Chapter 19

Toxicology

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Introduction (1 of 2)

- Each day, we come into contact with things that are potentially poisonous.
- Acute poisoning affects 5 million people each year.
- Chronic poisoning is much more common.
  - Caused by abuse of medications, tobacco, alcohol, drugs

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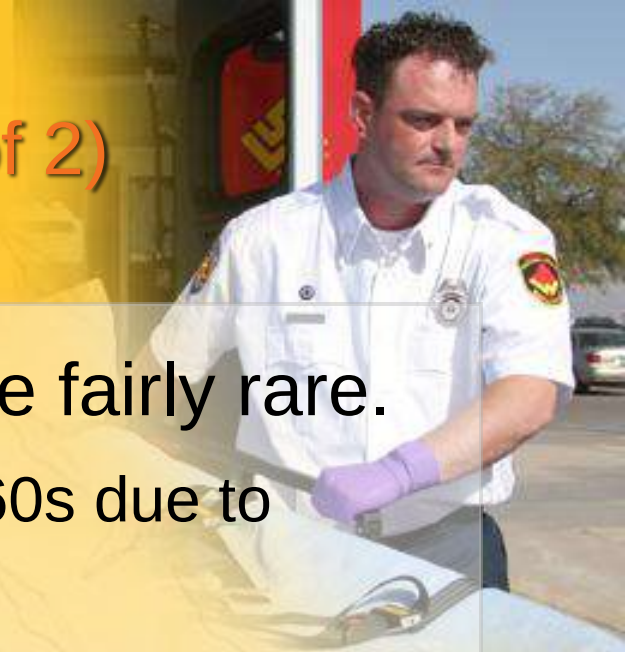
Introduction (2 of 2)



- Deaths caused by poisoning are fairly rare.
  - Decreased steadily since the 1960s due to safety caps
  - However, deaths caused by poisoning in adults have been rising as a result of drug abuse.

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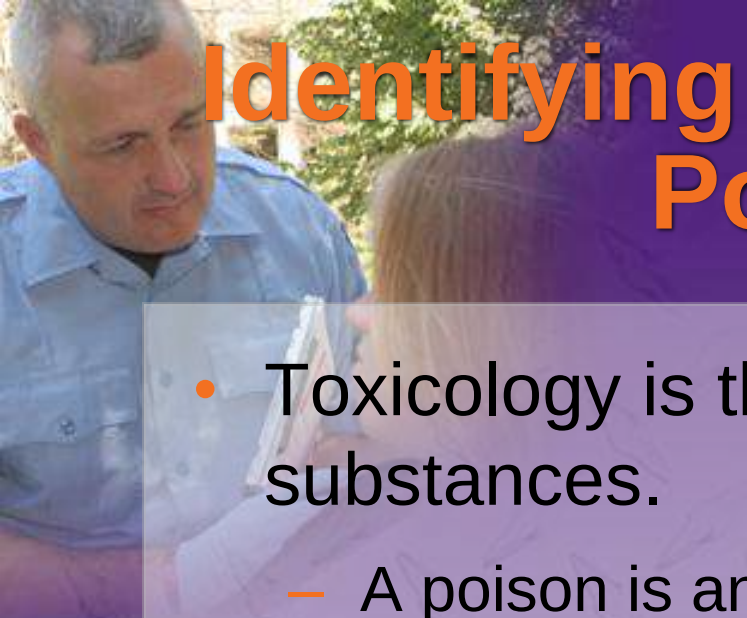

Identifying the Patient and the Poison (1 of 7)

- Toxicology is the study of toxic or poisonous substances.
  - A poison is any substance whose chemical action can damage body structures or impair body function.
  - Substance abuse is the misuse of any substance to produce a desired effect.
  - An overdose is a toxic dose of a drug.

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Identifying the Patient and the Poison (2 of 7)

- Your primary responsibility to the patient is to recognize that a poisoning has occurred.
  - Very small amounts of some poisons can cause considerable damage or death.
  - If you suspect poisoning, notify medical control and begin emergency treatment.

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Identifying the Patient and the Poison (3 of 7)

- The signs and symptoms of poisoning vary according to the specific agent.
  - Presence of such injuries at the patient's mouth suggests the ingestion of a poison.

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Identifying the Patient and the Poison (4 of 7)

Table 19-1 Toxidromes: Typical Signs and Symptoms of Specific Overdoses

Agent	Signs and Symptoms
Opioid (Examples: heroin, oxycodone)	▪ Hypoventilation or respiratory arrest ▪ Pinpoint pupils ▪ Sedation or coma ▪ Hypotension
Sympathomimetics (Examples: epinephrine, albuterol, cocaine, methamphetamine)	▪ Hypertension ▪ Tachycardia ▪ Dilated pupils ▪ Agitation or seizures ▪ Hyperthermia
Sedative-hypnotics (Examples: diazepam [Valium], secobarbital [Seconal], flunitrazepam [Rohypnol])	▪ Slurred speech ▪ Sedation or coma ▪ Hypoventilation ▪ Hypotension
Anticholinergics (Examples: atropine, Jimson weed)	▪ Tachycardia ▪ Hyperthermia ▪ Hypertension ▪ Dilated pupils ▪ Dry skin and mucous membranes ▪ Sedation, agitation, seizures, coma, or delirium ▪ Decreased bowel sounds
Cholinergics (Examples: pilocarpine, nerve gas)	▪ Excess defecation or urination ▪ Muscle fasciculations ▪ Pinpoint pupils ▪ Excess lacrimation (tearing) or salivation ▪ Airway compromise ▪ Nausea or vomiting

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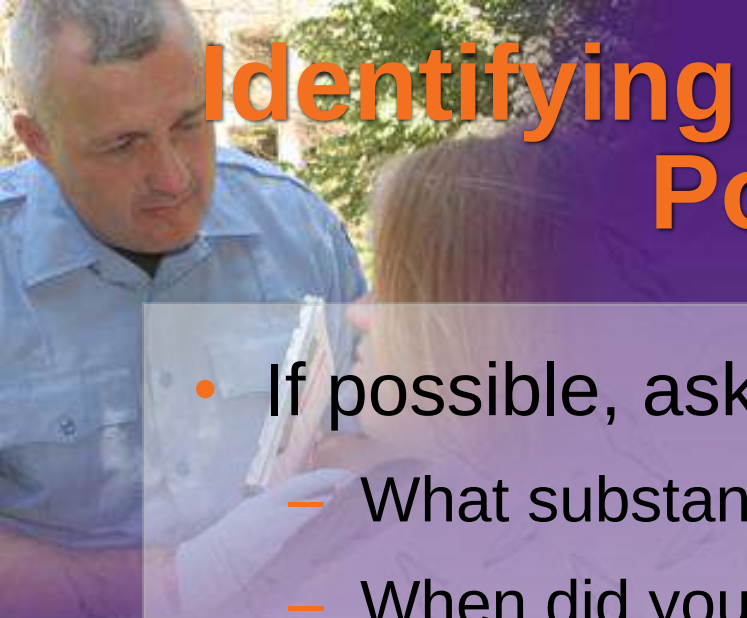

Identifying the Patient and the Poison (5 of 7)

- If possible, ask the patient:
  - What substance did you take?
  - When did you take it (or become exposed to it)?
  - How much did you ingest?
  - What actions have been taken?
  - How much do you weigh?

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Identifying the Patient and the Poison (6 of 7)

- Try to determine the nature of the poison.
  - Look around the immediate area for clues.
  - Place any suspicious material in a plastic bag and take it with you.
  - Containers at the scene can provide critical information.

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Identifying the Patient and the Poison (7 of 7)

- If the patient vomits, examine the contents for pill fragments.
  - Wear proper personal protective equipment.
  - Collect the vomitus in a plastic bag.

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How Poisons Get Into the Body
(1 of 3)

- The most important treatment you can perform is diluting and/or physically removing the poisonous agent.
  - Most often, you will not be administering an antidote.
  - How you provide treatment depends on how the poison got into the body.

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How Poisons Get Into the Body
(2 of 3)

- Four avenues to consider:
  - Inhalation
  - Absorption
  - Ingestion
  - Injection

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How Poisons Get Into the Body
(2 of 3)

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How Poisons Get Into the Body
(3 of 3)

- All routes of poisoning can be deadly.
  - Each should be thought of as being equally serious.
- Always contact medical control before you proceed with the treatment.

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Inhaled Poisons (1 of 3)

- Move the patient into fresh air immediately.
- The patient may require supplemental oxygen.
- Use self-contained breathing apparatus to protect yourself from poisonous fumes.

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Inhaled Poisons (2 of 3)

- Some patients may need decontamination after removal from the toxic environment.
- All patients who have inhaled poison require immediate transport.
- Take containers, bottles, labels when transporting the patient to the hospital.

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Inhaled Poisons (3 of 3)

- Patients sometimes attempt to commit suicide in a vehicle.
  - Exhaust fumes contain high levels of carbon monoxide
  - When you open the door, you may be overcome as well.
  - Contact hazardous materials responders and have them remove the victim.

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Absorbed and Surface Contact Poisons (1 of 6)

- Can affect the patient in many ways:
  - Skin damage
  - Chemical burns
  - Rashes
  - Systemic effects
- It is important to distinguish between contact burns and contact absorption.

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Absorbed and Surface Contact Poisons (2 of 6)

- Signs and symptoms include:
  - A history of exposure
  - Liquid or powder on a patient's skin
  - Burns
  - Itching
  - Irritation
  - Typical odors of the substance

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Absorbed and Surface Contact Poisons (3 of 6)

- Emergency treatment:
  - Avoid contaminating yourself or others.
  - While protecting yourself, remove substance from patient as rapidly as possible.
- Remove all contaminated clothing.
- Flush and wash the skin.

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Absorbed and Surface Contact Poisons (4 of 6)

- If the patient has a chemical agent in the eyes, irrigate them quickly and thoroughly.
  - 5 to 10 minutes for acid substances
  - 15 to 20 minutes for alkalis

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Absorbed and Surface Contact Poisons (5 of 6)

- Many chemical burns occur in an industrial setting.
  - Wash the substance off immediately.
  - Obtain material safety data sheets.

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Absorbed and Surface Contact Poisons (6 of 6)

- The only time you should not irrigate with water is when the poison reacts violently with water.
  - Brush the chemical off.
  - Remove contaminated clothing.
  - Apply a dry dressing to the burn area.

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Ingested Poisons (1 of 4)

- About 80% of poisoning is by mouth.
  - Drugs
  - Liquids
  - Household cleaners
  - Contaminated food
  - Plants

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Ingested Poisons (2 of 4)

- Usually accidental in children and deliberate in adults
- Signs and symptoms vary greatly with the:
  - Type of poison
  - Age of the patient
  - Time that has passed since ingestion

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Ingested Poisons (3 of 4)

- Goal is to rapidly remove as much poison as possible from the GI tract.
  - Further care will be provided at the emergency department.
- In the past, syrup of ipecac was used to induce vomiting.
  - Generally not used today

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Ingested Poisons (4 of 4)

- Many EMS systems use activated charcoal.
  - Comes as a suspension that binds to the poison in the stomach and carries it out of the system

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Injected Poisons (1 of 2)

- Usually the result of drug abuse, such as heroin or cocaine
- Signs and symptoms may include:
  - Weakness
  - Dizziness
  - Fever/chills
  - Unresponsiveness
  - Excitability

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Injected Poisons (2 of 2)

- Injected poisons are impossible to dilute or remove.
  - Usually absorbed quickly into the body
  - Can cause intense local tissue destruction
- Monitor the airway, provide high-flow oxygen, be alert for nausea and vomiting, and transport promptly.

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Patient Assessment

- Scene size-up
- Primary assessment
- History taking
- Secondary assessment
- Reassessment

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Scene Size-up (1 of 2)

- Scene safety
  - Assess the scene to ensure your safety.
  - Determine:
    - Number of patients involved
    - Need for additional resources
    - Whether spine stabilization is required
  - Use the appropriate PPE.

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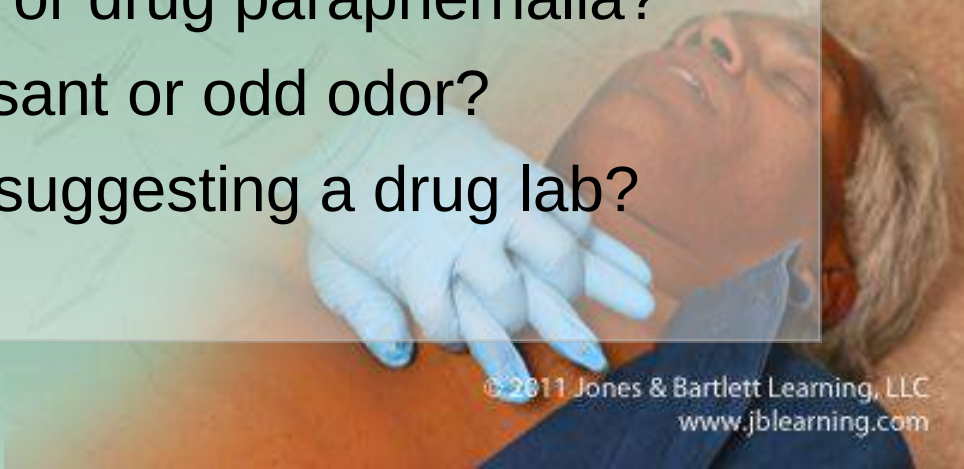
Scene Size-up (2 of 2)

- Mechanism of injury/nature of illness
  - Dispatcher may specify
  - If not, look for clues and ask yourself the following questions:
    - Are there medication bottles lying around?
    - Are there alcoholic beverage containers?
    - Are there syringes or drug paraphernalia?
    - Is there an unpleasant or odd odor?
    - Do I see anything suggesting a drug lab?



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Primary Assessment (1 of 3)

- Form a general impression.
  - Assess the patient's LOC.
  - Determine any life threats.
  - Do not be fooled into thinking that a conscious, alert, and orientated patient is in stable condition.

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Primary Assessment (2 of 3)

- Airway and breathing
  - Ensure that the patient has an open airway and adequate ventilation.
  - Do not hesitate to begin oxygen therapy.
- Circulation
  - Assess the patient's circulatory status and pulse and skin condition.

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Primary Assessment (3 of 3)

- Transport decision
  - A delay on the scene is rarely indicated.
  - Consider decontamination of the patient before transport depending on the poison that the patient was exposed to.
  - Decontamination is especially important when transporting in a helicopter.

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History Taking (1 of 3)

- Investigate the chief complaint.
  - If your patient is responsive, begin with an evaluation of the exposure and the SAMPLE history.
  - If your patient is not responsive, obtain this history from friends, family members, medical jewelry, or cards in his or her wallet.

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History Taking (2 of 3)

- SAMPLE history
  - Guides you in what to focus on as you continue to assess the patient's complaints
- Also, ask the following questions:
  - What is the substance involved?
  - When did the patient become exposed to it?
  - What was the level of exposure?

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History Taking (3 of 3)

- Questions (cont'd):
  - Over what period did the patient take the substance?
  - Has the patient or a bystander performed any intervention?
  - How much does the patient weigh?

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Secondary Assessment

- Physical examinations
  - Focus on the area of the body involved with the poisoning or the route of exposure.
- Vital signs
  - Many poisons produce no outward indications of the exposure's seriousness.
  - Look for alterations in the LOC, pulse, respirations, blood pressure, and skin.

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Reassessment (1 of 3)

- Reassess the adequacy of the ABCs.
- Evaluate your interventions.
- Repeat the assessment of vital signs:
  - Every 15 minutes for a stable patient
  - Every 5 minutes, or constantly, for a patient who has consumed a harmful or lethal dose

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Reassessment (2 of 3)

- Interventions
  - Supporting the ABCs is your most important task.
  - Dilute airborne exposures with oxygen.
  - Remove contact exposures with water.
  - Consider activated charcoal for ingestions.
  - Contact medical control or a poison center to discuss treatment options.

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Reassessment (3 of 3)

- Communication and documentation
  - Report as much information about the poison as possible to the hospital.
  - Bring, or have the company fax, the material data sheet to the hospital if the poisoning occurred in a work setting.

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Emergency Medical Care (1 of 5)

- Ensure scene safety.
  - Follow standard precautions.
  - Perform external decontamination.
- Remove tablets or fragments from the patient's mouth.
- Wash or brush the poison from the patient's skin.

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Emergency Medical Care (2 of 5)

- Assess and maintain the patient's ABCs.
- Provide oxygen and perform assisted ventilations if necessary.
- If approved by medical control, give activated charcoal.

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Emergency Medical Care (3 of 5)

- Activated charcoal is not indicated for patients:
  - Who have ingested an acid, an alkali, or a petroleum product
  - Who have a decreased LOC and cannot protect their airway
  - Who are unable to swallow

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Emergency Medical Care (4 of 5)

- You will likely carry plastic bottles of premixed suspension, each containing up to 50 g of activated charcoal.
  - Insta-Char, Actidose, Liqui-Char
  - The usual dose for an adult or child is 1 g per kilogram of body weight.
  - Before you give a patient charcoal, obtain approval from medical control.

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Emergency Medical Care (5 of 5)

- You may need to persuade the patient to drink it, but never force it.
- Major side effect is black stools.
- If the patient has ingested a poison that causes nausea, he or she may vomit after taking charcoal.
  - The dose will have to be repeated.

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Specific Poisons (1 of 2)

- Over time, a person who routinely misuses a substance may need increasing amounts of it to achieve the same result.
  - This is called developing a tolerance.
  - Almost any substance can be abused.

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Specific Poisons (2 of 2)

- The importance of safety awareness and standard precautions cannot be stressed enough.
  - Known drug abusers have a fairly high incidence of serious and undiagnosed infections, including HIV and hepatitis.
  - Always wear the appropriate PPE.
  - Expect the unexpected.

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Alcohol (1 of 5)

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- Most commonly abused drug in the United States
  - Kills more than 200,000 people each year
  - One of the greatest national health problems

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Alcohol (2 of 5)

- Alcohol abuse can result in many long-term effects.
  - Most common effect is liver damage
  - 90% of heavy drinkers will develop some level of hepatitis.
  - 10% to 20% of alcoholics will develop cirrhosis.

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Alcohol (3 of 5)

- Alcohol is a powerful CNS depressant.
  - Decreases activity and excitement
  - Also induces sleep
  - Dulls the sense of awareness, slows reflexes, and reduces reaction time
  - May cause aggressive and inappropriate behavior and lack of coordination
  - Alcohol is commonly not the only drug taken.

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Alcohol (4 of 5)

- If a patient exhibits signs of serious CNS depression, you must provide respiratory support.
  - May cause vomiting
- Patients may experience frightening hallucinations, or delirium tremens (DTs).

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Alcohol (5 of 5)

- DTs is characterized by:
  - Agitation and restlessness
  - Fever
  - Sweating
  - Tremors
  - Confusion and/or disorientation
  - Delusions and/or hallucinations
  - Seizures

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Opioids (1 of 3)

Table 19-2 Common Opioid Drugs

Butorphanol (Stadol)
Codeine
Fentanyl derivatives ("China White")
Heroin
Hydrocodone (Vicodin)
Hydromorphone (Dilaudid)
Meperidine (Demerol)
Methadone (Dolophine)
Morphine
Oxycodone (Percocet)
Oxycodone hydrochloride (OxyContin)
Pentazocine (Talwin)
Propoxyphene (Darvon)

- Named for the opium in poppy seeds, origin of heroin, codeine, and morphine
  - Many addicts may have started using opioids with an appropriate medical prescription.

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Opioids (2 of 3)

- These agents are CNS depressants and can cause severe respiratory depression.
  - Tolerance develops quickly.
  - Some users may require massive doses to experience the same high.
  - Often cause nausea and vomiting
  - May lead to hypotension

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Opioids (3 of 3)

- Patients typically appear sedated or unconscious and cyanotic with pinpoint pupils.
- Treatment includes supporting the airway and breathing.
  - Open the airway, give supplemental oxygen, and be prepared for vomiting.
  - Narcotic antagonists are the only antidote.

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Sedative-Hypnotic Drugs (1 of 2)

- Barbiturates and benzodiazepines are easy to obtain and relatively cheap.
  - Patient may appear drowsy, peaceful, or intoxicated.

Table 19-3 Examples of Sedative-Hypnotic Drugs

Barbiturates	Benzodiazepines	Others
Amobarbital (Amytal)	Alprazolam (Xanax)	Carisoprodol (Soma)
Butabarbital (Butisol)	Chlordiazepoxide (Librium)	Chloral hydrate ("Mickey Finn")
Pentobarbital (Nembutal)	Diazepam (Valium)	Cyclobenzaprine (Flexeril)
Phenobarbital (Luminal)	Flunitrazepam (Rohypnol)	Ethchlorvynol (Placidyl)
Secobarbital (Seconal)	Lorazepam (Ativan)	Ethyl alcohol (drinking alcohol)
	Oxazepam (Serax)	Glutethimide (Doriden)
	Temazepam (Restoril)	Hydrocarbon inhalants
		Isopropyl alcohol (rubbing alcohol)
		Meprobamate (Equagesic)

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Sedative-Hypnotic Drugs (2 of 2)

- In general, these agents are taken by mouth.
  - Occasionally, the capsules are suspended or dissolved in water and injected.
  - Your treatment is to provide airway clearance, ventilatory assistance, and prompt transport.
  - The antidote (flumazenil) may be administered in the hospital.

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Abused Inhalants (1 of 2)

- These agents are inhaled instead of ingested or injected.
  - Acetone, toluene, xylene, hexane
  - Found in glues, cleaning compounds, paint thinners, and lacquers
  - Gasoline and halogenated hydrocarbons are also abused.
    - Commonly abused by teenagers

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Abused Inhalants (2 of 2)

- Always use special care.
  - Halogenated hydrocarbon solvents can make the heart hypersensitive to the patient's own adrenaline.
  - Even the action of walking may cause a fatal ventricular arrhythmia.
  - Use a stretcher to move the patient, give oxygen, and transport to the hospital.

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Sympathomimetics (1 of 4)

Table 19-4 Street Names for Sympathomimetics

Street Name	Drug Name
Adam	3,4-Methylenedioxymethamphetamine (MDMA)
Bennies	Amphetamines
Crank	Crack cocaine, heroin, amphetamine, methamphetamine, methcathinone
DOM	4-Methyl-2,5-dimethoxyamphetamine
Ecstasy	MDMA
Eve	MDMA
Fen-phen	Phentermine
Golden eagle	4-Methylthioamphetamine
Ice	Cocaine, crack cocaine, smokable methamphetamine, methamphetamine, MDMA, phencyclidine (PCP)
MDA	Methaqualone
Meth	Methamphetamine
Speed	Crack cocaine, amphetamine, methamphetamine
STP	PCP
Uppers	Amphetamines

- CNS stimulants that mimic the effects of the sympathetic (fight-or-flight) nervous system.

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Sympathomimetics (2 of 4)

- A stimulant is an agent that produces an excited state.
  - Frequently cause hypertension, tachycardia, and dilated pupils
  - Designer drugs are frequently abused in certain areas of the United States.

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Sympathomimetics (3 of 4)

- Cocaine may be taken in a number of different ways.
  - Can be absorbed through all mucous membranes and even across the skin
  - Effects last less than an hour
  - Smoked crack is the most potent.

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Sympathomimetics (4 of 4)

- Cocaine is one of the most addicting substances known.
  - Acute overdose is a genuine emergency.
  - Severe agitation can lead to tachycardia and hypertension.
  - Patients may be paranoid.
  - Do not leave the patient unattended.
  - Provide prompt transport.

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Marijuana (1 of 2)

- Marijuana is abused throughout the world.
  - Produces euphoria, relaxation, and drowsiness
  - Impairs short-term memory and the capacity to do complex thinking
  - Could progress to depression and confusion

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Marijuana (2 of 2)

- Marijuana use rarely necessitates transport to the hospital.
  - Except for a patient who is hallucinating, very anxious, or paranoid
  - Reassure the patient and transport with a minimum amount of excitement.
  - Marijuana is often used as a vehicle to get other drugs into the body.

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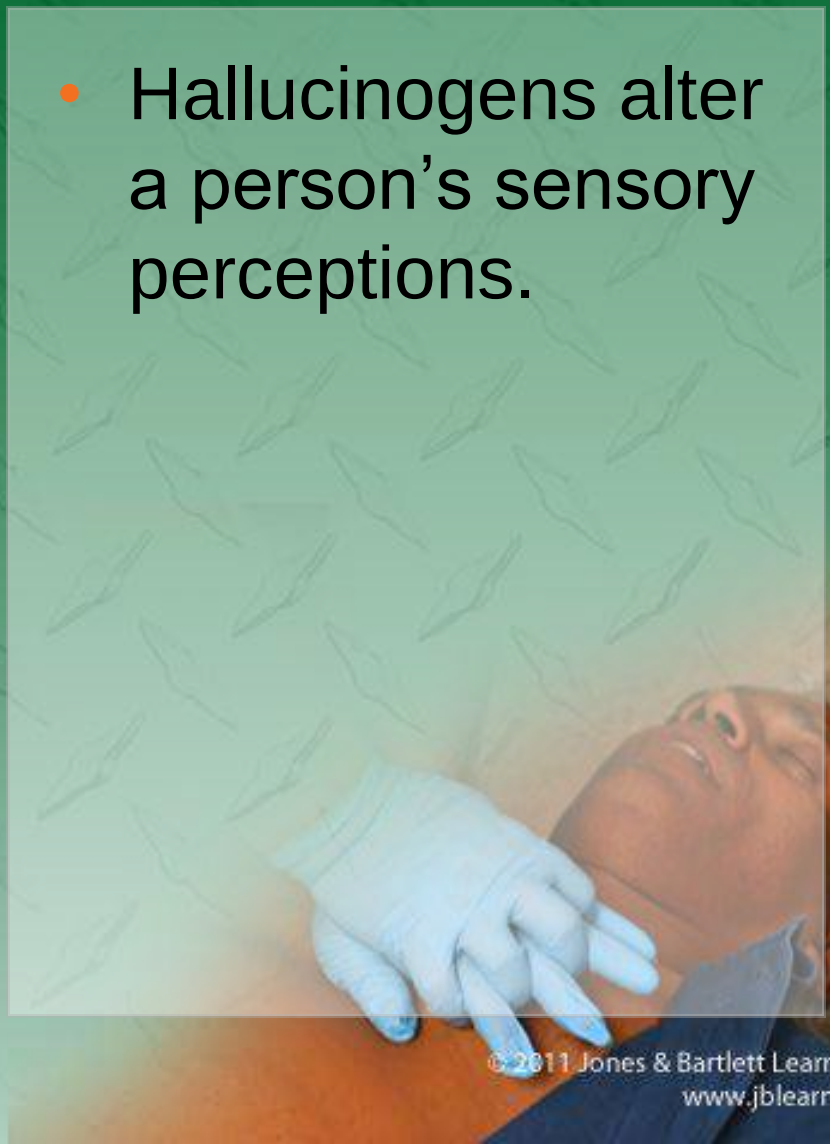
Hallucinogens (1 of 3)

Table 19-5 Commonly Abused Hallucinogens

Bufotenine (toad skin)
DimethylItryptamine (DMT)
Hashish
Jimson weed
LSD
Marijuana
Mescaline
Morning glory
Mushrooms
Nutmeg
PCP
Psilocybin (mushroom)

- Hallucinogens alter a person's sensory perceptions.



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Hallucinogens (2 of 3)

- These agents:
  - Cause visual hallucinations
  - Intensify vision and hearing
  - Generally separate the user from reality
- Patients experiencing a “bad trip” will be hypertensive, tachycardic, anxious, and paranoid.

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Hallucinogens (3 of 3)

- Use a calm, professional manner.
- Provide emotional support.
- Do not use restraints unless you or the patient is in danger of injury.
- Watch the patient carefully throughout transport.
- Provide reassurance.

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Anticholinergic Agents (1 of 2)

- "Hot as a hare, blind as a bat, dry as a bone, red as a beet, and mad as a hatter."
- These medications have properties that block the parasympathetic nerve.
- Common drugs include atropine, Benadryl, and Jimson weed.

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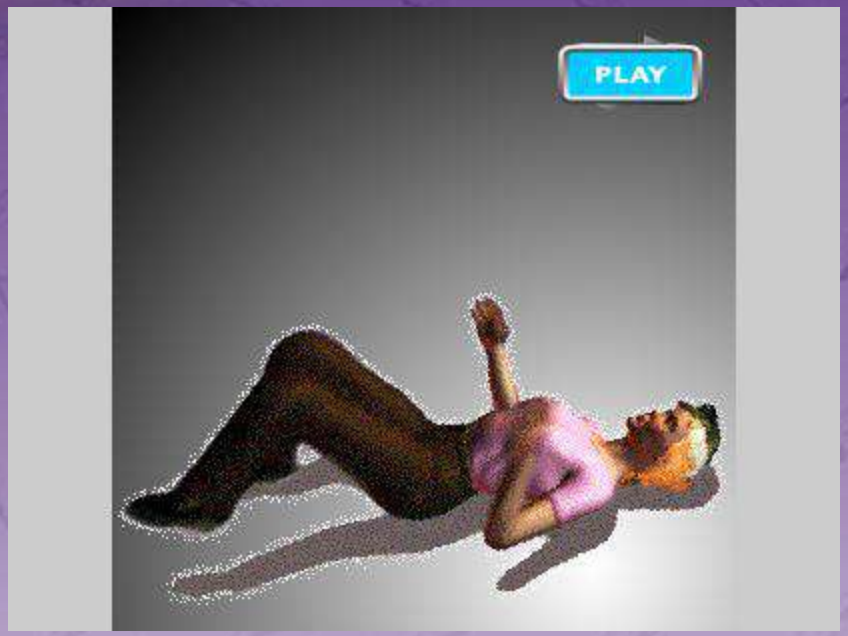
Anticholinergic Agents (2 of 2)



- Death from these agents can be rapid.
  - The patient can go from appearing "normal" to seizure and death within 30 minutes.
  - Transport immediately.
  - Seizures and arrhythmias are best treated in the hospital.

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Cholinergic Agents (1 of 6)

- Include “nerve gases” designed for chemical warfare, insecticides, and some types of wild mushrooms.
- Overstimulate normal body functions that are controlled by the parasympathetic nerves

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Cholinergic Agents (2 of 6)

- Overstimulation results in:
  - Salivation
  - Mucus secretion
  - Urination
  - Crying
  - An abnormal heart rate

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Cholinergic Agents (3 of 6)

- Use the mnemonic DUMBELS to remember the signs and symptoms:
  - **D**efecation
  - **U**rination
  - **M**iosis
  - **B**ronchorrhea
  - **E**mesis
  - **L**acrimation
  - **S**alivation

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Cholinergic Agents (4 of 6)

- Or, you can use SLUDGE:
  - **S**alivation
  - **L**acrimation
  - **U**rination
  - **D**efecation
  - **G**astrointestinal irritation
  - **E**ye constriction/emesis

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Cholinergic Agents (5 of 6)

- The most important consideration is to avoid exposure yourself.
  - Decontamination may take priority over immediate transport.
  - After decontamination:
    - Decrease the secretions in the mouth and trachea.
    - Provide airway support.

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Cholinergic Agents (6 of 6)

- Antidote kits may be available.
  - Mark I kit, DuoDote kit
  - Indications include a known exposure to nerve agents or organophosphates with manifestation of signs and symptoms.
  - The kit consists of an auto-injector of atropine and one of 2-PAM chloride.

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Miscellaneous Drugs (1 of 5)

Table 19-6 Fatal Ingested Poisons

Benzocaine
Calcium channel blockers (verapamil, nifedipine, diltiazem)
Camphor
Chloroquine
Hydrocarbon solvents
Diphenoxylate-atropine (Lomotil)
Methanol and ethylene glycol
Methylsalicylate (oil of wintergreen)
Phenothiazines (eg, Thorazine)
Quinine
Theophylline
Tricyclic antidepressants (amitriptyline [Elavil], imipramine [Tofranil], nortriptyline [Pamelor])
Tetrahydrozoline (Visine)

- Accidental or intentional overdose with cardiac medications has become common.
  - Children may ingest them thinking they are candy.

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Miscellaneous Drugs (2 of 5)

- Signs and symptoms depend on the medication ingested.
- You will likely be given an order to administer activated charcoal.
- Aspirin poisoning remains a potentially lethal condition.

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Miscellaneous Drugs (3 of 5)

- Ingesting too many may result in:
  - Nausea
  - Vomiting
  - Hyperventilation
  - Ringing in the ears

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Miscellaneous Drugs (4 of 5)

- Patients with this problem are frequently:
  - Anxious
  - Confused
  - Tachypneic
  - Hyperthermic
  - In danger of having seizures

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Miscellaneous Drugs (5 of 5)

- Overdosing with acetaminophen is also very common.
- Be extremely careful in dealing with a child who has ingested a poison.
- Some alcohols, including methyl alcohol and ethylene glycol, are even more toxic than ethyl alcohol (drinking alcohol).

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Food Poisoning (1 of 6)

- Almost always caused by eating food contaminated by bacteria
- Two main types:
  - Organism itself may cause disease
  - Organism may produce toxins that cause disease

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Food Poisoning (2 of 6)

Table 19-7 Common Sources of Food Poisoning

Bacillus cereus
Campylobacter
Clostridium botulinum toxin
Clostridium perfringens
Cryptosporidium
Enterococcus
Escherichia coli
Giardia lamblia
Rotavirus
Salmonella
Shigella
Staphylococcus toxin
Vibrio parahaemolyticus
Yersinia enterocolitica

- One organism that produces direct effects of food poisoning is the *Salmonella* bacterium.

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Food Poisoning (3 of 6)

- Causes salmonellosis
  - Characterized by severe GI symptoms within 72 hours of ingestion, including nausea, vomiting, abdominal pain, and diarrhea
  - Proper cooking kills bacteria, and proper cleanliness in the kitchen prevents the contamination of uncooked foods.

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Food Poisoning (4 of 6)

- The more common cause of food poisoning is the ingestion of powerful toxins produced by bacteria, often in leftovers.
  - The bacterium *Staphylococcus* is quick to grow and produce toxins in food.
  - Foods prepared with mayonnaise, when left unrefrigerated, are a common vehicle.

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Food Poisoning (5 of 6)

- The most severe form of toxin ingestion is botulism.
  - Can result from eating improperly canned food
  - Symptoms are neurologic:
    - Blurring of vision
    - Weakness
    - Difficulty in speaking and breathing

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Food Poisoning (6 of 6)

- You should not try to determine the specific cause of acute GI problems.
  - Gather as much history as possible from the patient.
  - Transport him or her promptly to the hospital.
  - When two or more persons have the same illness, take along the suspected food.

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Plant Poisoning (1 of 5)

Table 19-8 Common Toxic Plants

Scientific Name	Common Name
Abrus precatorius	Jequirity bean/rosary pea
Cicuta species	Water hemlock/wild carrot
Colchicum autumnalel	Autumn crocus
Conium maculatum	Poison hemlock
Convallaria majalis	Lily of the valley
Datura species	Jimson weed/stinkweed
Dieffenbachia	Dumbcane
Digitalis purpurea	Foxglove
Nerium oleander	Oleander or rose laurel
Nicotiana glauca	Tree tobacco
Phoradendron	Mistletoe
Phytolacca americana	Pokeweed
Rhododendron	Rhododendron or azalea
Ricinus communis	Castor bean
Solarium nigrum	Nightshade
Zygadenus species	Death camas

- There are several thousand cases of plant poisoning annually.
  - Many household plants are poisonous if ingested.

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Plant Poisoning (2 of 5)

- It is impossible to memorize every plant or poison, let alone their effects.
  - Assess the patient's airway and vital signs.
  - Notify the regional poison center.
  - Take the plant to the emergency department.
  - Provide prompt transport.

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Plant Poisoning (3 of 5)

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Plant Poisoning (4 of 5)

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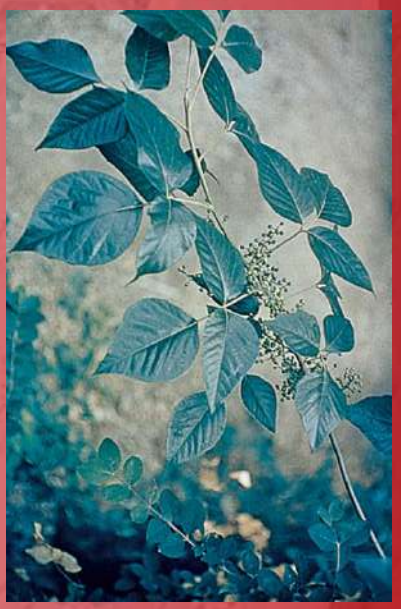

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Plant Poisoning (5 of 5)

- Irritation of the skin and/or mucous membranes is a problem with the common houseplant called dieffenbachia.
  - Maintain an open airway.
  - Give oxygen.
  - Transport the patient promptly to the hospital for respiratory support.

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Summary (1 of 8)

- Emergency treatment may include administration of an antidote, usually at the hospital, if an antidote exists.
- A poison can be introduced into the body by inhalation, absorption, ingestion, or injection.

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Summary (2 of 8)

- It is difficult to remove or dilute injected poisons, a fact that makes these cases especially urgent.
- Always consult medical control before you proceed with the treatment of any poisoning victim.

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Summary (3 of 8)

- Approximately 80% of all poisoning are by ingestion, including plants, contaminated food, and most drugs. In general, activated charcoal should be used in these patients.

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Summary (4 of 8)

- People who abuse a substance can develop a tolerance to it or can develop an addiction.
- The most commonly abused drug in the United States is alcohol.

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Summary (5 of 8)

- Opioids, sedative-hypnotic drugs, and abused inhalants can also depress the central nervous system and can cause respiratory depression.
- Take special care with patients who have used inhalants because the drugs may cause seizures or sudden death.

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Summary (6 of 8)

- Sympathomimetics, including cocaine, stimulate the central nervous system, causing hypertension, tachycardia, seizures, and dilated pupils.
- Anticholinergic medications, often taken in suicide attempts, can cause a person to become hot, dry, blind, red-faced, and mentally unbalanced.

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Summary (7 of 8)

- Two main types of food poisoning cause gastrointestinal symptoms. In one, bacteria in the food directly cause disease, such as salmonellosis. In the other, bacteria such as *Staphylococcus* produce powerful toxins.

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Summary (8 of 8)

- The most severe form of toxin ingestion is botulism. The first neurologic symptoms may appear as late as 4 days after ingestion.

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