



The Addiction and Behavioral Health Newsletter

A publication of JRW Behavioral Health Services

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VOLUME 1, NUMBER 7

Welcome to Volume 1, Number 7 of the Addiction and Behavioral Health Newsletter. In our featured article this month, we provide recent research that strongly suggests a link between early alcohol and Other Drug Use and adult substance use disorders. We will also update our readers on “herbal incense” (e.g., “K2”, “Spice”, and “Red Dragon”). In the newsletter you will also find information regarding current trends in substance use, on-line training announcements, available on-site workshop and in-service topics, regional and national conferences, news from the world of addiction science, and featured links to other resources for the substance dependency treatment and prevention community.

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Early Initiation of Alcohol and Other Drug Use Linked to Lifetime Substance Use Disorders

Common sense tells us that alcohol and other drug (AOD) use by adolescents is a high risk behavior, and this belief has been confirmed by research in a several different areas.

Cutting edge imaging technology has shown that, on balance, the human brain does not reach “maturity” until the age of 22. The last area of the brain to develop fully is the prefrontal cortex (PFC), which has been shown to be involved in a variety of high level functions, including:

- Differentiating between conflicting thoughts
- Identifying the future consequences of current behavior and predicting the likely outcome of such behavior
- Generating behavioral options
- Decision making
- Exerting “impulse control” (the ability to suppress urges that, if not suppressed, could lead to socially-unacceptable and/or unhealthy outcomes)
- Emotional regulation

These functions are critical to decision-making *regarding the use of mood-altering substances*, but are not yet fully developed during adolescence. Ironically, AOD use itself may conflict with the maturation of the PFC; if emotional regulation is accomplished via the strategic use of AOD, this function may not be developed in the PFC. Thus, when psychoactive substances are available to adolescents, the immaturity of the brain (in concert with peer pressure and/or emotional distress) may lead to poor decision-making, including AOD use, which in turn may inhibit the normal development of the PFC*.

Information from two national surveys has also shown, in real life terms, the danger of early AOD use. Using data from the 2001–2002 National Epidemiologic Survey on Alcohol and Related Conditions (NESARC)[†], Dr. Sean McCabe and his colleagues found that of individuals 18 years of age or older who initiated the non-medical use of prescription drugs at age 13 or younger, 42% met the diagnostic criteria for prescription drug abuse, while only 17% of those who began use at 21 or older did so (Figure 1). With regard to prescription drug dependence, 25% of those who initiated their use at 13 or younger met the criteria for this substance use disorder compared to only 7% of those who began use at age 21 or older (Figure 1). Of interest, the specific drug that is the “gateway” substance is not always the drug for which a substance use disorder develops. Persons who originally used prescription sedatives were less likely to develop sedative abuse or dependency (43% of the total) than tranquilizer (75%), opioids[‡] (72%) or stimulants (70%) (Figure 2).

* This is the so-called “use it or lose it” phenomenon of brain development

[†] A national survey conducted by the National Institute on Alcohol Abuse and Alcoholism

[‡] The opioids include substances such as Vicodin, Methadone and OxyContin

Figure 1: Estimated Prevalence of Lifetime Drug Abuse and Dependence, by Age at First Non-medical Use of Prescription Drugs

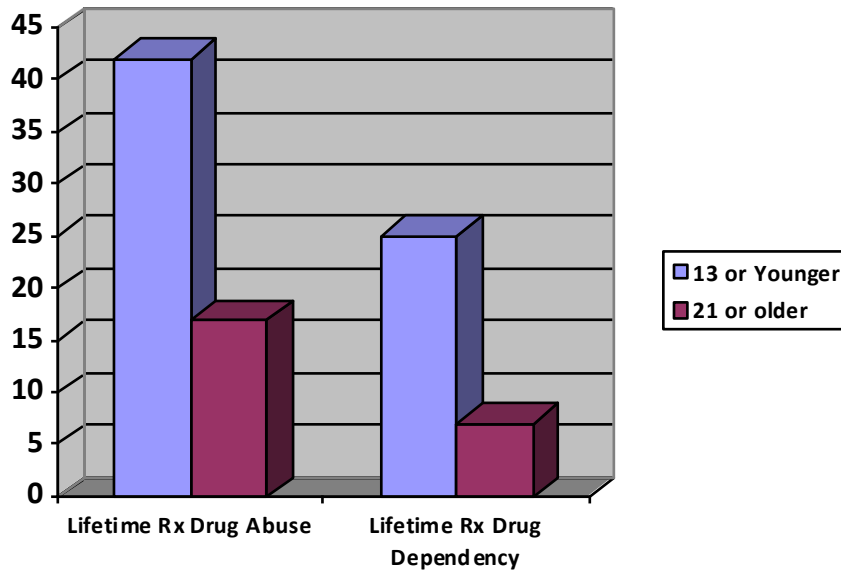
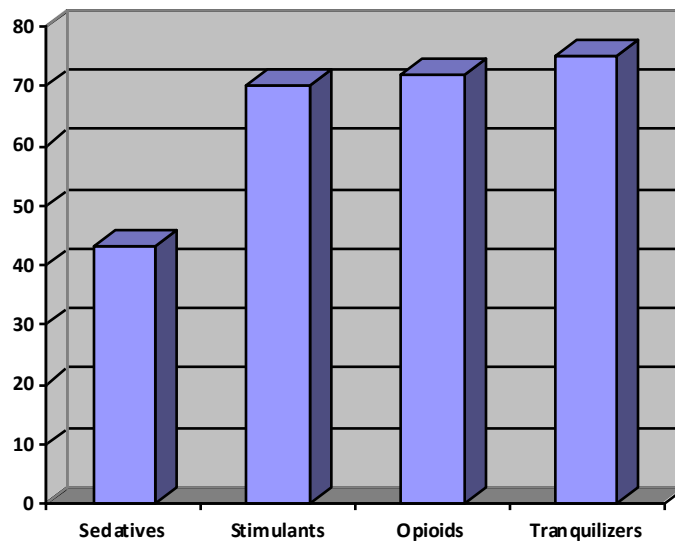
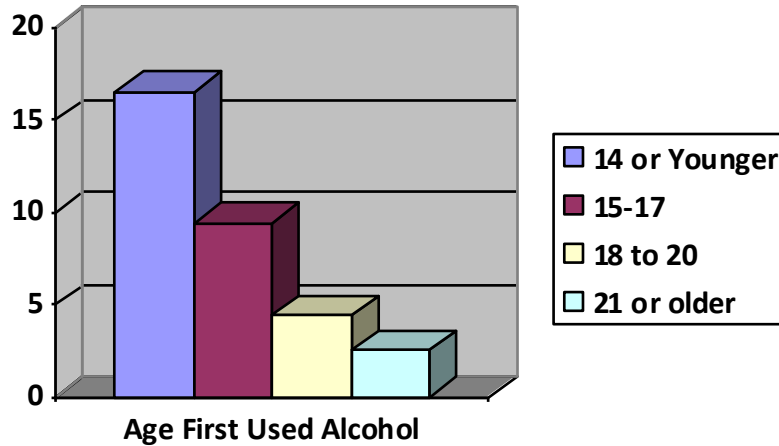


Figure 2: Substance Use Disorders (by Percentage) Among Persons who Began Rx Drug Use at 13 years-old or Younger



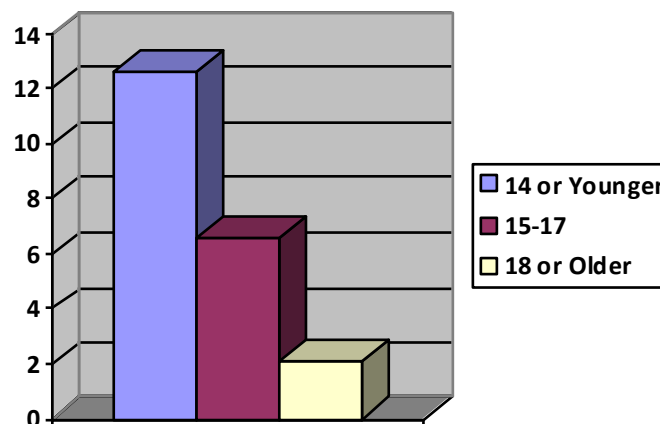
Recent research has also found that early alcohol use can increase the likelihood of future alcohol abuse and/or dependence. According to data from data from the National Survey on Drug Use and Health (NHDUH), individuals who first used alcohol at or before the age of 14 were somewhat less than twice as likely to develop an alcohol abuse or dependence problem than those who first used between 15 and 17, four times as likely as those who first initiated alcohol use between 15 and 17, and more than six times more likely as those whose drinking began after the age of 21 (Figure 3).

**Figure 3:
Percentage of Adults (Ages 21 or Older)
Who Abused or Were Dependent on
Alcohol in the Past Year, by Age of First
Alcohol Use, 2009**



Finally, additional data from NHSDUH shows that the early use of marijuana increases the risk of developing an illicit drug abuse or dependence disorder. 12.6% of survey respondents 18 years of age or older who first used marijuana at age 14 or younger were found to have a substance use disorder at some point in their lives. This percentage dropped to 6.6% for those whose marijuana use first occurred between 15 and 17 years of age and 2.1% for those initiation to the drug occurred at 21 or older (Figure 4).

**Percentage of Adults (18+) Who Abused or
Were Dependent on Illicit Drugs in the Past
Year by Age of First Use Marijuana Use**



This information does not provide any information concerning the severity of the substance use disorders that some adult respondents developed. Factors that could reflect severity include the number of diagnostic criteria that these

individuals endorsed, such as recurrent use in dangerous situations, persistent or unsuccessful efforts to stop or cut down on substance use, the reduction or abandonment of important social, occupational or recreational activities, tolerance or the appearance of withdrawal symptoms. However, the data strongly supports the concept that the earlier substance use first occurs, the more likely that substance use disorders occur in adulthood. For treatment providers, this may mean that clients who initiated their AOD use earlier in life may require longer treatment or a higher level of care. More significantly, the information presented here reinforces the critical role of preventionists in helping younger persons from avoid initiating the use of AOD, including the non-medical use of prescription drugs. It also suggests that if AOD use cannot be entirely prevented, delaying its onset can reduce the risk of adult substance use disorders.

References

Substance Abuse and Mental Health Services Administration (2010). Results from the 2009 National Survey on Drug Use and Health. Retrieved October 21, 2010 from <http://oas.samhsa.gov/WebOnly.htm#NSDUHtabs>.

McCabe, S.E., West, B.T., Morales, M., Cranford, J.A., and Boyd, C.J. (2007). Does Early Onset of Non-Medical Use of Prescription Drugs Predict Subsequent Prescription Drug Abuse and Dependence? Results from a National Study, *Addiction* 102(12): 1920-1930.

Herbal Incense Update

Since our last issue of the *Addiction and Behavioral Newsletter*, we have collected additional information concerning the "herbal incense" products sold as "K2", "Black Mamba", "Spice" and other brand names[§]. Initial reports (from the media as well as users themselves) indicated that many-if not the majority of-users experienced unpleasant and sometimes physically dangerous effects. However, these effects seem to vary considerably depending on the particular brand of herbal incense being smoked. Perhaps the best known brand is "K2", of which there are several varieties that reportedly differ in potency. A package of "K2 Summit" obtained at a "smoke shop" in Chicago had an unpleasant odor and, according to several users, a strong chemical taste, perhaps due to the carrier used to apply the synthetic cannabinoids that are responsible for the psychoactive effects of "K2". Certain other herbal incense brands have a less unpleasant odor and taste, and vary from "K2" in their effects. The bottom line: virtually no one knows how and where herbal incense is made, what cannabinoids they contain, what other substances are present, how potent they are and what-if any-physical and/or psychological dangers are associated with their use. In addition, "Knock-off" brands of "K2" (and perhaps other herbal incense products) have appeared in various locations across the U.S. Regardless of the type of herbal incense involved, anecdotal reports concerning their effects cannot be considered reliable because the involvement of other substances (or even adulterated herbal incense products) is seldom if ever ruled out. Perhaps of greatest significance is the fact that no papers addressing the effect of herbal incense on humans has ever been published in the scientific literature, and, in fact, no research has ever been conducted using human subjects.

On January 1, 2011, the State of Illinois (our home state) will ban the sale, distribution and possession of products containing JWH-018 and JWH-073. However, Michigan has also banned HU-210, CP47, 497, JWH-JWH-015, JWH-200, and JWH-250. It appears that these additional cannabinoids will not become controlled substances in Illinois at the beginning of the New Year. Will manufacturers or suppliers simply switch to one or more of the (apparently) legal cannabinoids? Only time will tell.

[§] See issues V1 Numbers 3 & 6 for earlier reports on herbal incense

On-line Training Announcements

Free IAODAPCA-Approved Courses!

We are still offering a free IAODAPCA-approved course entitled "DUI: The Effects of Drugs Other than Alcohol". Now we've added a free webinar. See the details below.

To register, go to www.randallwebber.com
and click on "Free Courses"

We are also offering a free webinar*, "Herbal Incense"
on Thursday, November 18 and Saturday November 20, 2010

To register for free courses, go to www.randallwebber.com
and click on "Free Courses". Please register for only one course at a time.

* To participate in a webinar, all you need is an Internet-connected computer and a pair of speakers or earphones/headphones.

* **For additional information or to register for any of our courses or webinars, visit our website at: <http://www.randallwebber.com>**

Contact us for information on group, series and multi-workshop discounts

Webinars**

Special Populations Series

Preparing for the Future: Treating Substance Dependent Baby Boomers and other Older Clients

November 22, 2010
10:00 A.M.-12:15 P.M.
2 IAODAPCA CEUs
\$20

Childhood Trauma and Adolescent Substance Abuse

November 30, 2010
1:00-3:00 P.M.
OR
December 4, 2010
10:00 A.M.-12:15 P.M.
2 IAODAPCA CEUs
\$20

Treatment of Heroin and Other Opiates Dependency-A Four Part Series

Module I: Introduction to the Opiate Substances

December 8, 2010
10:00 A.M.-12:15 P.M.
OR
2:00-4:15 P.M.
2 IAODAPCA CEUs
\$20

Module II: Psychosocial Strategies

December 15, 2010
10:00 A.M.-12:15 P.M.
OR
2:00-4:15 P.M.
2 IAODAPCA CEUs
\$20

Module III: Medication-Assisted Treatment with Methadone

December 22, 2010
10:00 A.M.-12:15 P.M.
OR
2:00-4:15 P.M.
2 IAODAPCA CEUs
\$20

Module IV: Medication-Assisted Treatment with Buprenorphine and Naltrexone

December 29, 2010
10:00 A.M.-12:15 P.M.
OR
2:00-4:15 P.M.
2 IAODAPCA CEUs
\$20

Home Study Courses

- ◆ Street Drug Pharmacology (8 IAODAPCA CEUs)
- ◆ Advanced Street Drug Pharmacology (8 IAODAPCA CEUs)
- ◆ Pharmacology and Physiology of Alcohol and Alcoholism
(6 IAODAPCA CEUs)

Other On-Site Workshops Available from JRW Behavioral Health Services

This is a Partial List of Our Individualized Workshops, Seminars and In-Services

- ◆ Childhood Trauma and Adolescent Substance Abuse
- ◆ Preparing for the Future: Treating Baby Boomers and Other Older Americans with Substance Disorder Problems
- ◆ Street Drug Pharmacology
- ◆ Advanced Street Drug Pharmacology
- ◆ The Physiology and Pharmacology of Alcohol and Alcohol Dependency
- ◆ The Neuroscience of Addiction
- ◆ Using Addiction Science to Guide Treatment Planning
- ◆ Medication Assisted Treatment of:
 - Heroin and Prescription Opiates
 - Alcohol
- ◆ Understanding and Treating Dependence on:
 - Methamphetamine
 - Heroin and Prescription Opiates
 - Cocaine
 - Cannabis
- ◆ Cognitive Behavioral Therapy in the Treatment of Substance Use Disorders
- ◆ Criminal Thinking and Substance Dependency Treatment
- ◆ Recovery and Re-Entry for Criminal Justice Offenders

**For information on our workshops, in-service presentations
and consultation services, call (847) 563-8900**

OR

Go to www.randallwebber.com and click on "Contact Us"

Upcoming National and Regional Conferences

2010 National Alliance for Drug Endangered Children Conference

November 9 - 11, 2010

Dallas, TX

<http://www.nadec-conf.org/>

11th Annual NCRG Conference on Gambling and Addiction

Redefining Diagnosis, treatment, research and responsible gaming for the 21st Century

November 14-15, 2010

Mandalay Bay Resort & Casino, Las Vegas, Nevada

Pennsylvania Association of Drug Court Professionals (PADCP)

November 14-16, 2010

State College, PA

<http://www.padcp.com/2010-padcp-conference.html>

2011 Alcohol and Other Drug Abuse Prevention & Intervention Conference

January 13 - 15, 2011

Location TBA

<http://www.naspa.org/programs/aapc/default.cfm>

.2011 APPLE Conferences

January 21-23, 2011

Charlottesville, Virginia

January 28-30, 2011

Austin, Texas

<http://www.virginia.edu/case/apple/>

The 4th Annual Conference on Fetal Alcohol Spectrum Disorder

March 2-5, 2011

Vancouver, British Columbia

<http://www.interprofessional.ubc.ca/Brochures/FASD2011AdvanceNotice.pdf>

American Society of Addiction Medicine

42nd Annual Medical-Scientific Conference

April 14-17, 2011

Washington, DC.

<http://www.asam.org/AnnualMeeting.html>

Would you like to see your conference listed free-of-charge in this newsletter?

Contact us at <http://www.randallwebber.com>

News from the World of Addiction Science

Drug Harm Analysis

Recently, The Independent Scientific Committee on Drugs (United Kingdom) met to score 20 psychoactive drugs on 16 criteria: nine related to the harms that a drug produces in the individual and seven to the harms to others. Scores were based on a maximum of 100 points, with the criteria weighted to indicate their relative importance. It was determined that heroin, crack cocaine, and methamphetamine were the most harmful drugs to individuals (Figure 1), while alcohol, heroin, and crack cocaine were the most harmful to others (Figure 2). Overall, alcohol was the most harmful drug, with heroin and crack cocaine in second and third places (Figure 3).

The authors noted that their findings correlate poorly with the present United Kingdom drug classification, which are based on criteria other than harm.

Table 1: Drugs Most Harmful to Individuals

	Harm Score
Drug	
Crack Cocaine	37
Heroin	34
Methamphetamine	32

Table 2: Drugs Most Harmful to Others

	Harm Score
Drug	
Alcohol	46
Heroin	21
Crack Cocaine	17

Table 3: Drugs Associated with Most Overall Harm

	Harm Score
Drug	
Alcohol	72
Heroin	55
Crack Cocaine	54

Source: Nutt, D.J., King, L.A., Phillips, L.D. (2010), The Lancet, (36)9752: 1558-1565

Why are men more susceptible to alcoholism?

Past research has shown that the incidence of alcohol use disorders is twice as high in men as it is in women. A recent study sheds light on why this may be so.

Male and female college students were screened for alcohol use and dependency. On 2 separate days, a control group was given a mixture of water and a trace amount of alcohol. The experimental group was given water mixed with a larger amount of alcohol. Immediately following this self-administration, a specialized type of positron emission tomography (PET) was used to determine the level of the neurotransmitter dopamine in the ventral striatum, an important structure in the brain's "reward pathway". The members of the control group showed no appreciable change in dopamine levels, while the experimental group did. More importantly, male subjects showed a significantly higher increase in dopamine levels than females that correlated with an increase in the subjective positive effects of alcohol intoxication. Further, the heightened levels of dopamine required more alcohol to achieve on the second day of administration.

The study researchers concluded that the enhanced response to alcohol among males explains, at least in part, the higher incidence of alcohol use disorders in men versus women. In addition, the increased amounts of alcohol necessary to raise these enhanced dopamine levels leads to tolerance and the development of more severe types of alcohol dependence.

Source: Urban, N.B.L., Kegeles, L.S., Slifstein, M., Xu, X., Martinez, D. et al. (2010). Sex Differences in Striatal Dopamine Release in Young Adults After Oral Alcohol Challenge: A Positron Emission Tomography Imaging Study With [¹¹C]Raclopride. Biological Psychiatry, 68(8): 689-696.

The successful treatment of substance-dependent individuals results in lower medical costs for family members

Dr. Constance Weisner of the University of California Department of Psychiatry partnered with colleagues at the Kaiser Permanente Medical Care Program to determine whether the medical costs for families of substance dependent individuals changed as a result of the individual's treatment for their alcohol or other drug problem.

After measuring post-treatment abstinence at the end of one year, Dr. Weisner followed both abstinent and non-abstinent substance dependency treatment clients and their families over a five year period in order to track changes in the medical costs for the family members. She also tracked these costs among a control group.

In years two through five, the medical costs for the families of abstinent clients were similar to those of the control group families. The costs among the family members of non-abstinent patients were higher than those of the other two groups and continued to escalate though year five.

Those of us in the substance use disorder treatment field are often asked, "Does treatment work?" Of course, that depends on what outcome is being measured. Dr. Weisner's study shows that one beneficial outcome associated with treatment and on-going abstinence may be a significant reduction in the medical costs of family members. This outcome may serve as an

indication of the improving health of these individuals.

Source: Weisner, C; Parthasarathy, S; Moore, C & Mertens, JR (2010). Individuals receiving addiction treatment: are medical costs of their family members reduced? Addiction, 105(7): 1226-1234.

Do alcohol dependency and sugar intake problems have similar causes?

For years, both researchers and treatment professionals have speculated that alcohol and other drug use problems may be related to "process addictions" such as gambling and eating disorders. Now research has shown that there may be both neurochemical and genetic similarities between alcohol use disorders and "sugar addiction".

Research study has shown that the consumption of food or drinks with high sugar content primes the release of both endorphins and dopamine within the nucleus accumbens (an important structure in the human "reward circuit"). Many psychoactive drugs produce their reinforcing effects in the same manner, and sugar-related craving, tolerance, withdrawal and sensitization have been documented in both human and animal studies.

In addition, children of alcoholics (particularly fathers) are at greater risk to have a strong preference for sugar-rich foods and drinks. Common genetic markers associated between alcohol dependence, bulimia, and obesity, such as the A1 allele gene and the dopamine 2 receptor gene, provide additional support to this theory.

Source: Fortuna, J.L. (2010). Sweet Preference, Sugar Addiction and the Familial History of Alcohol Dependence: Shared Neural Pathways and Genes. Journal of Psychoactive Drugs, 42(2).

**Read more on these articles at www.randallwebber.com.
Click on "Addiction Science News".**

Internet Links

Each month, we provide a list of Internet links in addition to those important to readers from Illinois, our home state. Here are this month's links:

LOS SITIOS WEB DE LA LENGUA ESPAÑOLA (Spanish Language Sites)

LaAntiDroga <http://laantidroga.com>

Instituto Nacional en la Drogadicción/Sección de la Lengua Española
<http://www.drugabuse.gov/nidaespanol.html>

NATIONAL SUBSTANCE ABUSE TREATMENT LOCATOR

Substance Abuse and Mental Health Services Administration Treatment Locator
<http://findtreatment.samhsa.gov/>

PROFESSIONAL ASSOCIATIONS AND CERTIFICATION BODIES

Illinois Alcoholism and Other Drug Abuse Professionals Certification Association
<http://www.iaodapca.org>

Illinois Alcoholism and Drug Dependence Association <http://www.iadda.org>

NAADAC-The Association for Addiction Professionals <http://www.naadac.org>

Employee Assistance Society of North American <http://www.easna.org/>

RECOVERY MANAGEMENT RESOURCES

<http://www.bhrm.org/>

<http://www.attcnetwork.org/learn/topics/rosc/docs/RecMgmt.pdf>

SCIENTIFIC JOURNALS

Addiction <http://www.addictionjournal.org/>

Alcohol

<http://www.elsevier.com/wps/find/journaldescription.agents/525453/description#description>

Alcohol and Alcoholism <http://alcalc.oxfordjournals.org/>

Alcohol, Research and Health

<http://www.niaaa.nih.gov/Publications/AlcoholResearch/Pages/default.aspx>

Journal of Psychoactive Drugs <http://www.journalofpsychoactivedrugs.com/>

Journal of Studies on Alcohol and Drugs <http://www.jsad.com/>

Journal of Substance Abuse Treatment

http://www.elsevier.com/wps/find/journaldescription.cws_home/525475/description#description

STATE AND FEDERAL AGENCIES

Center on Drug Abuse Treatment <http://csat.samhsa.gov>

Center on Drug Abuse Prevention <http://prevention.samhsa.gov>

Illinois Department of Human Services, Division of Alcoholism and Substance Abuse
www.dhs.dasa.il.us.gov

Drug Enforcement Administration <http://www.justice.gov/dea/index.htm>

National Institute on Alcohol and Alcoholism <http://www.niaaa.nih.gov>

National Institute on Drug Abuse <http://drugabuse.gov/nidahome.html>

SUBSTANCE ABUSE AND DEPENDENCE PREVENTION PROGRAMS

Prevention First <http://www.prevention.org>

Mother Against Drunk Driving <http://www.madd.org>

**To Find More Links to Substance Use Disorder Resources, Visit Us at
www.randallwebber.com and Click on "Links"**

