

## ALCOHOL & OTHER DRUG USE BY WOMEN

### Alcohol

Alcohol can impair the functions of the hormone-releasing glands and of the target tissues, thereby causing serious medical consequences. For hormones to function properly, their amount and the timing of their release must be finely coordinated, and the target tissues must be able to respond to them accurately. Hormones control four major areas of body function: production, utilization, and storage of energy; reproduction, maintenance of the internal environment (e.g., blood pressure and bone mass), and growth and development.

#### By interfering with hormone actions, alcohol can:

- Alter blood sugar levels and exacerbate or cause diabetes. Hormones help to maintain a constant concentration of glucose in the blood. This is especially important for the brain because it cannot make or store glucose but depends on glucose supplied by the blood. Even brief periods of low glucose levels (hypoglycemia) can cause brain damage.

Two hormones secreted by the pancreas and regulate blood glucose levels are insulin and glucagon. Insulin lowers glucose concentration in the blood; glucagons raises it. Because prevention of hypoglycemia is vital for the body, several hormones from the adrenal glands and pituitary back up glucagons function. Alcohol consumption interferes with all three glucose sources and with the actions of the regulatory hormones. Chronic heavy drinkers often have insufficient dietary intake of glucose. Without eating, glycogen stores are exhausted in a few hours. Also, the body's glucose production is inhibited while alcohol is being metabolized. The combination of these effects can cause severe hypoglycemia 6 – 36 hours after binge-drinking.

Even in well-nourished people, alcohol can disturb blood sugar levels. Alcohol consumption can be especially harmful in people with a predisposition to hypoglycemia, such as patients who are being treated for diabetes.

- Impair reproductive functions. Women can have hormonal deficiencies, sexual dysfunction, and infertility. In prepausal women chronic heavy drinking can cause cessation of menstruation, irregular menstrual cycles, menstrual cycles without ovulation, early menopause, and increased risk of spontaneous abortions. These dysfunctions can be caused by alcohol's interfering directly with hormonal regulation or indirectly through other disorders with alcohol abuse, such as liver disease, pancreatic disease, malnutrition, or fetal abnormalities.

Although most of these reproductive problems were found in alcoholic women, some were observed in women classified as social drinkers, who drank about three drinks per day during a 3 week study. A significant number of these women had abnormal menstrual cycles and a delay or lack of ovulation.

- Interfere with calcium metabolism and bone structure, increasing the risk of osteoporosis and cardiovascular disease. Acute alcohol consumption can lead to a transient PTH deficiency and increased urinary calcium excretion, resulting in loss of calcium. Chronic heavy drinking can disturb vitamin D metabolism, resulting in inadequate absorption of dietary calcium; in alcoholics, the risk of osteoporosis is increased. Because many falls are related to alcohol use, adverse alcohol effects on bone metabolism pose a serious health problem.<sup>1</sup>

(over)

## Other Drugs

Drugs other than alcohol can include tobacco, cannabis (Marijuana, tetrahydrocannabinol or THC, hashish), inhalants (glue, paint, & other volatile solvents), hallucinogens (LSD, mescaline, peyote, amphetamine variants, phencyclidines), stimulants (cocaine, amphetamines, MDA or ecstasy), and narcotics (heroin, morphine, opium,) steroids, and prescription drugs used illegally.<sup>2</sup>

- Women with substance use problems often have fewer resources (e.g., employment, education, and income) than men, are more likely to be living with a partner with a substance use problem, and are more likely than men to have responsibility for the care of dependent children.<sup>3</sup>
- In 2003, 70.1 million (63.4%) women aged 18 or older used alcohol during the past year, and an estimated 12.5 million (11.3%) used an illicit drug during the past year.<sup>3</sup>
- Approximately 6.5 million (5.9%) women aged 18 or older met criteria for abuse of or dependence on alcohol or an illicit drug (Figure 1). Of these, an estimated 5.2 million (4.7%) abused or were dependent on alcohol, and 2 million (1.8%) abused or were dependent on an illicit drug.<sup>3</sup>
- The rate of substance abuse or dependence among women aged 18 or older decreased with age. An estimated 15.7% of women aged 18 to 25 abused or were dependent on alcohol or an illicit drug in the past year compared with 8.9% of women aged 26 to 34, 5.4% of women aged 35 to 49, and 1.5% of those aged 50 or older.<sup>3</sup>
- Rates of abuse of or dependence on alcohol or illicit drugs among women aged 18 or older were highest among American Indians or Alaska Natives (19.9%), followed by whites (6.3%), blacks (4.5%), Hispanics (4.4%), and Asians (3.4%). Among American Indian or Alaska Native women aged 18 or older, the estimated rate of alcohol or illicit drug abuse or dependence was higher in 2003 (19.9%) than in 2002 (10.2%). There was little difference between the 2002 and 2003 rates of abuse or dependence among women aged 18 or older in the other racial or ethnic groups.<sup>3</sup>
- In 2003, 4.1% of women aged 18 to 49 who were married had abused or were dependent on alcohol or an illicit drug compared with 10.7% of women who were divorced or separated and 15.9% who were never married.<sup>3</sup>
- Women aged 18 to 49 who reported not living with any children under age 18 were more likely to have abused or been dependent on a substance (alcohol or an illicit drug) than women who reported living with one or more children (12.9 vs. 5.5%).<sup>3</sup>

1 NIAAA (*National Institute on Alcohol Abuse & Alcoholism*) 4/06

2 *Drugs of Abuse, from The U.S. Dept. of Justice, DEA Administration, the Diagnostic & Statistical Manual of Mental Disorders, 3<sup>rd</sup> Edition Revised; & Drugs in Modern Society*

3 *The National Survey on Drug Use & Health (The NSDUH Report)*, 3/17/06

4 *Journeyworks Publishing, 2001*