

FIGURE 126-1 Current, binge, and heavy alcohol use among persons aged 12 or older, by race and ethnicity, according to the National Survey on Drug Use and Health (2011). Binge drinking is defined as having five or more drinks on a single occasion. Heavy alcohol use is defined as having had five or more drinks on the same occasion on each of five or more days in the previous 30 days. (From Substance Abuse and Mental Health Services Administration: Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-44, HHS Publication No. [SMA] 12-4713, Rockville, Md., 2012, Substance Abuse and Mental Health Services Administration.)

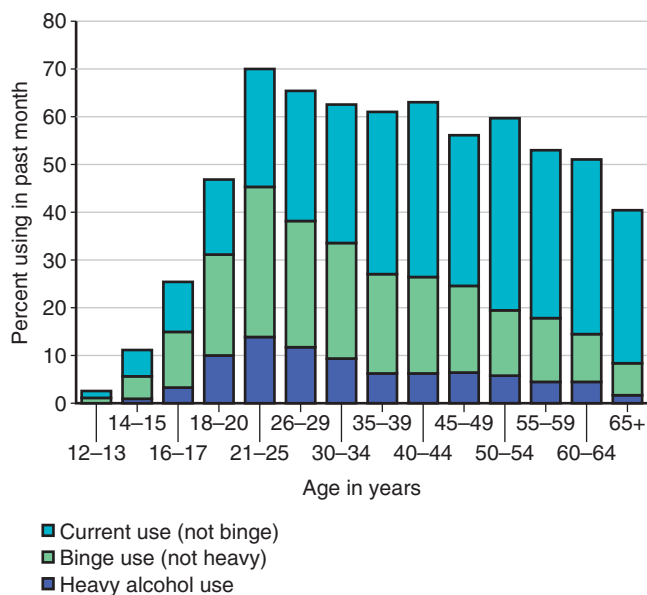


FIGURE 126-2 Current, binge, and heavy alcohol use among persons aged 12 or older, by age, according to the National Survey on Drug Use and Health (2007). Binge drinking is defined as having five or more drinks on a single occasion. Heavy alcohol use is defined as having had five or more drinks on the same occasion on each of five or more days in the previous 30 days. (From Substance Abuse and Mental Health Services Administration: Results from the 2011 National Survey on Drug Use and Health: Summary of National Findings, NSDUH Series H-44, HHS Publication No. [SMA] 12-4713, Rockville, Md., 2012, Substance Abuse and Mental Health Services Administration.)

These enzymatic variations also influence a person's risk of developing an alcohol use disorder. The mechanism is thought to involve elevated acetaldehyde levels resulting from a more rapid conversion of ethanol (in cases of alcohol dehydrogenase variants with higher enzymatic activity) or slower elimination of acetaldehyde oxidation (in cases of aldehyde dehydrogenase variants with reduced enzymatic activity). Acetaldehyde causes facial flushing, nausea, and tachycardia, which make individuals reduce their intake of alcohol.

MECHANISMS OF ALCOHOL-INDUCED ORGAN DAMAGE

The major organs that are susceptible to damage by alcohol are the liver, pancreas, heart, brain, and bone (Table 126-2). Several alcohol-related medical disorders are caused by various nutritional deficiencies; ethanol is deficient in proteins, minerals, and vitamins. Therefore, the initial management of the alcoholic patient must attend to suggested dietary deficiencies (e.g., thiamine) and electrolyte deficiencies, including potassium, magnesium, calcium, and zinc.

Alcohol-related liver disease is the leading preventable cause of hepatic failure in the industrialized world. Genetic factors are thought to play a role in susceptibility to this disorder, since alcoholic liver disease is more prevalent in whites than in other ethnic groups (despite a similar magnitude of ethanol consumption). The histopathologic features of alcoholic liver disease

TABLE 126-2 MEDICAL COMPLICATIONS OF ALCOHOL ABUSE

NEUROLOGIC	ELECTROLYTE OR NUTRITIONAL
Encephalopathy (Wernicke, with oculomotor dysfunction; gait ataxia)	Thiamine deficiency
Marchifava-Bignami disease (demyelination of corpus callosum)	Niacin deficiency
Central pontine myelinosis	Folate deficiency
Cognitive dysfunction	Vitamin B12 deficiency
Amnesia (i.e., Korsakoff syndrome)	Vitamin D deficiency
Dementia	Zinc deficiency
Cerebellar degeneration	Hypokalemia
Peripheral neuropathy	Hypomagnesaemia
Seizures	Hypocalcaemia
	Ketoacidosis
	Hypoglycemia
	Hypertriglyceridemia
	Malnutrition
HEMATOLOGIC	ENDOCRINE
Anemia (often with macrocytosis)	Diabetes mellitus
Leukopenia	Gynecomastia
Thrombocytopenia	
GASTROINTESTINAL	MUSCULOSKELETAL
Esophagitis	Myopathy
Esophageal varices	Osteoporosis
Gastritis	Testicular atrophy
Gastrointestinal bleeding	Amenorrhea
Pancreatitis	Infertility
Hepatitis	
Cirrhosis	MISCELLANEOUS
Splenomegaly	Spontaneous abortion
	Fetal alcohol syndrome
	Increased risk of cancer (breast, oropharyngeal, esophageal, hepatocellular, colorectal)
	Accidents, trauma, violence, suicide
CARDIOVASCULAR	
Hypertension	
Cardiomyopathy	
Stroke	
Arrhythmias (especially atrial fibrillation)	