**Blackouts and Poisonings: Troubling Trends on Our Radar**

from the NATIONAL ADVISORY COUNCIL ON ALCOHOL ABUSE AND ALCOHOLISM September 19–20, 2012

Retrieved from: <http://www.niaaa.nih.gov/about-niaaa/advisory-council/minutes-september-2012>

**Note:** This is an excerpt from the minutes of the 131st Meeting of the National Advisory Council on Alcohol Abuse and Alcoholism (NIAAA), Wednesday, September 19, 2012 to Thursday, September 20, 2012

**Blackouts and Poisonings: Troubling Trends on Our Radar**

Dr. Aaron White, Division of Epidemiology and Prevention Research, NIAAA, explained that NIAAA places great emphasis on underage and college drinking. Young people drink less often but more heavily than adults. Studies show, for example, that drinking among persons ages12–20 averages around the binge threshold—four drinks for a woman and five for a man within 2 hours—and once young people cross the binge threshold, they often drink much more. Heavy drinking often leads to injuries, sexual assaults, vandalism, violence, unprotected sex, and other consequences, including alcohol-induced amnesia and emergency department visits and hospitalizations for alcohol overdoses. As blood alcohol concentration (BAC) rises, impairment increases in encoding new information about facts and events in one’s life into long-term memory storage, often accompanied by poor decision making, impaired impulse control, and other brain dysfunction.

Erroneous assumptions based on early research that focused on alcoholics led to the belief that blackouts occurred only in alcoholics. Recent studies suggest that blackouts are frequent and common, particularly among young people. In 2002 Dr. White found that about half of 800 students surveyed who ever drunk alcohol had reported having experienced a blackout, and 40% who had drunk in the previous year had a blackout. A later study found that during the summer after high school graduation, 12% of students surveyed had had a blackout in the previous 2 weeks.

People who do not remember what happened must ask others to tell them. A small survey of college students who had blackouts revealed the following adverse events: insulting someone, spending money, sexual activity, arguing fighting, damaging property, unprotected sex, and unwanted sex. Numbers of lifetime blackouts among college students correlated significantly with reduced grade point average, and as amount of drinking in high school rose, age of drinking onset decreased. Recent research by Mundt and colleagues shows that having had blackouts increases the odds of injury in an alcohol-related event.

BAC influences memory: At BAC of about 0.22%, an individual has an even chance of fragmentary or complete blackout. Studies show that some people seem to be predisposed to alcohol-induced memory impairments and that genetics also play a role. Fast-rising BAC due to drinking quickly or drinking on an empty stomach represents a key scenario for blackout. Not yet known are what transpires during blackouts, including sexual assaults and other crimes, and what might be their legal consequences. While males typically are indifferent to blackouts, the episodes frighten females, who then may cut down on drinking. It is possible that these circumstances offer opportunities for brief motivational interventions.

With binge drinking, BAC may rise to the point of overdose or poisoning; a toxic or deadly dose of alcohol is not much higher than a moderately intoxicating dose. DAWN data for alcohol-involved emergency room (ER) visits offer insight into medical treatment among young people for overdoses and poisoning. Among 12–20 year olds in 2009, 190,000 visited the ER for alcohol-related problems. Dr. White has tapped data from the Nationwide Emergency Department Sample (NEDS) and National Inpatient Sample (NIS) to describe how common and how costly is excessive alcohol consumption as measured by ER and hospital visits for accidental overdose or alcohol poisoning. In 2009 persons age 12 and over made 2.3 million ER visits where excessive consumption played a role, and 877,000 were hospitalized, at a cost of $32 billion; for alcohol poisoning, this group made 50,000 ER visits and 58,000 were hospitalized. Young people ages 18–24 made 270,000 ER visits and 58,000 were hospitalized. From 1999 to 2008, the number of 18 to 24 year olds hospitalized for an alcohol overdose–related event increased by 25%, with the largest increase in hospitalization for overdose by combined alcohol and other drugs. According to a CDC WONDER dataset, more than 1,000 people age18–24 died in 2009 of alcohol overdoses, 927 of them by alcohol poisoning—likely a significant underestimation. Although college amnesty programs permit friends to get help for others, the number of cases that do not result in medical care is unknown. It is also not possible to determine prevalence among college students, although military identifiers may be present in datasets. Not much is known to date about other drug involvement or impact on subsequent drinking.

Dr. White pointed out that young people’s drinking patterns generate high blood alcohol levels with potential for serious consequences. Amnesia due to acute consumption is more common than previously thought, and hospitalization for alcohol overdoses is rising among young people. More data are needed about blackouts and overdoses, as well as to identify opportunities for prevention.

**Discussion.** Responding to a question from Dr. Warren, Dr. White acknowledged the potential for underestimating frequency of blackouts. Most people learn what had transpired from friends who were with them and then they incorporate that information into their narrative. Dr. de la Monte inquired whether blackout is a good defense in law for serious crimes; Dr. White stated that he knew of no case in which blackout was a good defense. Dr. White responded to Dr. Crews’s questions that no long-term follow-up studies have been conducted with students who reported more than four blackouts and that while most studies have enlisted college students as subjects, blackouts are common also in the general population. Ms. Fleury observed that Dr. White’s information would be complementary to parent-education efforts. Dr. White stated that as number of blackouts rises, age of onset declines, but causation is unknown. Dr. White pointed out that young people today get the message about blackouts from popular songs and movies.

Dr. Krystal stated that some neurosignatures add information about possible strategies to study this issue rigorously. He suggested determining whether a momentary circuit dysfunction is associated with blackouts or whether it represents something else. Benzodiazepines also induce blackouts. In response to Dr. Ehlers’s question about a relationship between blackouts and memory function, Dr. White stated that memory function typically is normal but may be compromised with alcohol ingestion. He shared his hypothesis that people who black out more may be more sensitive than others to small doses of alcohol on memory. A baseline controlled memory study by Wetherill and Fromme showed no difference between blackout and non-blackout groups, but the assessment may not have been sufficiently rigorous to distinguish between them. Dr. Ehlers speculated that special memory might be more sensitive.