Chapter 22 Study Guide

1. Core Concepts of Poisoning & Overdose

- **Poisoning** — Exposure to a toxic substance causing harmful effects.
- **Routes of exposure**:
    - **Ingestion** — Most common (pills, liquids, plants).
    - **Inhalation** — Gases, vapors (CO, Freon).
    - **Injection** — Drugs, envenomation.
    - **Absorption** — Skin/eyes (chemicals, organophosphates).
- **Toxidromes** — Groups of signs/symptoms from similar toxins.
- **Activated charcoal** — Adsorbs many toxins in GI tract; give within 1–2 hours of ingestion if indicated.
- **Naloxone** — Opioid antagonist; reverses respiratory depression (may precipitate withdrawal).
- **Primary treatment** — Supportive care (ABCs, oxygen, ventilation); contact poison control early.
- **Scene safety** — First priority; look for toxins, needles, gases.

2. Major Toxidromes & Key Signs

- **Opioid** — Respiratory depression, pinpoint pupils, bradycardia, hypotension, decreased mental status.
- **Sympathomimetic** — Tachycardia, hypertension, agitation, diaphoresis, hyperthermia, dilated pupils.
- **Sedative-hypnotic** — CNS depression, respiratory depression, hypotension, slurred speech.
- **Cholinergic** (organophosphates, nerve agents) — SLUDGE (Salivation, Lacrimation, Urination, Defecation, GI upset, Emesis) + bradycardia, bronchorrhea.
- **Acetaminophen** — Initially asymptomatic → liver failure (24–72 hours).
- **Salicylate** — Tinnitus, hyperventilation, nausea, mixed acidosis/alkalosis.
- **Alcohol withdrawal** — Tremors, seizures, delirium tremens (hallucinations, confusion).

3. Assessment & Management Priorities

- **Primary** — Scene safety, ABCs (ventilate if needed), glucose check.
- **Secondary** — History (what, how much, when), SAMPLE, physical exam.
- **Do NOT** — Induce vomiting (risk aspiration).
- **Transport** — All symptomatic poisonings; rapid if unstable.
- **Poison control** — Call early for specific guidance.

Key Questions & Answers:

- A 25-year-old man heroin overdose... unresponsive, slow/shallow breathing, bradycardic, track marks: **Provide ventilatory assistance** (and consider naloxone).

- A 3-year-old female ingested plant leaves... unknown type... primary assessment complete: **Contact poison control** (or medical control).
- A 4-year-old 15-kg male ingested unknown acetaminophen... conscious/alert, no distress, unknown time: **Contact poison control** (do not induce vomiting or give charcoal without guidance).
- A 49-year-old male confusion/sweating/visual hallucinations... heavy drinker, possible recent seizure: **Delirium tremens** (alcohol withdrawal).
- Construction worker intense pain after dry powder spilled on arm: **Brush off powder and flush with copious water**.
- A hypnotic drug is one that: **Induces sleep**.
- Man with prolonged alcohol abuse... fell 2nd-story balcony... BP 80/60, HR 120, cool/pale skin: **Chronic alcoholics have higher risk of internal bleeding** (coagulopathy, liver disease).
- Rapid breathing, nausea/vomiting, ringing in ears, hyperthermia: **Salicylate (aspirin) overdose**.
- Person routinely misuses substance... needs increasing amounts: **Tolerance**.
- Activated charcoal given because it: **Adsorbs many toxins in GI tract**.
- Activated charcoal may be indicated for patient who ingested: **Certain oral poisons** (e.g., acetaminophen, aspirin, many drugs).
- After administering activated charcoal, most important to: **Monitor for vomiting and airway**.
- Airborne substances diluted with: **Fresh air** (or high-flow oxygen).
- EMT primary responsibility poisoned patient: **Supportive care and rapid transport**.
- Acetaminophen overdose most likely causes: **Liver failure**.
- As you enter residence possible overdose: **Ensure scene safety**.
- Atropine sulfate + pralidoxime chloride antidotes for: **Organophosphate poisoning**.
- Before giving activated charcoal: **Ensure patient is conscious and has gag reflex**.
- Common names activated charcoal EXCEPT: **Syrup of ipecac**.
- Delirium tremens (DTs) associated with withdrawal from: **Alcohol**.
- 50-year-old unresponsive alley... slow/shallow breaths, bradycardia, cyanosis, pinpoint pupils, needle tracks: **Opioid overdose**.
- EMTs dispatched teenage male "not acting right"... huffing Freon... unique consideration: **Risk of sudden death from cardiac arrhythmia**.
- Heroin is example of: **Opioid**.
- Hypotension, hypoventilation, pinpoint pupils expected following overdose of: **Opioid**.
- Uncertain how to treat poisoned patient: **Contact poison control**.
- 19-year-old female ingested full bottle amitriptyline (Elavil)... conscious/alert 30 min later... BP 90/50, HR 140 irregular, RR 22 adequate: **Most alert for seizures and dysrhythmias**.
- Injected poisons impossible to dilute/remove because: **They enter bloodstream directly**.
- Most important determine patient weight for toxic ingestion: **To calculate antidote dose**.
- Most poisonings occur via: **Ingestion** route.
- Naloxone (Narcan) reverses effects of: **Opioids**.

- Signs/symptoms sympathomimetic overdose: **Tachycardia, hypertension, agitation**.
- Signs absorbed poison exposure EXCEPT: **Pinpoint pupils** (that's opioid).
- Substance abuse MOST accurately defined as: **Misuse of a substance causing harm**.
- Major side effect activated charcoal: **Vomiting**.
- Poison control gives most info if center: **Is given exact substance and amount**.
- Poisoning causes burns around mouth in children: **Caustic ingestion** (acids/alkalis).
- Known alcoholic patient severe chest/abdominal trauma: **Be concerned for coagulopathy** (bleeding risk).
- Which drug is NOT sedative-hypnotic: **Cocaine** (stimulant).
- LEAST pertinent initial question toxic ingestion: **Patient's age** (already known).
- Vital signs acute cocaine overdose MOST likely: **Tachycardia, hypertension**.
- Inhaled poisons statement correct: **May cause systemic effects**.
- Salmonella bacterium correct: **Common cause of food poisoning**.
- Patient ingested codeine/acetaminophen/hydrocodone... unresponsive, slow/shallow breathing, slow/weak pulse: **Provide ventilatory assistance** (and naloxone).
- 39-year-old female nursery... semiconscious, copious saliva, incontinent urine, very slow pulse: **Organophosphate poisoning** (provide atropine if protocol, ventilate).
- Wife unresponsive... empty hydrocodone bottle refilled yesterday... RR 8 shallow, HR 40 weak: **Provide ventilatory assistance** (and naloxone).
- College campus young male agitated... dried blood nostrils... BP 200/110, rapid irregular pulse: **Cocaine overdose** (provide supportive care, rapid transport).
- Young female sexual assault... remembers drinking beer... awoke in motel: **Suspect date-rape drug** (e.g., GHB/rohypnol).
- Paramedic administers atropine to 49-year-old bradycardia: **Expect dry mouth and tachycardia** (side effects).
- Priority surface contact poisoning: **Decontamination** (remove clothing, flush skin).
- County jail intoxicated inmate... responsive to pain only, slow/shallow breaths: **Most concerned that patient has respiratory depression** (provide ventilations).

Quick Reference Table (High-Yield Answers)

Question Theme	Key Answer
25yo heroin OD unresponsive slow/shallow breathing bradycardic track marks	Provide ventilatory assistance
3yo ingested plant leaves unknown type	Contact poison control
4yo ingested unknown acetaminophen... conscious no distress	Contact poison control
49yo confusion/sweating/visual hallucinations heavy drinker possible seizure	Delirium tremens
Construction worker dry powder on arm intense pain	Brush off + flush with water

Hypnotic drug	Induces sleep
Alcoholic fell balcony... shock signs	Concern for coagulopathy/bleeding
Rapid breathing/nausea/vomiting/ringing ears/hyperthermia	Salicylate overdose
Routine misuse needing increasing amounts	Tolerance
Activated charcoal given because	Adsorbs toxins
Activated charcoal indicated	Certain oral poisons
After activated charcoal most important	Monitor for vomiting
Airborne substances diluted with	Fresh air
EMT primary responsibility poisoned	Supportive care + rapid transport
Acetaminophen overdose most likely	Liver failure
Entering possible overdose residence	Scene safety
Atropine + pralidoxime antidotes	Organophosphate
Before activated charcoal	Ensure gag reflex
Common names activated charcoal EXCEPT	Syrup of ipecac
Delirium tremens withdrawal	Alcohol
50yo unresponsive alley... pinpoint pupils, needle tracks	Opioid overdose
Teen huffing Freon unique consideration	Risk sudden cardiac death
Heroin example of	Opioid
Hypotension/hypoventilation/pinpoint pupils	Opioid overdose
Uncertain how to treat poison	Contact poison control
19yo amitriptyline ingestion 30 min... low BP, tachycardia irregular	Seizures and dysrhythmias
Injected poisons impossible dilute/remove	Enter bloodstream directly
Most important patient weight toxic ingestion	Calculate antidote dose

Most poisonings via	Ingestion
Naloxone reverses	Opioids
Sympathomimetic overdose signs	Tachycardia, hypertension, agitation
Absorbed poison signs EXCEPT	Pinpoint pupils
Substance abuse definition	Misuse causing harm
Major side effect activated charcoal	Vomiting
Poison control most info if	Given exact substance/amount
Burns around mouth children	Caustic ingestion
Alcoholic severe chest/abdomen trauma	Coagulopathy/bleeding risk
NOT sedative-hypnotic	Cocaine
LEAST pertinent initial toxic ingestion question	Patient's age
Cocaine overdose vitals	Tachycardia, hypertension
Inhaled poisons correct	May cause systemic effects
Salmonella correct	Food poisoning
Codeine/acetaminophen/hydrocodone OD... unresponsive slow breathing	Ventilatory assistance
39yo nursery semiconscious copious saliva incontinent slow pulse	Organophosphate poisoning
Wife unresponsive... empty hydrocodone bottle	Ventilatory assistance
College campus agitated... dried blood nostrils high BP	Cocaine overdose
Young female sexual assault... remembers drinking beer	Date-rape drug
Paramedic atropine bradycardia side effect	Dry mouth/tachycardia
Priority surface contact poisoning	Decontamination
Jail intoxicated inmate responsive pain only slow breaths	Respiratory depression

Study Tips for Chapter 22

- Memorize **opioid toxidrome** — Pinpoint pupils, respiratory depression, bradycardia (naloxone reverses).
- Know **activated charcoal** — Give only if conscious, gag reflex intact, within 1–2 hours, per medical control.
- Practice **scene safety** — Needles, chemicals, gases first.
- Review **common ingestions** — Acetaminophen (liver), salicylates (tinnitus, hyperventilation), opioids (respiratory depression).
- Focus on **supportive care** — Airway/breathing is priority in overdose.
- Use mnemonics: **SLUDGE** for cholinergic poisoning.