

# Common Street Drugs



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Patients seek medical attention in the ED with a broad spectrum of symptoms and conditions. The most commonly-encountered drugs of abuse include caffeine, nicotine and ethanol. However, these are legal and, although sometimes clinically important, are beyond the scope of this article.

The substances included in this review are:

- marijuana,
- benzodiazepines and
- opioids (Table 1).

Although the latter two have long been legal when prescribed as medication for a specific patient, they are sometimes sought under false pretenses, stolen or purchased "on the street" for the sole purpose of abuse and this activity is illegal.

In the past few decades, we have witnessed increased societal acceptance of marijuana and an ensuing attitudinal shift making patients admit more freely to using these drugs, without fear of repercussions.

Intoxication can lead to injuries and predispose to certain medical conditions. Often, physicians do not elicit a history of non-medical drug use; thus underestimating their contribution in these clinical scenarios.

In a recent study conducted in the United Kingdom of 2,488 patients between 18- and

## Claire's case

Claire, 29, is brought to the ED by ambulance with a history of decreased level of consciousness. Her lorazepam bottle is empty. The 100 pill bottle of 1 mg tablets was filled 6 days ago and no pills are found at the scene. She has also consumed about half of pint of rum. She denies having ingested any other medications to harm herself. She simply wants to sleep well and has required more lorazepam progressively over time.

### Exam

Claire's vital signs are as follows:

- Temperature: 37.1°C
- Pulse: 72 bpm and regular
- Respiratory rate: 14 breaths per minute
- BP: 124/68 mmHg
- O<sub>2</sub> saturation: 98% on room air

### Questions

1. What should be your management priorities for Claire?
2. Should she receive flumazenil?

**For another case, look to page 73.**

40-years-of-age having presented to the ED, 33% reported excessive ethanol consumption, 23% reported illicit drug use in the previous year and 14% reported illicit drug use in the preceding month.<sup>1</sup>

## Marijuana

This drug, a derivative of the cannabis plant, is the most common psychoactive substance used. Once grown, the leaves are dried and smoked. Cannabis has been used by many cultures for thousands of years. This drug can also be ingested orally. When smoked, cannabis has an almost immediate effect, whereas the onset of the “high” is delayed by 30 to 60 minutes with oral ingestion.

### Effects

The most sought after effects include euphoric relaxation, a sense of well-being and altered perception.

With more potent cannabis or the use of a larger amount, there are increased visual effects.

Occasionally, this drug can cause an intense anxiety reaction causing users to seek medical attention; management of this presentation includes providing a safe environment and administering benzodiazepines for symptom control.<sup>2</sup>

The potency of cannabis is variable, but in general, has increased. The current single dose far outweighs its predecessors in potency, resulting in a dosage miscalculation by some individuals.

Although there is no specific toxidrome for cannabis, patients are at increased risk of:

- throat and lung infections,
- heart disease and, possibly,
- carcinogenesis.

Cannabis is linked to mental illness; however, the exact nature of this relationship remains debated.<sup>3</sup> A particularly worrisome aspect of marijuana is its effect on a person’s ability to

operate a motor vehicle. One epidemiologic study identified that 15% of surveyed adolescents admitted to driving under the influence of cannabis.<sup>4</sup> Conversely, the positive effects of medical marijuana have been enjoyed by patients with a wide variety of medical problems.<sup>5</sup>

*The potency of cannabis is variable, but in general has increased and the current single dose far outweighs its predecessors in potency.*

## Benzodiazepines

This class of drugs is classified as a central nervous system (CNS) depressant and can be addictive. Benzodiazepines are among the most common drugs implicated in self-poisoning cases. Death is rare with pure benzodiazepine ingestion, but can occur with co-ingestants that potentiate CNS depression, such as ethanol or barbiturates. More serious morbidity and mortality are associated with the shorter-acting benzodiazepines.



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Table 1

Typical findings with common street drugs

Substance	Experience	Dangers	Presentations	Complications
Marijuana	<ul style="list-style-type: none"> <li>Euphoria,</li> <li>Well-being</li> <li>Increased appetite</li> <li>Possible anxiety at high doses</li> <li>Closed-eye visuals</li> </ul>	<ul style="list-style-type: none"> <li>Tachycardia</li> <li>Impaired driving skills</li> </ul>	<ul style="list-style-type: none"> <li>Acute anxiety reaction</li> <li>Motor vehicle crash</li> <li>Injury</li> <li>Chest pain</li> <li>Sore throat</li> <li>Upper respiratory tract infections</li> </ul>	<ul style="list-style-type: none"> <li>Lung cancer</li> <li>Ischemic heart</li> <li>Oral/nasal mucosal irritation</li> </ul>
Benzodiazepines	<ul style="list-style-type: none"> <li>CNS depressant</li> <li>Relaxation</li> <li>Sleep</li> <li>Amnesia*</li> </ul>	<ul style="list-style-type: none"> <li>Oversedation in combination with other sedatives (e.g., opioids, barbiturates, GHB and ethanol)</li> </ul>	<ul style="list-style-type: none"> <li>Decreased level of consciousness</li> <li>Vomiting</li> <li>Amnesia*</li> </ul>	<ul style="list-style-type: none"> <li>Sedation requiring intubation</li> <li>Flumazenil can cause iatrogenic seizures</li> </ul>
Opioids	<ul style="list-style-type: none"> <li>Euphoria</li> <li>Sedation</li> <li>Analgesia</li> </ul>	<ul style="list-style-type: none"> <li>Respiratory failure</li> <li>Hypotension</li> <li>Arrhythmias (rare)</li> <li>Seizures</li> <li>Oversedation</li> </ul>	<ul style="list-style-type: none"> <li>Decreased level of consciousness</li> <li>Vomiting</li> <li>Miosis</li> <li>Decreased respiratory rate</li> </ul>	<ul style="list-style-type: none"> <li>Aspiration pneumonia</li> <li>Non-cardiogenic pulmonary edema</li> <li>Blood-borne infections (IV)</li> </ul>

\* Flunitrazepam, midazolam

CNS: Central nervous system

GHB:  $\Gamma$ -hydroxybutyric acid

Effects

Benzodiazepines enhance the action of  $\gamma$ -aminobutyric acid, the main inhibitory neurotransmitter in the CNS. This results mainly in sedation, characterized by a patient who is lethargic and sleepy, but easy to arouse with verbal or tactile stimuli and has normal vital signs. Ataxia and dysarthria are commonly observed. Much less commonly, in severe intoxications, patients may present with:

- marked CNS depression,
- respiratory depression requiring airway management,

- hypothermia and
- hypotension.

The half-life of these drugs does not necessarily determine the timing of recovery of consciousness. Tolerance develops in habitual users, such that they may recover more quickly than the half-life would suggest. Conversely, a benzodiazepine-naïve person may take longer than predicted to recover following an overdose. In addition, some benzodiazepines have active metabolites, which may result in a longer duration of action than the half-life would suggest. In general, patients recover approximately

12 hours following benzodiazepine intoxication. In some clinical situations, such as when the patient is elderly, or co-ingestants are involved, recovery may take up to 36 hours.

There are no diagnostic tests specific to benzodiazepine ingestion. Urine toxicology screening tests have limitations and do not help manage the patient.

### *Treatment*

Treatment is supportive, since sedation is usually the main clinical effect. Decontamination with activated charcoal may be considered within two hours of ingestion, but caution should be used if the patient is already sedated due to the risk of aspiration pneumonia. In the case of respiratory depression, intubation and mechanical ventilation is appropriate. The use of flumazenil in the context of intentional ingestion or uncertain medication history is strongly discouraged due to the risk of seizures and the precipitation of acute withdrawal in the habitual user.<sup>6</sup>

*Opioids are depressants of the CNS, but are more addictive and can prove very challenging to manage in an overdose situation due to the incidence of associated respiratory depression.*

## James' case

James, 40, is brought to the ED with a decreased level of consciousness. He was found by his spouse on the sofa upon her arrival home from work.

### Exam

James has the following vital signs:

- Temperature: 36.5°C
- Pulse: 60 bpm and regular
- Respiratory rate: 8 breaths per minute
- BP: 104/60 mmHg
- O<sub>2</sub> saturation: 91% on 40% O<sub>2</sub>

His breathing is audibly wheezy at the bedside.

### Questions

1. Which antidote is indicated in the management of James' condition?
2. What precautions must you take if you administer this treatment?

## *Opioids*

This group of drugs, commonly referred to as narcotics, includes (among others):

- Morphine
- Oxycodone
- Meperidine
- Heroin
- Codeine
- Hydrocodone
- Dextromethorphan

Like benzodiazepines, opioids are depressants of the CNS, but are more addictive and can prove very challenging to manage in an overdose situation due to the incidence of associated respiratory depression.

Heroin has been responsible for the majority of opioid-related deaths, but prescription opioids are now becoming increasingly common drugs of abuse.<sup>7</sup>

### Take-home message

- Illicit drug testing is not useful in managing patients (on marijuana, benzodiazepines and opioids) in the ED
- Considering a broad differential diagnosis is essential
- Treatment is supportive in most cases
- Flumazenil use is discouraged in overdose situations
- Many opioids outlast naloxone and respiratory depression can recur
- See [www.erowid.org](http://www.erowid.org) for more information

### Overdose

Opioid overdose typically presents with:

- CNS and respiratory depression,
- pinpoint pupils,
- mild hypotension and
- sinus bradycardia.

These signs may vary depending on co-ingestants. Complications of opioid intoxication include:


- hypothermia,
- rhabdomyolysis,
- seizures (related to either hypoxia or meperidine metabolites) and, rarely,
- arrhythmias.

*Specific testing for illicit drugs is not helpful in the ED management of these drug-abusing patients.*

### Treatment

Treatment includes reversal of the opioid effects with naloxone, as well as appropriate supportive care, with special attention to the above-mentioned complications. Naloxone may reverse the respiratory depression but the effects of most opioids will outlast that of this antidote; thus, the clinician must be cautious about decisions regarding discharge after having administered naloxone, since recurrence of respiratory depression is likely to occur.<sup>8</sup>

### Conclusion

Illicit use of marijuana, benzodiazepines and opioids is extremely common. Recognition of typical clinical presentations can help guide management and appropriate use of decontamination and antidotes. Specific testing for illicit drugs is not helpful in the ED management of these patients. 

### References

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