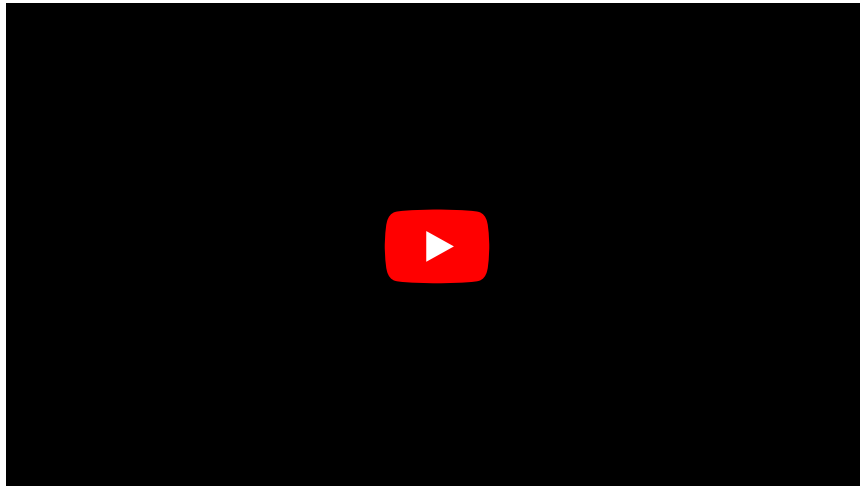
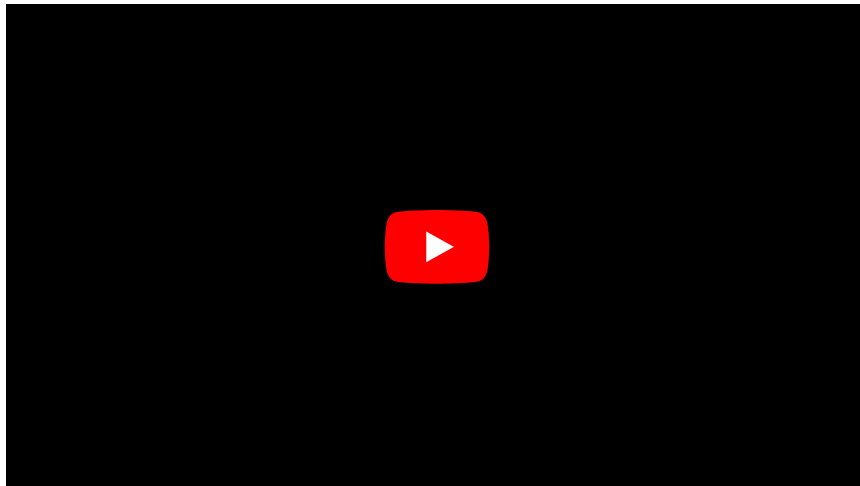


# Alcohol intoxication

## Alcohol toxicity:



## Alcohol toxicity 2:



## Ethylalcohol (Ethanol)

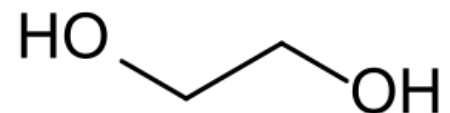
*Find more details on: Abusus of alcohol, Ethanol.*

## Ethylene glycol

- A colorless syrupy liquid with a sweet taste and is used to make antifreeze products (Fridex® for car radiators, brake fluid).

### Etiopathogenesis

- By the same enzymes as alcohol, it is biotransformed → into glycoaldehyde → oxalic acid,
- damages renal tubules by forming calcium oxalate crystals → acute renal failure and MAC,
- osmolarity rises significantly,
- the maximum concentration in plasma is **1-4 h** after ingestion, the elimination half-life is short,
- **lethal dose** - about 100 ml (with timely treatment, the ingestion of 2 liters was also survived).



Ethylenglycol

### Clinical picture

1. **Neurotoxic stage** – transient drunkenness, vomiting, drowsiness, then development of MAC, hyperosmolarity, convulsions, convulsions, coma (secondary brain edema).
2. **Cardiopulmonary stage** – in 12-24 h, dysrhythmia, severe acidosis, hyperventilation (Kussmaul breathing)

), circulatory collapse, hypocalcemia → convulsions, edema of lungs , brain, cardiopulmonary arrest.

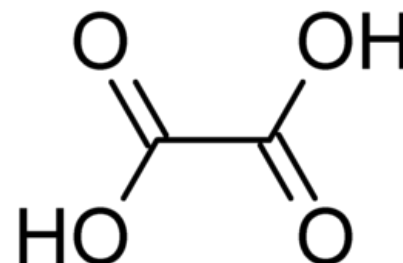
3. **Renal stage** – 24–72 h – hematuria , albuminuria , oliguria , oxaluria , acute tubular necrosis , anuria , renal function never returns to normal.

## Treatment

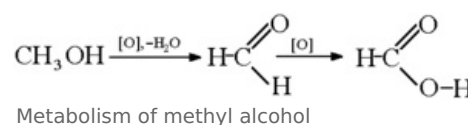
- The antidote is ethanol - orally or in a 5% glucose infusion, the level is maintained at 1 per thousand . Ethanol has a 100x greater affinity for alcohol dehydrogenase , unconverted ethylene glycol is then excreted in the urine,
- dwe also administer vitamin B 1 and folic acid ,
- possibly hemodialysis ,
- ideal drug – **fomepizole** ( Antizol® ) – **alcohol dehydrogenase inhibitor** – very expensive.

## Methyl alcohol

- Formerly "wood spirit", most often mistaken for alcohol,
- it is well absorbed by the lungs and skin (it is also possible to become intoxicated),
- 30–60% is exhaled unchanged through the lungs , the rest is oxidized to formaldehyde and formic acid,
- folic acid is involved in the metabolism of formic acid, its decomposition is slow, there is a risk of accumulation, there is a risk of severe MAC and vision damage ,
- **vision disorders** – up to 24 h latency - initially blurred vision, flashes of light, feelings of glare, loss of field of vision, fundus - there is hyperemia and edema in the disc , in addition to the nerve , it damages the retina by blocking cytochrome oxidase → hypoxia ,
- **blindness** – 15 ml each
- **death** – 30-240 ml each



Oxalic acid



## Treatment

- As in ethylene glycol.

## Investigation

- Methanol in the urine ( BET ), in the case of intoxication in the blood, it is more reliable to measure formic acid in the urine (as a metabolite), but this is not usually done.

## Source

- BENEŠ, Jiří. *Studijní materiály* [online]. [cit. 24.02.2010]. <<http://jirben.wz.cz>>.

## References

- PELCLOVÁ, Daniela. *Nemoci z povolání a intoxikace*. 2. edition. Praha : Karolinum, 2006. 207 pp. ISBN 80-246-1183-X.

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