levels of corticosterone (analogous to cortisol in humans)—a key stress hormone (Ramaley and Olson 1974; Cirulli et al. 1996).

In addition, many of the same neural systems known to undergo developmental changes during adolescence are activated by stress, including DA projections to the prefrontal cortex as well as to mesolimbic brain regions (Abercrombie et al. 1989)—areas thought to be critical in modulating the pleasurable response that follows alcohol use (Koob 1992). In studies with rats, important docking molecules (i.e., receptors) for the stress hormone corticosterone have been identified on DA cell bodies in the ventral tegmental area and the substantia nigra as well as in DA terminal regions, including the nucleus accumbens and the prefrontal cortex (Ahima and Harlan 1990; Cintra et al. 1994). Increases in corticosterone may play a critical role in activating DA transmission, as evidenced by the fact that, in rodents, DA levels in the nucleus accumbens (Piazza et al. 1996) and prefrontal cortex (Imperato et al. 1989) increase with corticosterone treatment and decrease with removal of the adrenals (the area where corticosterone is produced). In a similar fashion, adrenalectomy or pharmacologically induced blockade of stress–hormone synthesis suppresses alcohol consumption in laboratory animals (Fahlke et al. 1994).

The results of this basic research suggest that stress–induced increases in stress hormones may interact with mesocorticolimbic brain regions to facilitate alcohol use behavior. Further research into the effects of stress on the development of alcohol problems is crucial. Investigations of stress effects in adolescents will be especially important given the dramatic changes taking place in the brain during that time.

Likewise, further examination of how stress, anxiety, and depression interact in this age group is important. Adolescence often is characterized as an emotionally stormy period. Though most children navigate this transitional period without serious problems, about one–third to one–half of adolescents report significant depressed mood or affective disturbances that could be described as "inner turmoil" or "feeling miserable"

(Compas et al. 1995; Rutter et al. 1976). Adolescents also tend to show greater extremes in mood than adults (for a review, see Larson and Richards 1994; Arnett 1999); in addition to this emotional volatility, anxiety and self–consciousness also appear to peak at this time (see Buchanan et al. 1992).

Pubertal maturation in girls is associated with emotional difficulties, depression, and problems with self–image, as well as an increase in risk–taking behaviors (for a review, see Steinberg and Belsky 1996). During early adolescence, girls may be especially vulnerable to stress, perceiving events to be more stressful at that time than at any other (Ge et al. 1994; Wagner and Compas 1990; also see Vik and Brown 1998 for further discussion of gender differences in perceived stressfulness during adolescence).

This anxiety and stress may play an important part in adolescents' initiation of alcohol or other drug use (Pohorecky 1991; Wagner 1993). In her review of the literature on stress effects on alcohol consumption in humans, Pohorecky (1991) found that stress clearly influences alcohol consumption in adolescence, but not necessarily in adults. Indeed, the level of perceived stress was found to be the most powerful predictor of adolescent alcohol and other drug use, after peer substance use (Wagner 1993).

Researchers need more information about the hormonal, behavioral, and neural interactions that take place in response to stress during adolescence. Understanding why young people use alcohol to cope with stress within a developmental timeframe also is important. The relationship between stress and adult drinking may be far different from the relationship between these variables in adolescence, the time when most people begin drinking.

Tolerance and Sensitivity to Alcohol's Effects

Evidence suggests that alcohol may affect adolescents differently than adults. Studies using animals have shown that, compared with other age groups, adolescents do not experience the same degree of incoordination and sleepiness when drinking alcohol as do adults (that is, they are relatively resistant to the motor–impairing and sedative effects of alcohol) (Silveri and Spear 1998). Adolescents do, however, appear to be more sensitive to alcohol–induced disruptions in spatial memory (Markwiese et al. 1998). Research is needed to determine when young people in this age group are most susceptible to alcohol's effects, what mechanisms underlie this differential age responsiveness, and whether female adolescents differ from males in alcohol sensitivity at this critical time. Understanding tolerance and sensitization is particularly important given that research suggests that a less intense reaction to alcohol may increase the likelihood that a person will drink more heavily and more often, setting the stage for the development of alcohol problems (Schuckit 1995).

Conclusion

Research on alcohol's effects on the developing adolescent is still in its infancy, despite the fact that this is the time during which many people begin drinking. There is evidence that people who begin drinking at an early age may have problems with alcohol later in life. Research also has shown that adolescence is a time when remarkable changes are taking place in the brain. Just how alcohol use impacts this development or whether these developmental changes influence alcohol use is unknown.

It also is unclear how gender differences may influence the way that alcohol affects the developing adolescent brain and other body systems. Researchers have shown that chronic alcohol consumption can disrupt developmental changes in hormones associated with puberty in both males (Cicero et al. 1990) and females (Dees et al. 1990). It also is clear that gender influences the perception of stress, a factor that has been shown to lead to higher rates of alcohol use among this age group. Just how these endocrine–related changes influence alcohol use is not fully understood.

Most importantly, future research efforts must examine why early exposure to alcohol is apparently associated with considerably more adverse consequences than later use, and why this age group seems at particular risk for alcohol's deleterious effects.

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Christian Teens and Drinking

Making Decisions Based on Facts and Faith

By Kelli Mahoney

One of the biggest dilemmas facing Christian teens today is how to handle the pressure to drink alcohol. The issue of drinking continues to be debated among Christian denominations (some abstain while others recommend moderation), yet that debate can create some confusion for Christian teens. Here are some facts, scripture, and truths about alcohol to help Christian teens to make Godly decisions:

Some Interesting Statistics About Teens and Drinking

Per the National Clearinghouse for Alcohol and Drug Information, there are 3 million teens suffering from full-blown alcoholism. That number does not even include the millions more that have an unmanageable drinking problem. Also, teens that begin drinking before age 15 are 4 times more likely to develop alcohol dependence than those who wait until they are 21.

A far greater concern is that alcohol is a major factor in the 3 leading causes of death for people age 15 to 24 - car crashes, murders, and suicides. The fact that alcohol contributes to the leading causes of death should be of more concern to Christian teens, because it doesn't mean that the teen who is harmed has to be the drinker. For instance, 75 percent of rapes happen when at least one party is under the influence of alcohol.

What Alcohol Does to Christian Teens

Alcohol has very specific effects on the body. Here are some of the effects that alcohol has on everyone who drinks it:

- ***Dehydration.** Most people don't realize that alcohol actually pulls water from the body and the brain. In fact, it is actually dehydration of the brain that causes the typical hangover.*
- ***Dulled senses.** If you drink your five senses just don't work the way they would when you are sober.*
- ***Decreased reaction time.** One of the reasons alcohol use is a major cause of fatal accidents is because people cannot react as quickly when they are under the influence. If you drink you will not be able to think as quickly in questionable situations.*
- ***Impaired judgement.** One of the first things to go when you drink is your judgement. Your inhibitions decrease and you are more likely to make poor decisions.*
- ***Impaired memory.** When under the influence your memory is not very good, yet long-term use causes even further memory damage.*
- ***Weight gain.** If you are one of those Christian teens concerned about your weight, then drinking alcohol should be avoided. Alcohol is pure sugar and slows down the metabolism. It also causes hunger as the sugar is digested, so you may end up eating foods that cause even further weight gain.*

While the above effects happen in everyone who drinks, extreme drinking can also cause coma or death. The body can only ingest so much alcohol before its systems start shutting down. Even long term use has some ugly effects such as cauliflowering of the nose and ears, loss of long term memory, heart problems, obesity, premature dementia, loss of bladder control, and slurred speech (even when sober).

Legal Issues Associated with Teen Drinking

While all of the physiological effects and statistics about drinking sound scary, many Christian teens adhere to the philosophy, "Well, it won't happen to me." Most of us like to believe that those bad things won't happen to us. It is for this reason that legislators in many countries have created a legal drinking age. Thus, if you are under that drinking age (in the U.S. it is 21), you cannot purchase or drink alcohol legally.

So, what does that mean for Christian teens? Well, the Bible says that Christians are to follow the law of the land. If you are breaking the law by drinking when you are not of legal age, then you are also not doing right in God's eyes.

Romans 13: 1-2 - "Everyone must submit himself to the governing authorities, for there is no authority except that which God has established. The authorities that exist have been established by God. Consequently, he who rebels against the authority is rebelling against what God has instituted, and those who do so will bring judgment on themselves." (NIV)

What Else Does the Bible Say About Alcohol?

Much of the debate over drinking comes from the known effects of alcohol. Many denominations feel that the effects of alcohol pull people away from a relationship with God, so they ban any use of alcohol. Others feel that drinking in itself is not sinful (after all, Jesus turned water into wine), but that excessive drinking can be sinful. Whether you adhere to one philosophy on drinking or the other, you need to know that God is with you, helping you to make the best decisions for you.

Ephesians 5:18 - "Don't be drunk with wine, because that will ruin your life. Instead, let the Holy Spirit fill and control you." (NLT)

1 Corinthians 10:13 - "The temptations in your life are no different from what others experience. And God is faithful. He will not allow the temptation to be more than you can stand. When you are tempted, he will show you a way out so that you can endure." (NLT)

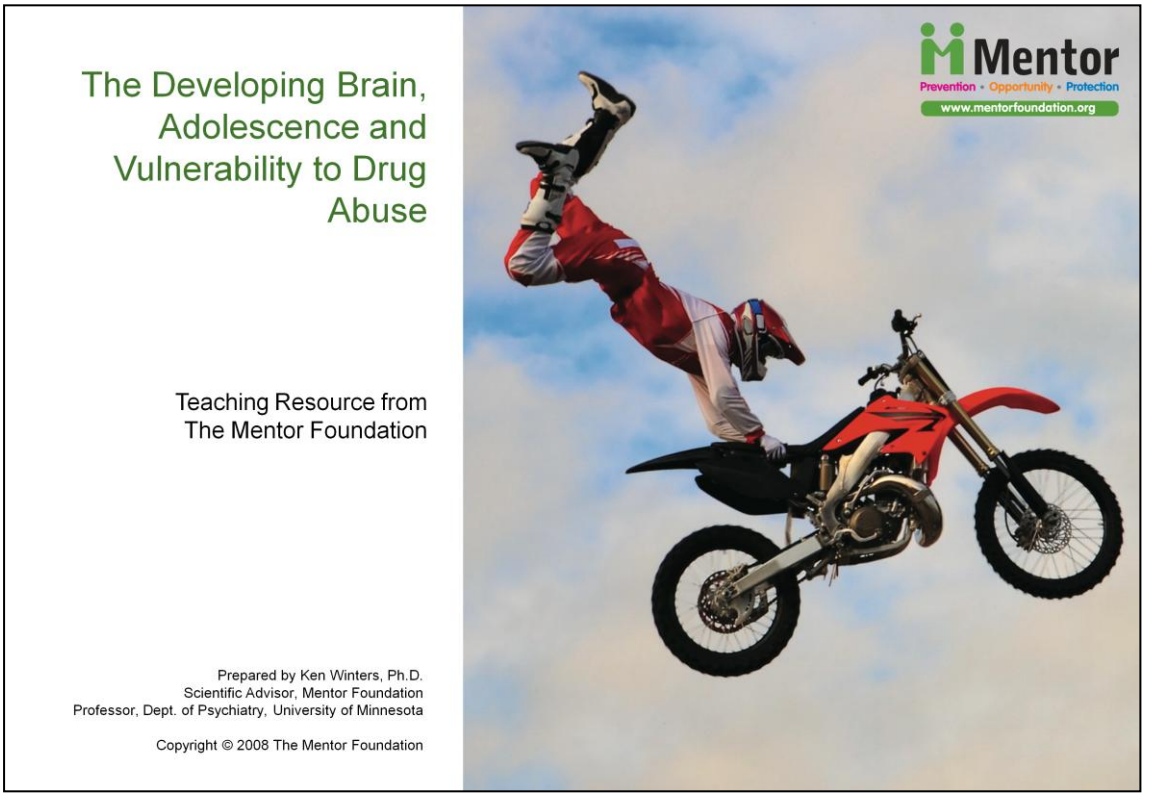
Suggested Reading

- *Christian Teens and Prom*
- *What the Bible Says About...Godly Behavior*
- *Overcoming Spring Break Temptations*

Related Articles

- *Parents Become Aware Risks of Teen Drinking*
- *Drinking Alcoholic Beverages When You Have IBD*
- *Party On Responsibly! drinking - drugs - alcohol - sobriety - sober - absti...*
- *Party On Responsibly! drinking - drugs - alcohol - sobriety - sober - absti...*
- *Has My Teenager Been Drinking Alcohol?*

http://christianteens.about.com/od/christianliving/a/Drinking.htm



Welcome. This presentation is for you to read and to use in your prevention work. We hope you will review it, learn from it and feel comfortable using it in presentations to colleagues that work in prevention, as well as to parent and youth groups.

This material provides a non-technical summary of the latest findings on adolescent brain development and how drugs can affect everyone's brain – youth or adult. Scientists are now beginning to reach a new understanding of the changes in pre-adolescent and adolescent brains. Scientists caution about making definitive links from neurodevelopmental findings to behavior. However, the discovery that brain construction is still in progress during adolescence offers several suggestive hypotheses. This emerging science can be useful in how we think about adolescent behavior, including their use of drugs.

Acknowledgements

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Scientific Advisor, Mentor Foundation
Professor, Dept. of Psychiatry, University of Minnesota

Support for this work was provided by the Archie and Bertha Walker Foundation, RKMC Private Foundation, and the Mentor Foundation.

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Jay Giedd, National Institute on Mental Health (USA)
Jeff Lee, Mentor Foundation (UK)
Tom McClellan, Treatment Research Institute (USA)
Linda Spear, SUNY at Binghamton (USA)
Susan Tapert, University of California – San Diego (USA)

This presentation was prepared by Ken Winters, Ph.D., member and Chair of Mentor International's Scientific Advisory Network, and Professor, Department of Psychiatry, University of Minnesota (USA).

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Emerging Science:

Teen Brains Are Still "Under Construction"

New insights about:

- Risk taking by teenagers
- How teenagers may be highly vulnerable to drug abuse

New scientific discoveries are altering out perspective on how to understand adolescent behavior. Now, research into the adolescent brain suggests that the human brain is still maturing during the adolescent years, with changes continuing into the early 20s.

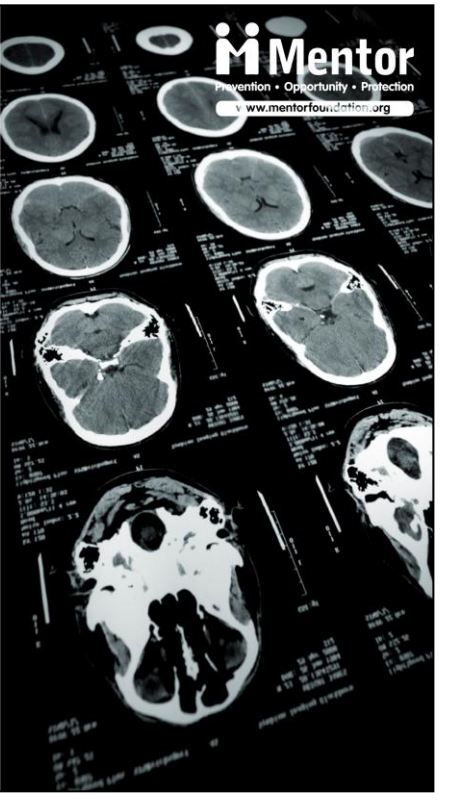
The developing brain of the teenage years can provide clues as to why adolescents may be more prone to take risks and why teenagers are particularly vulnerable to the effects of drugs. These new scientific discoveries provide valuable lessons for parents, and for adults that work with youth. They reinforce the importance that teenagers benefit from guidance provided by adults, and that careful and regular monitoring of their behavior is a high priority for parents.

Emerging Science:

Brain Imaging

New insights because:

- 1990's information explosion due to the development of brain imaging techniques (e.g., CT, PET and MRI).



What led to this emerging science of brain development? During the 1990's there was a rapid growth in brain imaging technologies. These advances have provided windows on the developing brain. Scientists are using these new technologies to better understand the process of brain construction during adolescence.

What Have We Learnt?

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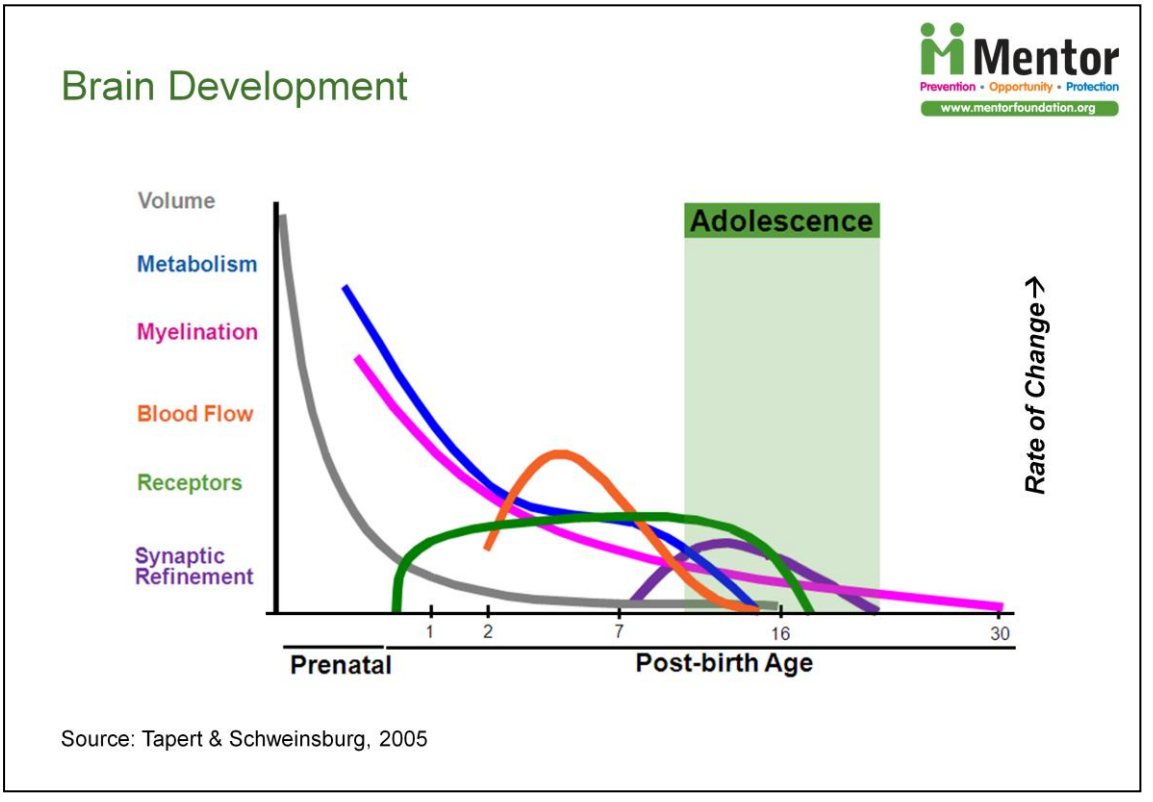
- Adolescence is a period of profound brain maturation.
- We thought brain development was complete by adolescence
- We now know… maturation is not complete until about age 25!

Source: Giedd, 2004.

Based on the pioneering work of Jay Giedd (2004) and colleagues at the National Institute of Mental Health in the United States, evidence is accumulating that the brain is not fully formed at puberty as earlier thought. Rather, the brain continues important maturation that is not complete until about age 25.



Here is some background about this maturation.

Although most of the brain material and size is in place at the start of adolescence, several important developmental processes continue. Two of them are noteworthy.

One process is myelination. The structures or axons connecting brain cells across which electrical impulses travel continue to become ensheathed in a fatty substance called myelin. This compound insulates axons and speeds the relay of electric impulses within the brain, helping thinking, decision-making, impulse control, and emotional regulation mature.

Another process is synaptic refinement. At the start of adolescence, we have billions of brain cells, each with tens of thousands of connections to other brain cells. Not all these connections are actually needed, and the unnecessary nes become eliminated. This elimination process is shaped by the young person's activities and experiences, and, as with myelination, it helps the brain work more efficiently.

Brain Development

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When the pruning is complete, the brain is faster and more efficient.

But… during the pruning process, the brain is not functioning optimally.

Source: Giedd, 2004.

When the pruning and mylenation process is complete, the brain can work faster and will be more efficient. But, during the pruning process, the brain is not functioning at optimal capacity.

Because the pruning process occurs in stages across brain structures, it is informative to examine this process in more detail.

Brain Development

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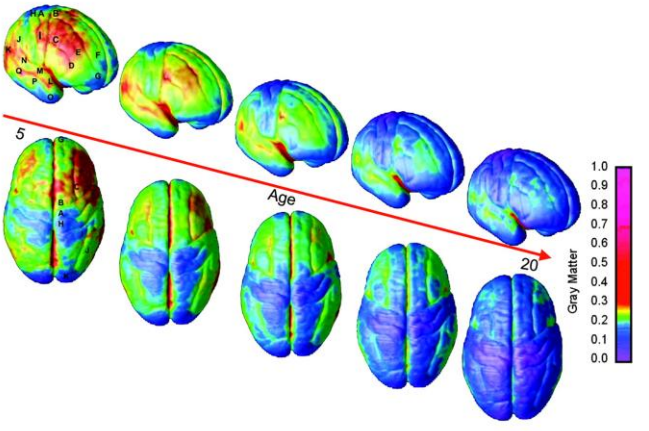
Maturation Occurs from Back to Front of the Brain

Images of Brain Development in Healthy Youth (Ages 5 – 20)

Blue represents maturing of brain areas



Gogtay, N., Giedd, J.N., et al. (2004)
Dynamic mapping of human cortical development during childhood through early adulthood
Proceedings of the National Academy of Sciences, 101 (21), 8174 – 8179

Source: Gogtay, Giedd, et al., 2004.

The maturation of brain structures generally occurs from the back of the brain to the front. There are four primary brain structures from the back to the front of the brain – cerebellum, nucleus accumbens, amygdala and prefrontal cortex – that are noteworthy in terms of how their differential maturation may impact adolescent behavior.

A major brain structure at the back of the brain is the cerebellum. This structure controls physical or motor coordination, and is a region that is involved in the playing of sports.

The nucleus accumbens, which is responsible for motivation, and the amygdala, which identifies and controls emotion, are brain regions located more in the middle of the brain. The nucleus accumbens is responsible for how much effort the organism will expend in order to seek rewards. A developing nucleus accumbens is believed to contribute to the often-observed tendency that teenagers prefer activities that require low effort yet produce high excitement. Real-world observations may bear this out: many teenagers favor playing video-games, for example. The amygdala is responsible for integrating how to emotionally react to pleasurable and aversive experiences. It is hypothesized that a developing amygdala contributes to two behavioral effects: the tendency for adolescents to react to situations with "hot" emotions rather than more controlled and "cool" emotions, and the propensity for youth to mis-read neutral or inquisitive facial expressions from other individuals as a sign of anger.

And one of the last brain regions to complete maturation is the structure named the prefrontal cortex, located just behind the forehead. Sometimes referred to as "the seat of sober second thought," it is the area of the brain responsible for the complex processing of information, ranging from making judgments, to controlling impulses, foreseeing the consequences of ones' actions, and setting goals and plans. A developing prefrontal cortex may contribute to poor judgment and risk taking..

Implications of Arrested Development:

Adolescent Behaviour

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Earlier development of the back of the brain and later development of the front of the brain …

Let's put this developmental picture into a boarder perspective of general adolescent behavior.

Neurodevelopment suggests that the adolescent is more "under the influence" of the physical activity and the emotional structures of brain, compared to the judgment (prefrontal cortex) portion of the brain. Thus, we can expect that teenagers tend to . . . . .

(GO TO NEXT SLIDE)

Implications of Arrested Development:

Adolescent Behaviour

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Earlier development of the back of the brain and later development of the front of the brain …

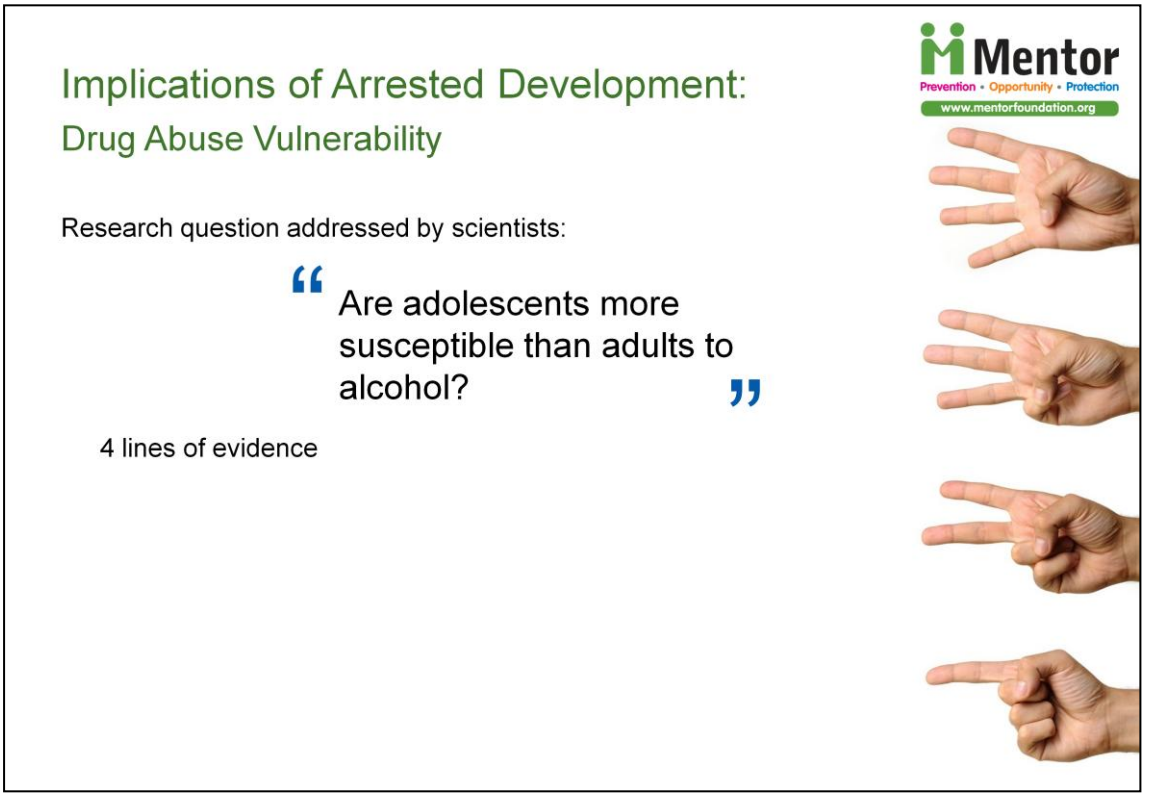
- Preference for physical activity
- Less than optimal planning and judgment
- More risky, impulsive behaviours
- Minimal consideration of negative consequences

…..prefer sensation seeking and physical activities over ones that require a great deal of complex thinking;

…..show less than optimal planning and judgment;

…..engage in more risk-taking and impulsive behaviors compared to when the person is older; and

…..be less inclined to consider the possible negative consequences of such risky behaviors.



Let’s further explore this topic of adolescent development in the context of drug abuse. Scientists are also now beginning to explore how these new discoveries of neurodevelopment may give us insights about adolescent vulnerability to drug use. This is an important issue given that adolescence is a time of experimentation and novelty seeking.

From a scientific standpoint, the central question that has received the most research attention by scientists is this: “Are adolescents more susceptible to alcohol compared to adults?” For several reasons it is easier for scientists to study the effects of alcohol compared to other drugs, so there is a lot more alcohol research on this topic.

There are four lines of evidence we will review that are relevant to this research question: Are adolescents more susceptible than adults to alcohol?

Implications of Arrested Development:
Drug Abuse Vulnerability

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Research question addressed by scientists:

> "Are adolescents more susceptible than adults to alcohol?"

1. Epidemiological data

One line of evidence to consider in answering this question comes from survey studies.

Drug use starts early and peaks in the teen years

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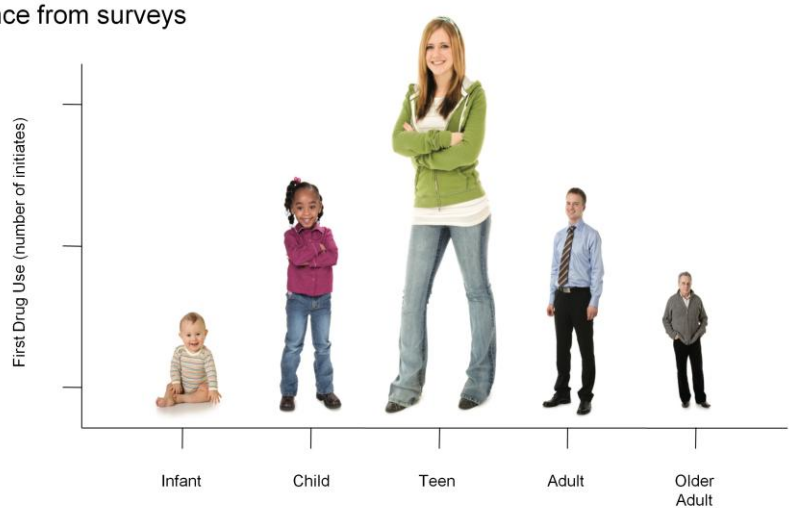
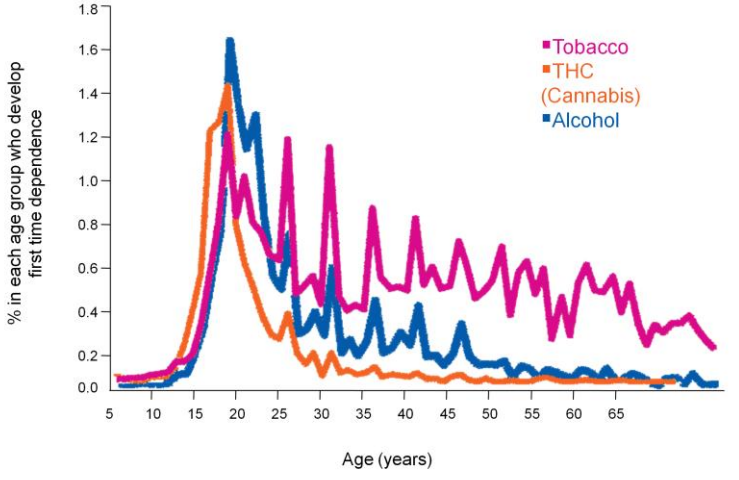
Evidence from surveys



If adolescents are more susceptible to the effects of alcohol, it would be expected that adolescents reveal early susceptibility to developing an alcohol use disorder, and also would show higher rates of alcohol use compared to adults. There are data to support these trends.

Addiction is a Developmental Disease

Starts in Adolescence and Childhood

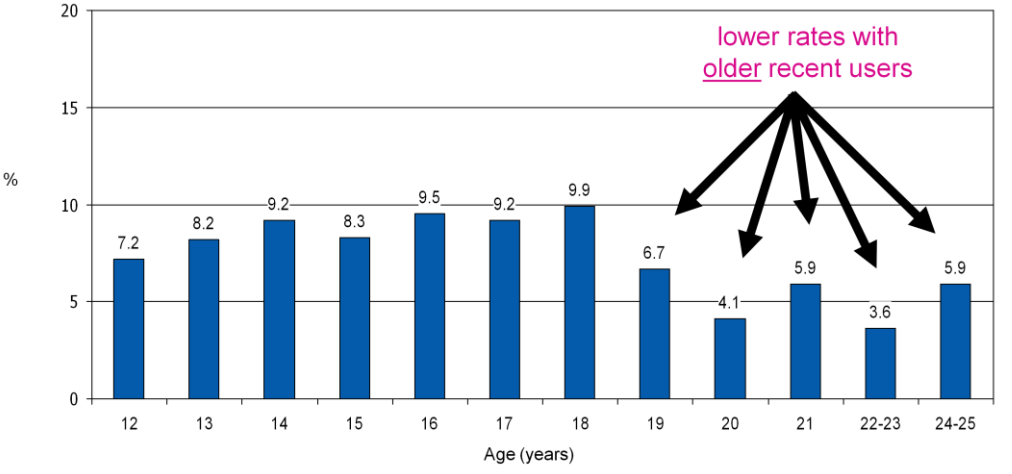


Source: NIAAA National Epidemiologic Survey on Alcohol & Related Conditions, 2003.

In most Westernized countries, the drug that is abused the heaviest during the teenage years is alcohol – with marijuana and tobacco a close second. Here is a graph of data from the United States that shows drug use trends from youth to the elderly years.

The age group that is associated with highest rate of getting drug dependent for the fist time is youth (before the age of 25).

Percentages of Past Year Alcohol Use Disorder Among Those with a Recent Onset (Prior 2 Years) of Alcohol use (*N* = 4058)



Source: Winters & Lee, 2008

Survey data from a national study in the U.S. provides further supporting evidence.

These data show the rates of alcohol abuse or dependence among recent-onset users of alcohol (prior 2 years) by chronological age. Exposure to alcohol is controlled by examining just recent onset users. The findings indicate that there is a general steady increase of the rate of an alcohol use disorder from age 12 to age 18. Then the rate drops rather noticeably at age 19, and stays relatively lower throughout the remaining years into young adulthood. The results support the view that youth, particularly during the teenage years, is a high risk period for developing an alcohol use disorder.

Implications of Arrested Development:
Drug Abuse Vulnerability

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Research question addressed by scientists:

> "Are adolescents more susceptible than adults to alcohol?"

1. Survey data
2. Adolescent rats are less sensitive to the sedative and motor impairment effects of intoxication.

Next we turn to research from laboratory studies. Given that ethical reasons prohibit collecting direct evidence from underage drinkers, the effects of alcohol have been studied using adolescent and adult rates in controlled experiments.

Susceptibility to Alcohol

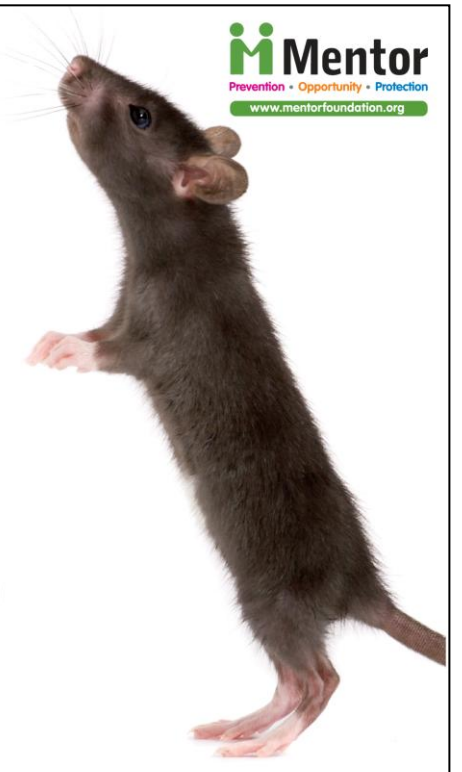
Direct evidence can not be obtained from human adolescents for ethical reasons.

Much of what is known about alcohol susceptibility is from adolescent rat studies.

Comparing adolescent and adult rats, both having no prior exposure to alcohol and matched on temperament….

Adolescent rats are less sensitive to the sedative and motor impairment effects of intoxication. more drinking before "signals to stop"

Source: Spear, 2002



These rat studies have identified two phenomenon that suggest adolescents are more vulnerable to the effects of alcohol compared to adults.

One set of studies conducted by Professor Linda Spear at SUNY at Binghamton in New York indicates that adolescent rats are less sensitive to the effects of intoxication than adult rats. Adolescent rats typically consume two to three times as much alcohol for their body weight as adults. Adolescent humans also show this diminished sensitivity to intoxication; their higher metabolic rates allow them to consume higher amounts of alcohol.

A lower sensitivity to alcohol's effects would be consistent with the observation that young people are capable of drinking large amounts of alcohol before feeling intoxicated.

Implications of Arrested Development:
Drug Abuse Vulnerability

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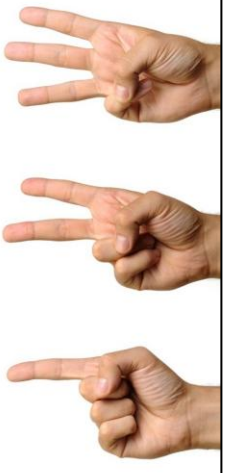
Research question addressed by scientists:

> "Are adolescents more susceptible than adults to alcohol?"

1. Survey data
2. Adolescent rats are less sensitive to the sedative and motor impairment effects of intoxication.
3. Adolescent rats are more sensitive to the social disinhibition effects of alcohol.



Another laboratory study provides the third line of evidence.

Social Disinhibition

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Adolescent rats are more sensitive to the social disinhibition effects of alcohol compared to adults.

These studies suggest that adolescent rats derive greater "social comfort" from intoxication than adult rats.

Source: Spear, 2002

In another series of studies by Dr. Spear and colleagues, adolescent rats demonstrate a greater sensitivity to the social disinhibition that occurs while drinking. That is, compared to adult rats, adolescent rats show behavior consistent with the notion that they experience "greater social benefit" from the effects of intoxication. For example, intoxicated adolescent rats are more inclined to congregate with other rates compared to intoxicated adult rats who show less of this social behavior.

Implications of Arrested Development:
Drug Abuse Vulnerability

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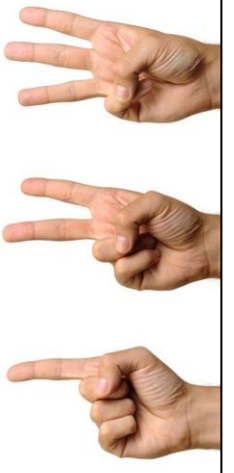
Research question addressed by scientists:

> "Are adolescents more susceptible than adults to alcohol?"

1. Survey data
2. Adolescent rats are less sensitive to the sedative and motor impairment effects of intoxication.
3. Adolescent rats are more sensitive to the social disinhibition effects of alcohol.

2 and 3 may contribute to binge drinking and increased risk to alcohol dependence.



These two general findings from the animal studies by Professor Spear suggest that adolescence is a developmental period during which time alcohol is experienced quite differently compared to how adults handle alcohol. The tendency for youth to have a diminished sensitivity to the negative effects of drinking and yet to have an enhanced sensitivity to the positive effects of alcohol suggests a "recipe" for binge drinking.

Implications of Arrested Development:
Drug Abuse Vulnerability

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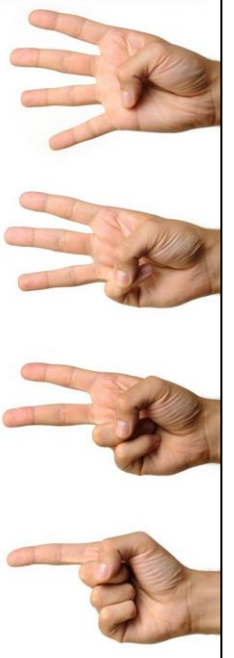
Research question addressed by scientists:

> "Are adolescents more susceptible than adults to alcohol?"

1. Survey data
2. Adolescent rats are less sensitive to the sedative and motor impairment effects of intoxication.
3. Adolescent rats are more sensitive to the social disinhibition effects of alcohol.
4. Alcohol produces greater cognitive disruptions in adolescents.



There now is some scientific evidence suggesting that the developing brain is prone to the deleterious effects of alcohol.

Animal Data: Alcohol's Effects

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When exposed to alcohol, adolescent rats, compared to adult rats, reveal more…

- Disruption in memory
- Impairment of neurotransmission in hippocampus and cortex

Source: Spear, 2002

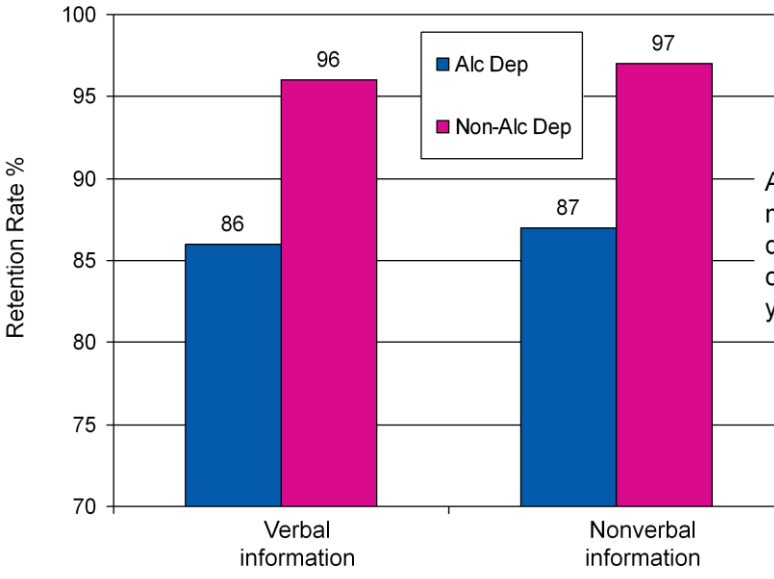
The work from Professor Spear's laboratory suggests that the memory region of the brain – the hippocampus - is particularly sensitive to alcohol, especially during adolescence. Adolescent rats exposed to various amounts of alcohol have significantly more brain damage in their frontal cortex than their adult counterparts. They also show greater damage to their working memory. With long-term use, adolescent rats have shown massive neuronal loss in other regions of the brain - the cerebellum, basal forebrain, and neocortex.

Human Data: Alcohol's Effects

Adolescents with a history of an alcohol use disorder may show deficits in short-term memory.

There are some human data that have confirmed the findings from the animal literature.

Human Data: Alcohol's Effects



An average of 10% less memory in the alcohol dependent youth compared to the healthy youth.

Source: Brown et al., 2000

There are indications that alcohol can negatively impact memory. Dr. Brown and colleagues found that adolescents with a history of alcohol dependence showed an average of 10% less memory on short term verbal and non-verbal tasks compared to a healthy comparison group.

Human Data: Alcohol's Effects

The hippocampus encodes new information into memory.

Adolescents with a history of abusing alcohol may have a smaller hippocampus volume.

MRI: Hippocampal Size

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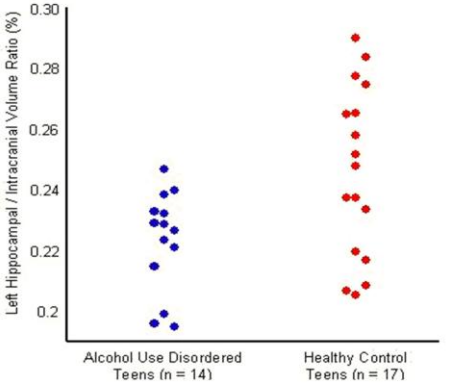
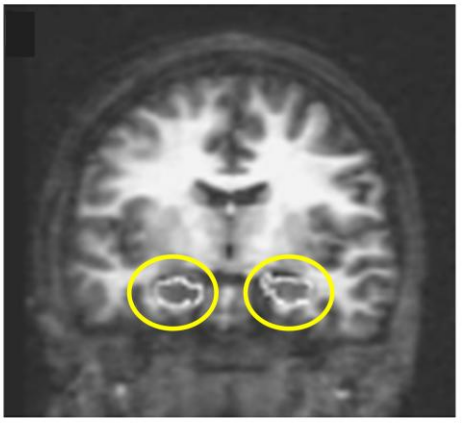
Left hippocampal smaller in AUD (alcohol use disordered) teens compared to healthy teens by about 10%.





Source: Nagel et al., 2005

Professor Susan Tapert and her colleagues studied 14 adolescents (ages 15-17) with a history of alcohol abuse and 17 healthy comparison teenagers. Those with the histories of health drinking had a smaller left hippocampus volume.

Here is the scatter plot of these data. The blue data points represent the left hippocampal size of the adolescents with a prior alcohol use disorder and the red data points are associated with the health comparisons. On average, the left hippocampal size is smaller in the alcohol use disordered group.

Summary

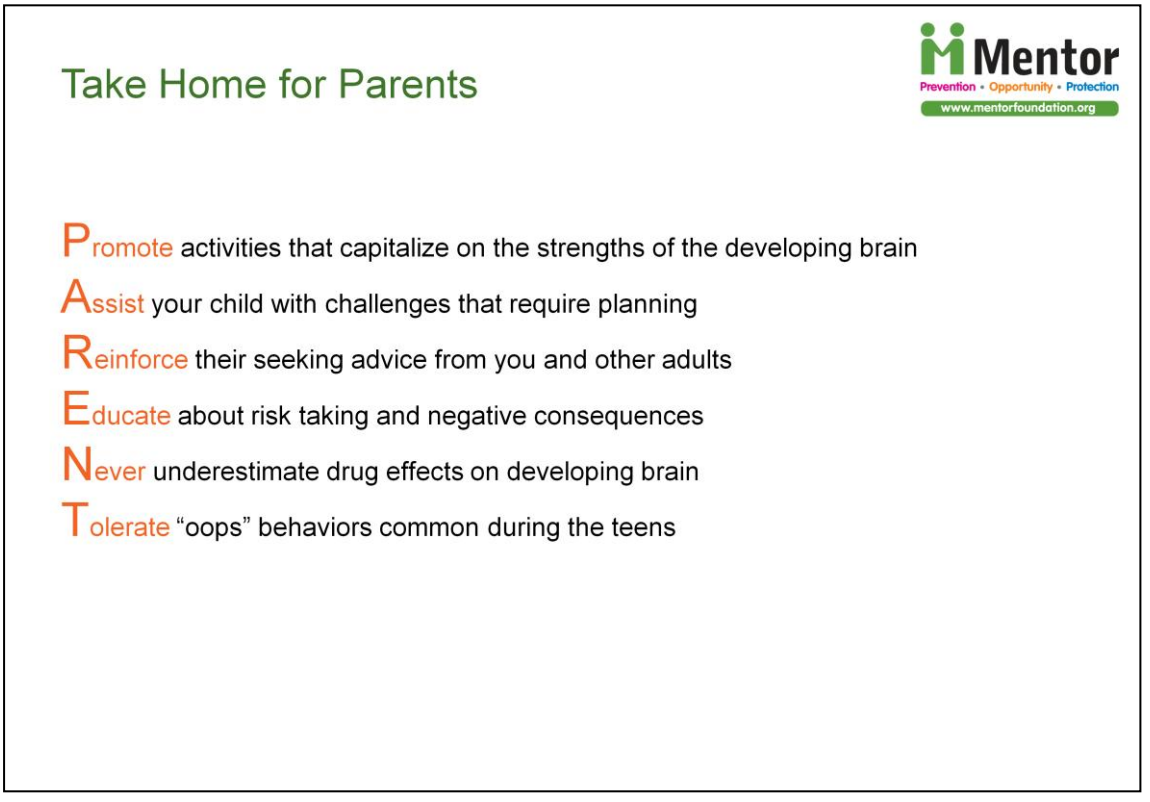
1. Expect impulsivity, poor judgment, emotionality
- "On second thought…" *not* in the repertoire
- Parents must use *their* judgment to protect teens
- Parents must anticipate - teens need help with this
- Less than optimal planning and judgment

2. Drugs, particularly alcohol, have different and more significant effects on teenagers
- Drug experimentation is normal
- *But*… can be dangerous

Lets review the implications of this range of information presented here.

A normal and healthy adolescent can be expected to exhibit some risk-taking, show less than optimal judgment, and have difficulty managing emotions. Adolescents may make decisions that are too often based on how he or she feels rather than on careful and reasoned thinking. Adults play an important role by using their judgment to protect teenagers.

And do not minimize the potential for young people to fall victim to drugs, particularly alcohol. Drug use can be dangerous!



Here are six summary points of this material organized by the mnemonic, PARENT.

(READ EACH LETTER AND SUMMARY STATEMENT)

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Comments or Questions?

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And visit the website of the Mentor Foundation for more drug prevention resources – www.mentorfoundation.org .