

# Drug Intoxication — Symptoms and Treatment

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Regardless of which specialization you choose later, you should know the main symptoms and treatment of the most common drug intoxications. Be it older patients with dementia, patients with a history of drug abuse or accidental poisoning in children after playing with the medicine cabinet. Brush up your knowledge for exams and practice and read everything relevant to the 5 major drug intoxications!



## Definition of Drug Intoxications

In emergencies, medics quickly need to **capture many important parameters** in order to act properly. Since a patient's medical history is usually impossible to evaluate in such cases, the present symptoms, the environment (or the place where the patient was found), and the information given by third parties are particularly important.

## Opioid Intoxication

## Symptoms

A patient with an overdose of opioids typically has **pinpoint pupils**, bradycardia, hypothermia, and respiratory depression, and the **reflexes are hardly or not triggered**. During the course of the examination, the physician may notice rhabdomyolysis, recognizable by the pronounced rigid movements.

## Therapy

The method of choice for treating opioid overdose is the opioid receptor antagonist **naloxone** (half-life < 30 min) or the **orally administrable naltrexone**. Slow titration is necessary in order to avoid abrupt opioid withdrawal symptoms. Constant monitoring of the patient primarily includes **observation of the airways**. In severe respiratory depression, intubation with mechanical ventilation is necessary. Diazepam can be administered for the interruption of seizures.

## Intoxication with Benzodiazepines

### Symptoms

The classic triad of symptoms consists of **altered consciousness**, obtained vital signs, and the absence of neurological deficits. In patients with organic brain damage, auto-aggressive behavior with hallucination characteristics may occur. **Benzodiazepines** can be detected in urine (qualitative) and serum (quantitative).

### Therapy

In most cases, the **administration of laxatives and activated carbon** is sufficient. Moreover, induced vomiting can be therapeutically effective. If these strategies do not show adequate results, the antidote flumazenil is the drug of choice.

## Intoxication with Paracetamol

### Symptoms

As one of the main representatives of the non-opioid analgesics, paracetamol is commonly used as a non-prescription analgesic. Paracetamol overdose could lead to **hepatotoxic (liver cell necrosis) and nephrotic damage**. Paracetamol is hepatotoxic from 4 g/day and lethal from 12 g/day.

### Therapy

The **antidote for paracetamol overdose is acetylcysteine**.

## Intoxication with Tricyclic Antidepressants

### Symptoms

A patient with a TCA overdose presents with symptoms of anticholinergic syndrome: mydriasis, hyperthermia, tremor, tachycardia, tonic-clonic seizures, dry skin, and

increased thirst.

**Note:** Convulsions, coma, and cardiac arrhythmias may also occur.

## Therapy

**Induced vomiting and activated carbon administration are useful** in conscious, cooperative patients. In comatose patients, the administration of the antidote physostigmine must be performed. Circuit monitoring and eventual stabilization are pertinent.

## Intoxication with Local Anesthetics

### Symptoms

The CNS symptoms in case of a local anesthetic overdose (e.g., bupivacaine) include **a metallic taste in the mouth, speech sounds like there is a lump in the throat, peroral tingling, and double vision**, confusion and unrest, tonic-clonic seizures, and coma. ECG shows alterations in the QRS complex (shortened QT interval, AV blocks) as well as conduction disturbances such as ventricular fibrillation and asystole.

### Therapy

**Lipid infusions, adrenaline, and diazepam** can be used to treat intoxication with local anesthetics.

## References

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