

Adulterated Alcohol Poisoning: Issue Summary

ISSUE

Methanol poisonings have been reported in the media recently as a result of the illegal manufacturing and distribution of contaminated alcoholic beverages. These incidents unfortunately have had serious consequences leading to injury and loss of life. They are largely preventable with proper enforcement and consumer education.

HOW?

Methanol is often deliberately added to alcoholic beverages by unscrupulous and illegal criminal enterprises as a cheaper alternative to producing ethanol. Also improper higher levels of methanol can be unintentionally formed during the fermentation of beverages that are high in pectin, such as beverages made with grapes and berries. During a clean fermentation process, methanol is produced at safe, low levels. However, in unclean fermentation containers, bacteria causes methanol to produce at higher levels.

SYMPTOMS

Like other industrial chemicals, methanol is toxic and not meant for human consumption and can create adverse health effects if consumed, including death. After consumption, methanol is converted into formaldehyde and then into formic acid, which causes the blood to become acidic (metabolic acidosis). Once acid levels in the blood become elevated, more drastic measures must be taken to purify the blood. Symptoms usually do not occur until about 12 to 24 hours after consumption.

In addition to intoxication, symptoms include:

- Abdominal pain, diarrhea, nausea, or vomiting
- Dizziness, headache, or weakness
- Breathing difficulty or shortness of breath
- Blindness, blurred vision, or dilated pupils
- Seizures

TREATMENT

- **Methanol poisoning can be treated if diagnosed within 10-30 hours of ingestion**
- While methanol is naturally occurring and we all carry methanol in our bodies from dietary exposure from fruit and vegetables, the consumption of methanol from bootleg alcohol can overwhelm our ability to metabolize methanol. Patients diagnosed with methanol poisoning require immediate medical treatment via administration of ethanol or Fomepizole, combined with haemodialysis to inhibit methanol metabolism.
- If Fomepizole is unavailable, administer ethanol (i.e., spirits containing at least 43% alcohol content). Adults will need a loading dose of 1.8mL (0.06oz) of spirits per kg (2.2lbs). For an average size adult (around 70kg) a loading dose of 125mL (4.2oz) needs to be given, followed by a maintenance dose of 30mL/hr (1.00 oz/hr). See the chart below for incremental doses.
- Administration of sodium bicarbonate can neutralize formic acid and maintain proper pH balance

NEXT STEPS

The [Methanol Institute](#) and its members are deeply concerned with the lives of the individuals that have been adversely impacted by methanol poisoning. MI's Bootleg Alcohol Prevention Subcommittee (BAPS) is proactively reaching out to international health organizations, international government bodies, and industry stakeholders to educate and develop an effective path forward.

FIRST AID MEASURES

Ingestion: Swallowing methanol is potentially life threatening. If conscious and medical aid is not immediately available, do not induce vomiting. In actual or suspected cases of ingestion, transport to medical facility immediately.

Inhalation: Remove from exposure area to fresh air immediately. If breathing has stopped, perform artificial respiration. Keep person warm and at rest. Treat symptomatically and supportively. Get medical attention immediately.

Eye Contact: Immediately flush eyes with plenty of clean running water for at least 15 minutes, lifting the upper and lower eyelids occasionally. Remove contact lenses if worn. Obtain medical attention

Skin Contact: Remove contaminated clothing. In a shower, wash affected areas with soap and water for at least 15 minutes. Seek medical attention if irritation occurs or persists. Wash clothing before reuse. Prolonged contact with methanol may damage skin tissue, resulting in drying and cracking.

INFORMALLY PRODUCED ALCOHOLIC DRINKS

Cambodia: Arak
Ecuador: Puntas
India: Desi Daroo
Indonesia: Arak Oplasan
Kenya: Chang'aa
Nicaragua: Guaro
West Bengal: Cholai