

FLASHCARDS BODY SYSTEMS

1. Integumentary System

Q: What are the 4 main functions of the skin?

A: Protection, temperature regulation, sensation, vitamin D synthesis.

Q: Which layer of skin contains sweat glands and hair follicles?

A: Dermis.

Q: What is the body's first defense against pathogens?

A: Skin (physical barrier).

Q: What condition results from prolonged pressure on skin?

A: Pressure ulcer (decubitus ulcer).

Q: How does the skin regulate body temperature?

A: Sweating (cooling) and vasodilation/vasoconstriction (blood flow).

2. Skeletal System

5. Q: How many bones are in the adult human body?

A: 206.

Q: What type of joint is the knee?

A: Synovial joint (hinge joint).

Q: Which bone protects the brain?

A: Skull (cranium).

Q: What is the function of red bone marrow?

A: Produces blood cells (hematopoiesis).

Q: What are ribs 1–7 called?

A: True ribs (attach directly to sternum).

Q: What is the collarbone called?

A: Clavicle.

Q: Which mineral is stored in bones?

A: Calcium.

Q: What is a compound fracture?

A: Bone breaks through the skin.

Q: What connects bone to bone?

A: Ligaments.

Q: Which spinal curvature abnormality involves a hunched back?

A: Kyphosis.

3. Muscular System

Q: What connects muscle to bone?

A: Tendons.

Q: Which muscle type is involuntary?

A: Smooth muscle (e.g., intestines) and cardiac muscle.

Q: What is the strongest muscle in the body?

A: Masseter (jaw muscle).

Q: What causes muscle cramps?

A: Dehydration, electrolyte imbalance, overuse.

Q: What is the function of the diaphragm?

A: Primary muscle for breathing (contracts during inhalation).

Q: What is rhabdomyolysis?

A: Muscle breakdown releasing toxic proteins (e.g., from crush injuries).

Q: Which muscle group extends the knee?

A: Quadriceps.

Q: What is the term for muscle wasting?

A: Atrophy.

Q: What neurotransmitter stimulates muscle contraction?

A: Acetylcholine.

Q: What is a strain?

A: Overstretched or torn muscle.

4. Nervous System

Q: What are the 3 parts of the brainstem?

A: Midbrain, pons, medulla oblongata.

Q: Which part of the brain controls balance?

A: Cerebellum.

Q: What is the autonomic nervous system responsible for?

A: Involuntary functions (e.g., heart rate, digestion).

Q: What is the fight-or-flight response controlled by?

A: Sympathetic nervous system.

Q: What is the resting state of a neuron called?

A: Polarization.

Q: What is a concussion?

A: Temporary brain dysfunction from head trauma.

Q: What is Cushing's triad?

A: Signs of increased ICP: hypertension, bradycardia, irregular respirations.

Q: What is the function of the hypothalamus?

A: Regulates temperature, hunger, thirst, and hormones.

Q: What is the Glasgow Coma Scale used for?

A: Assessing level of consciousness (eye, verbal, motor response).

Q: What is a stroke in the brain's right side likely to affect?

A: Left side of the body (and vice versa).

Q: What is the role of the myelin sheath?

A: Speeds up nerve impulse transmission.

Q: What is the term for "pinched nerve" pain radiating down the leg?

A: Sciatica.

Q: What part of the neuron receives signals?

A: Dendrites.

Q: What is the sympathetic trunk?

A: A chain of ganglia alongside the spinal cord.

Q: What is Broca's area responsible for?

A: Speech production.

5. Cardiovascular System

40. Q: Which artery carries deoxygenated blood?

A: Pulmonary artery.

Q: What is the normal adult heart rate?

A: 60–100 bpm.

Q: What is the largest artery in the body?

A: Aorta.

Q: What is the pacemaker of the heart?

A: SA node (sinoatrial node).

Q: What is myocardial infarction?

A: Heart attack (blocked coronary artery).

Q: What is the term for low blood volume?

A: Hypovolemia.

Q: What is the "lub-dub" sound caused by?

A: Closing of heart valves (AV then semilunar).

Q: What is the medical term for a blood clot?

A: Thrombus.

Q: What is the function of the coronary arteries?

A: Supply blood to the heart muscle.

Q: What is the difference between angina and MI?

A: Angina is temporary heart pain; MI is permanent damage.

Q: What is the normal BP range for adults?

A: 120/80 mmHg.

Q: What is the term for high blood pressure?

A: Hypertension.

Q: What is the first sign of shock?

A: Tachycardia (rapid pulse).

Q: What is the function of capillaries?

A: Exchange oxygen/nutrients with tissues.

Q: What is the term for a weakened artery wall bulge?

A: Aneurysm.

6. Respiratory System

Q: What is the primary muscle for breathing?

A: Diaphragm.

Q: Where does gas exchange occur?

A: Alveoli.

Q: What is the normal respiratory rate for adults?

A: 12–20 breaths/min.

Q: What is the Adam's apple?

A: Laryngeal prominence (part of the larynx).

Q: What is the term for difficulty breathing?

A: Dyspnea.

Q: What is the purpose of surfactant in the lungs?

A: Reduces surface tension to prevent alveoli collapse.

Q: What is the most common cause of airway obstruction?

A: Tongue (in unconscious patients).

Q: What is the term for bluish skin from lack of oxygen?

A: Cyanosis.

Q: What is the difference between emphysema and chronic bronchitis?

A: Emphysema destroys alveoli; bronchitis inflames airways.

Q: What is the function of the epiglottis?

A: Prevents food from entering the trachea.

7. EMT-Specific Scenarios

Q: What are the ABCs of patient assessment?

A: Airway, Breathing, Circulation.

Q: How do you treat hypoglycemia?

A: Administer oral glucose (if conscious).

Q: What is the first step in bleeding control?

A: Direct pressure.

Q: What is the recovery position used for?

A: Unconscious, breathing patients to maintain airway.

Q: What are signs of opioid overdose?

A: Pinpoint pupils, respiratory depression.

Q: How do you treat anaphylaxis?

A: Epinephrine (EpiPen), oxygen, antihistamines.

Q: What is the rule of nines for burns?

A: Estimates total body surface area burned.

Q: What is the first step in CPR?

A: Check for responsiveness and call for help.

Q: What is the difference between a stroke and TIA?

A: TIA symptoms resolve within 24 hours.

Q: What is the purpose of a tourniquet?

A: Stop severe arterial bleeding (last resort).

8. Bonus Cards (15 Cards)

Q: What is the largest organ in the body?

A: Skin.

Q: What is the normal oxygen saturation (SpO₂) level?

A: 95–100%.

Q: What is the term for low blood sugar?

A: Hypoglycemia.

Q: What is the term for difficulty swallowing?

A: Dysphagia.

Q: What is the most common cause of cardiac arrest?

A: Ventricular fibrillation.

9. Advanced Cardiovascular (10 Cards)

Q: What is the difference between STEMI and NSTEMI?

A: STEMI shows ST elevation on ECG (complete blockage); NSTEMI shows partial blockage.

Q: What are the 3 types of shock EMTs can treat?

A: Hypovolemic, distributive (septic/anaphylactic), obstructive (e.g., tension pneumothorax).

Q: What is pulsus paradoxus?

A: Abnormally large BP drop during inspiration (>10 mmHg), seen in cardiac tamponade.

Q: What are the 5 H's and T's of PEA arrest?

A: Hypovolemia, Hypoxia, Hydrogen ions (acidosis), Hyper/Hypokalemia, Hypothermia; Tamponade, Tension pneumo, Toxins, Thrombosis (pulmonary), Thrombosis (coronary).

Q: What ECG finding indicates hyperkalemia?

A: Tall, peaked T waves.

Q: What is Beck's triad?

A: Signs of cardiac tamponade: JVD, muffled heart sounds, hypotension.

Q: What is the difference between unstable and stable angina?

A: Unstable occurs at rest/worsening pattern; stable is predictable with exertion.

Q: What is the most common arrhythmia in cardiac arrest?

A: Ventricular fibrillation.

Q: What is the treatment for ventricular tachycardia with a pulse?

A: Amiodarone or synchronized cardioversion.

Q: What is the most common cause of right-sided heart failure?

A: Left-sided heart failure (causes pulmonary hypertension).

10. Respiratory Emergencies (10 Cards)

Q: What are the signs of respiratory failure?

A: Altered mental status, cyanosis, accessory muscle use, SpO₂ <90%.

Q: What is the difference between COPD and asthma?

A: COPD is irreversible; asthma is reversible bronchospasm.

Q: What is the hallmark of a tension pneumothorax?

A: Tracheal deviation, JVD, unilateral absent breath sounds.

Q: What is the treatment for anaphylaxis-induced stridor?

A: Epinephrine 1:1,000 IM, consider nebulized epi.

Q: What is the most common cause of upper airway obstruction in adults?

A: Foreign body (food).

Q: What is the difference between rhonchi and rales?

A: Rhonchi are low-pitched (mucus); rales are crackles (fluid).

Q: What is the normal end-tidal CO₂ (EtCO₂) range?

A: 35-45 mmHg.

Q: What does a "shark fin" waveform on capnography indicate?

A: Severe bronchospasm (e.g., asthma/COPD exacerbation).

Q: What is the first-line treatment for COPD exacerbation?

A: Oxygen (controlled), bronchodilators, steroids.

Q: What is the most common cause of pulmonary embolism?

A: Deep vein thrombosis (DVT).

11. Neurological Emergencies (10 Cards)

Q: What are the 3 types of strokes?

A: Ischemic (87%), hemorrhagic (10%), TIA (transient).

Q: What is the Cincinnati Prehospital Stroke Scale?

A: Facial droop, arm drift, abnormal speech.

Q: What is the difference between a seizure and syncope?

A: Seizures have postictal state; syncope has rapid recovery.

Q: What is the most common cause of seizures in adults?

A: Non-compliance with anti-epileptics.

Q: What is the triad of Cushing's reflex?

A: Hypertension, bradycardia, irregular respirations (ICP↑).

Q: What is the most sensitive sign of increased ICP?

A: Altered mental status.

Q: What is the difference between epidural and subdural hematoma?

A: Epidural is arterial (lucid interval); subdural is venous (slow bleed).

Q: What is the treatment for status epilepticus?

A: Benzodiazepines (e.g., midazolam IM/IN).

Q: What is autonomic dysreflexia?

A: Life-threatening HTN in spinal cord injuries (T6 or above).

Q: What is the most common cause of altered mental status in EMS?

A: Hypoglycemia.

12. Trauma (15 Cards)

Q: What is the first priority in trauma assessment?

A: Control massive hemorrhage (MARCH protocol).

Q: What are the 5 lethal chest injuries?

A: Tension pneumo, cardiac tamponade, massive hemothorax, flail chest, open pneumothorax.

Q: What is the treatment for flail chest?

A: Positive pressure ventilation (CPAP/BiPAP if available).

Q: What is the Kehr's sign?

A: Left shoulder pain (referred from splenic injury).

Q: What is the most common injury in blunt chest trauma?

A: Rib fractures.

Q: What is the difference between a Grade III and IV splenic injury?

A: Grade III: Subcapsular hematoma >50%; Grade IV: Laceration involving vessels.

Q: What is the "triad of death" in trauma?

A: Hypothermia, acidosis, coagulopathy.

Q: What is the treatment for a sucking chest wound?

A: Occlusive dressing taped on 3 sides.

Q: What is the most sensitive sign of pelvic fracture?

A: Pelvic instability on exam.

Q: What is the #1 cause of preventable trauma death?

A: Airway obstruction.

Q: What is the Parkland formula for burns?

A: $4 \text{ mL LR} \times \text{kg} \times \% \text{TBSA}$ (1/2 in first 8h).

Q: What is the most common complication of fractures?

A: Fat embolism syndrome (long bones).

Q: What is the difference between a sprain and strain?

A: Sprain = ligament; strain = muscle/tendon.

Q: What is the treatment for compartment syndrome?

A: Rapid transport for fasciotomy.

Q: What is the most common spinal cord injury in EMS?

A: C5-C7 (whiplash mechanism).

13. Medical Emergencies (15 Cards)

Q: What is the most common cause of abdominal pain in EMS?

A: Non-specific (followed by appendicitis, cholecystitis).

Q: What is the difference between DKA and HHS?

A: DKA has ketones + acidosis (pH <7.3); HHS has extreme hyperglycemia (>600).

Q: What is the treatment for serotonin syndrome?

A: Benzodiazepines, cooling, cyproheptadine.

Q: What is the most common electrolyte imbalance in alcoholics?

A: Hypomagnesemia.

Q: What is the triad of opioid overdose?

A: Pinpoint pupils, respiratory depression, coma.

Q: What is the antidote for acetaminophen overdose?

A: N-acetylcysteine (NAC).

Q: What is the most common cause of GI bleeding in EMS?

A: Peptic ulcer disease.

Q: What is the difference between sepsis and septic shock?

A: Shock = sepsis + hypotension unresponsive to fluids.

Q: What is the most common arrhythmia in hyperthyroidism?

A: Atrial fibrillation.

Q: What is the treatment for lithium toxicity?

A: IV fluids, hemodialysis if severe.

Q: What is the most common cause of syncope in young adults?

A: Vasovagal (neurocardiogenic).

Q: What is the difference between heat stroke and exhaustion?

A: Stroke involves CNS dysfunction (AMS, hot/dry skin).

Q: What is the most sensitive sign of hypothermia?

A: Shivering (stops below 90°F/32°C).

Q: What is the treatment for severe hyperthermia (>104°F)?

A: Cold water immersion + benzodiazepines.

Q: What is the most common cause of death in dialysis patients?

A: Cardiovascular disease.

14. OB/GYN & Pediatrics (10 Cards)

Q: What is the most common OB emergency in EMS?

A: Labor/delivery.

Q: What are the 3 stages of labor?

A: 1) Dilation, 2) Delivery, 3) Placenta.

Q: What is the treatment for eclampsia?

A: Magnesium sulfate, delivery.

Q: What is the most common cause of pediatric cardiac arrest?

A: Respiratory failure.

Q: What is the pediatric dose of epinephrine for anaphylaxis?

A: 0.15 mg IM (0.3 mg for adults).

Q: What is the most sensitive sign of dehydration in infants?

A: Delayed capillary refill (>2 sec).

Q: What is the difference between croup and epiglottitis?

A: Croup = viral (barking cough); epiglottitis = bacterial (drooling, tripod position).

Q: What is the treatment for neonatal resuscitation?

A: Warm, dry, stimulate, PPV if needed (40-60/min).

Q: What is the most common congenital heart defect?

A: Ventricular septal defect (VSD).

Q: What is the pediatric GCS score for "inappropriate words"?

A: 3 (verbal response).

15. EMS Operations (10 Cards)

Q: What are the 5 rights of medication administration?

A: Right patient, drug, dose, route, time.

Q: What is the most common medication error in EMS?

A: Wrong dose.

Q: What is the difference between abandonment and negligence?

A: Abandonment = leaving a patient; negligence = failing standard of care.

Q: What is the most common cause of EMS provider injury?

A: Lifting injuries.

Q: What is the treatment for a needlestick exposure?

A: Wash, report, PEP (post-exposure prophylaxis) if high-risk.

Q: What is the most common cause of ambulance crashes?

A: Intersection collisions.

Q: What is the golden hour in trauma?

A: First 60 minutes where intervention is critical.

Q: What is the difference between MCI and disaster?

A: MCI overwhelms local resources; disaster requires regional/national aid.

Q: What is the START triage color for "delayed"?

A: Yellow.

Q: What is the most common ethical dilemma in EMS?

A: DNR orders vs. family wishes.

16. Pharmacology (10 Cards)

Q: What is the adult dose of aspirin for ACS?

A: 324 mg chewed.

Q: What is the contraindication for nitroglycerin?

A: SBP <90, PDE5 inhibitors (e.g., Viagra).

Q: What is the treatment for beta-blocker overdose?

A: Glucagon.

Q: What is the pediatric dose of naloxone?

A: 0.1 mg/kg (max 2 mg).

Q: What is the most common side effect of morphine?

A: Respiratory depression.

Q: What is the antidote for benzodiazepine overdose?

A: Flumazenil (rarely used).

Q: What is the treatment for organophosphate poisoning?

A: Atropine + pralidoxime.

Q: What is the maximum dose of epinephrine for anaphylaxis?

A: 0.5 mg IM (repeat q5-15min).

Q: What is the first-line drug for SVT?

A: Adenosine (6 mg, then 12 mg).

Q: What is the most dangerous drug interaction with MAOIs?

A: Sympathomimetics (e.g., epi) → hypertensive crisis.

17. Cardiology Deep Dive (10 Cards)

Q: What is the J point on an ECG?

A: End of QRS, start of ST segment.

Q: What is the most common cause of atrial fibrillation?

A: Hypertension.

Q: What is the treatment for 3rd-degree heart block?

A: Transcutaneous pacing.

Q: What is the hallmark of pericarditis on ECG?

A: Diffuse ST elevation + PR depression.

Q: What is the most common cause of sudden cardiac death in young athletes?

A: Hypertrophic cardiomyopathy.

Q: What is the difference between stable and unstable angina?

A: Unstable occurs at rest or with minimal exertion.

Q: What is the most sensitive marker for myocardial infarction?

A: Troponin.

Q: What is the treatment for torsades de pointes?

A: Magnesium sulfate.

Q: What is the most common arrhythmia in COPD patients?

A: Multifocal atrial tachycardia.

Q: What is the EKG finding in hyperkalemia?

A: Peaked T waves, widened QRS.

18. Respiratory Deep Dive (10 Cards)

Q: What is the normal PaO₂ on ABG?

A: 80-100 mmHg.

Q: What is the most common cause of ARDS?

A: Sepsis.

Q: What is the treatment for carbon monoxide poisoning?

A: 100% oxygen (hyperbaric if severe).

Q: What is the most common organism causing community-acquired pneumonia?

A: *Streptococcus pneumoniae*.

Q: What is the hallmark of asthma on spirometry?

A: Reversible airflow obstruction (improves with bronchodilators).

Q: What is the most common cause of pulmonary edema?

A: Left-sided heart failure.

Q: What is the treatment for tension pneumothorax?

A: Needle decompression (2nd ICS, midclavicular line).

Q: What is the most common complication of mechanical ventilation?

A: Barotrauma.

Q: What is the difference between Type 1 and Type 2 respiratory failure?

A: Type 1 = hypoxemia ($\text{PaO}_2 < 60$); Type 2 = hypercapnia ($\text{PaCO}_2 > 50$).

Q: What is the most common cause of hemoptysis?

A: Bronchitis.