

## **Medical Concerns Regarding Clandestine Labs**

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The clandestine manufacturing of drugs produces multiple health risks for any exposed individual, especially children. Sites where illegal drugs are being manufactured may contain remnants of manufacturing such as the drug itself as well as the chemicals used in the manufacturing process, most of which are dangerous. This section will outline the health hazards created by the manufacturing process as well as the unique features placing children at additional risk.

As most local clandestine labs are created to manufacture methamphetamine, this drug will be the focus of this section. Methamphetamine and its manufacturing intermediates are frequently found in detectable concentrations on almost every surface in these environments. It is not known whether or not these concentrations may present a toxicologic risk. In a drug use situation, exposure to these drugs has been known to cause significant adverse health effects. These compounds may be absorbed through the skin and can have effects on many different organ systems. (More detailed information on the medical effects of methamphetamine is discussed in the *Medical Aspects of Methamphetamine* section). These drugs are potent central nervous system stimulants and can cause high blood pressure, elevated heart rate, and agitation. This drug can cause psychosis, paranoia, anxiety, restlessness, agitation, confusion, and hyperactivity. Methamphetamine use/exposure has also been linked to kidney failure, heart attacks, strokes, and vasculitis (inflammation of the blood vessels). It can cause potentiation (increased effects) of other drugs the individual may be taking, heart dysrhythmias (rhythm abnormalities), seizures, and even sudden death. When death occurs, it usually is a result of an intracranial (brain) bleed, cardiac dysrhythmia (rhythm abnormality), uncontrollable seizures, kidney failure or hyperthermia (extremely high body temperature). Finally the effects of chronic drug exposure include psychiatric abnormalities, weight loss (failure to thrive), cardiomyopathy (heart muscle abnormality), and brain damage (injury to the nerve terminals).

The chemicals used in the manufacturing process are also very dangerous. Acids such as hydriotic acid, hydrochloric acid, phosphoric acid and sulfuric acid as well as bases such as liquid ammonia, and sodium hydroxide (Red Devil Lye, Drano) can all cause severe burns to the eyes, skin, lungs and gastrointestinal organs if contact occurs. Red phosphorus when mixed with other solvents or oxidants may produce a highly toxic gas. Exposure to the organic solvents that are used such as methanol, ethyl ether, benzene, acetone, chloroform and hexane can cause many problems including intoxication, hepatitis (liver inflammation), kidney failure, bone marrow suppression, seizures and death. Finally, iodine can be toxic in relatively small amounts causing severe gastrointestinal injury (if ingested) and pulmonary edema or fluid on the lungs (if

inhaled). Ingestion of relatively small amounts of iodine (200 mg) has been fatal in children and chronic exposures may lead to thyroid disease.

Children are at increased risk because of their physiologic status as well as their behaviors. First, a child's physiologic status is different from adults frequently placing them at additional risk in these dangerous environments. Children have very rapidly developing central nervous systems, accelerated rates of bone and organ growth, and rapidly growing endocrine (thyroid, reproductive) systems, all placing them at increased risk of damage if exposed to toxic chemicals. Children also have different liver and kidney metabolism and clearance of chemicals introduced into their bodies, variability in gastrointestinal absorption, and accelerated heart and respiratory rates, all ways which create additional possibility of introduction of the dangerous chemicals into the child's body. Children have an increased body surface area, which creates a greater chance of absorption. Finally, children's behaviors place them at additional risk because children explore their environment by crawling on the ground and putting various items in their mouths. When those items are contaminated with either the dangerous chemicals or the drug itself, the child may become contaminated or ill.