



Presents

EMS Study Bullets

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EMS Study Bullets

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What are Baroreceptors?	Located in the carotid sinuses, aortic arch, and wall of the right atrium. These monitor and adjust Blood Pressure.
What are Chemoreceptors?	Located in the Aortic Arch, Pons, and Medulla that respond to chemical substances. Responsible for taste, smell, O2 levels in arterial blood, CO2 concentration, and osmolality of body fluids.
Lab Values for Acid Base Balances:	Normal human PH is 7.35-7.45. PH scale is drawn out as: 0 ----- 7 ----- 14, in which 7 is the PH of water, 0 is Acidic and 14 is Alkalytic. The difference between Resp. or Meta. can be found by looking at the CO2. Normal CO2 levels means it's of Metabolic Nature and Abnormal CO2 levels mean its Respiratory.
Under what circumstances is Sodium Bicarbonate given in an OD?	Tricyclic Antidepressants such as Elavil, Triavil, Tophronil (drugs that end in IL) and Chloramine (Bleach/Ammonia) OD.
Trace the blood circulation in the heart:	Superior/Inferior Vena Cava, Right Atrium, Tricuspid Valve, Right Ventricle, Pulmonary Semi lunar Valve, Pulmonary Artery, Lungs, Pulmonary Veins, Left Atrium, Bicuspid (mitral) Valve, Left Ventricle, Aortic Vein, Aorta, Arteries, Arterioles, Capillaries, Venules, Veins.

Muscles for IM injections.	Deltoid muscle of the upper arm, Dorsogluteal site of the Gluteus Maximus, Ventrogluteal of the Gluteus Medius Muscle, Vastus Lateralis of the Quadriceps Muscle, and the Rectus Femoris in the Anterior Quadriceps Muscle.
What do kidneys expel?	CO2 and Toxins.
How do you treat laryngotracheal bronchitis (croup)?	Viral infection that causes a Seal-like barking cough and is treated with humidified O2.
What is the excretory function of blood?	To remove lactic acid from cells.
SIDS is a concern for how many months after birth?	Up to 6 months.
What is the fluid infusion amount for blood loss?	3x the blood loss. Ex. 500ml of blood loss would require 1500ml of fluid infusion.
What is Diffusion?	Process of gases regulating from higher concentration to lower concentration. Ex. Lungs.

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I recently purchased turbo medic and it is one of the best educational tools I have seen in my 20+ years in EMS. Very easy to follow and great tips and ways to learn. Scott

Turbo Medic, excellent product, still finding more benefits after a couple of months.
Renny, S.

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What is Compensated Shock?	Shock in which the body is still able to maintain perfusion.
What is Decompensated Shock?	Shock in which the body is no longer able to maintain normal perfusion.
What is the treatment for pregnancy toxemia (Eclampsia)?	Give Magnesium Sulfate 4-6gm over 10 mins.
How do you treat diving injuries?	Bends (Caisson's Disease, Decompression Sickness) is caused when rapid ascent leads to O2 bubbles in the body. Place the pt. in Left Lateral Recumbent Position and transport to hyperbaric chamber.
What are the S/S of TB?	Coughing blood, night sweats, fever, and rapid

	weight loss.
How would an Emphysema pt. present?	Pt. have a Hypoxic Drive (form of respiratory drive in which the body uses oxygen chemoreceptors instead of carbon dioxide receptors to regulate the respiratory cycle). Pt. are naturally high in CO2 which makes them look pink in color, pursed lips, tripod position, and barrel chested.
What is Placenta Previa?	When the placenta covers the cervix it causes capillary bleeding. This bleeding can continue throughout the pregnancy and is bright red in color and painless.
What is Placenta Abruptio?	When the placenta tears away from the uterine wall, usually due to trauma and is accompanied with dark, clotted bleeding and severe pain. This is a medical emergency!
What is Gestational DM?	Diabetes that begins during pregnancy and usually clears up after birth. Mother's with Gestational DM have a greater risk of contracting Type II DM later in life.
What is Ante partum?	Prior to delivery of the fetus.
What is Postpartum?	After the delivery of the fetus.
What is Ectopic Pregnancy?	Ectopic Pregnancy is when the ovum (fertilized egg) plants anywhere outside of the uterus. This usually occurs in the fallopian tube (tubal pregnancy) but can occur in the cervix, ovaries, and abdomen. This is a medical emergency due to internal bleeding.

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How is Stroke Volume measured?	Cardiac Output x Heart Rate.
Where is Glucagon produced?	Pancreas.
What is WPW Syndrome?	A syndrome of pre-excitation of the ventricles of the heart due to an accessory pathway known as the bundle of Kent. It is seen as a short PR interval, a U wave, and a long QRS complex.
What drugs are contraindicated in pt. with WPW?	Calcium Channel Blockers such as Cardizem, Digoxin, Digitalis, and Verapamil.
What is a Pulmonary Embolus?	A blockage of the main artery of the lung or one of its branches by a substance that has travelled from elsewhere in the body through the bloodstream. S/S include SOB, CP on inspiration, palpitations, Cyanosis above the nipple line, low O2 sats.
How do you calculate Stroke Volume?	Cardiac Output x Heart Rate.

What is Pulse Pressure?	The difference between Systolic and Diastolic.
How many gtts/min is a KVO rate?	Anything less than 100 gtts/min.
What commonly causes a Dystonic Reaction?	OD on antipsychotic drugs such as Haldol, Thorazine, Compazine, Prochlorperazine, or Stemetil.
What does Decorticate Posturing Indicate?	Posturing caused by Severe Brain Injury in which the Wrists and Elbows flex up towards the body and the legs extend and rotate inward.
What does Decerebrate Posturing Indicate?	Posturing caused by Severe Brain Injury in which the arms are extended by the sides, the head is arched back and the legs are extended and rotated inward.
What is a Drug's Half-Life?	The period of time it takes for a substance undergoing decay to decrease by half.
What are the S/S of a Flail Segment?	Occurs when a segment of the chest wall bones breaks under extreme stress and becomes detached from the rest of the chest wall. You will notice that the Flail Segment will push in on inspiration while the rest of the chest pushed out and will push out during expiration when the rest of the chest is pushing in (paradoxical motion).
What is Hemoglobin?	O2 bearing molecule in Red Blood Cells made from Iron-Rich Heme and Protein.

What is Coup-Counter coup?	When the head is stopped suddenly, as in trauma, the brain which is submerged in CSF will hit the front of the skull and then rebound to the back.
What pt suffer from Hypokalemia and take Lasix?	Renal pt.
What is a Thrombi that arises in deep leg veins?	Deep Vein Thrombosis. S/S include Redness, Swelling, Warmth, and Pain at the site. If the Thrombi breaks free it becomes an Embolus and can migrate to the lungs, called a Pulmonary Embolism.
What is CHF?	The inability of the heart (specifically the Left Ventricle) to adequately supply the body with sufficient blood flow. S/S include SOB (dyspnea) on exertion and SOB when lying flat (orthopnea), these S/S usually increase at night.
How is CO2 expelled from the body?	Through Pulmonary Ventilation.
What happens when you Stimulate the Sympathetic Nervous System?	Activation of the Fight-or-Flight response. Pupils Dilate, Increased HR and Force of Contraction, Bronchodilation, Inhibits GI, Increases Renin Secretion in the Kidneys, and Vasoconstriction.
What is Cholecystitis?	Inflammation of the gall bladder typically caused by the presence of gallstones and a blocking of the cystic duct. S/S include RUQ pain that usually comes on after eating greasy or fatty foods, fever, vomiting, and nausea.

What Anatomical Location does the Miller Blade rest when inserted?	Epiglottis.
What Anatomical Location does the Mac Blade rest when inserted?	Vallecula.
What happens when you Stimulate the Parasympathetic Nervous System?	Activation of the Rest and Digest response. This system promotes digestion, the synthesis of glycogen, and allows for normal function and behavior to return.
What does Boyle's Law State?	For a fixed amount of an ideal gas kept at a fixed temperature, Pressure and Volume are inversely proportional (while one increases, the other decreases).



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What is the Liver?	A vital organ that is responsible for Detoxification, Protein Synthesis, and Production of Biochemicals necessary for Digestion. Also plays major role in metabolism including Glycogen Storage, Decomposition of Red Blood Cells, and Hormone Production.
What is the Pancreas?	A gland organ (organ that synthesizes a substance for release) in the digestive and endocrine system (system that secretes hormones into the bloodstream in order to regulate the body) that produces Insulin, Glucagon, and Pancreatic Juices that contain Digestive Enzymes.
What are the Islets of Langerhans?	The regions of the Pancreas that contain its endocrine (hormone-producing) cells. Alpha Cells produce Glucagon, Beta Cells produce Insulin and Amylin, Delta Cells produce Somatostatin, PP Cells produce Pancreatic Polypeptide, and Epsilon Cells produce Ghrelin.
What is Insulin?	Hormone that is produced in the Islets of Langerhan and regulates energy and glucose metabolism in the body. It causes cells in the Liver, Muscle, and Fat Tissue to take up Glucose from the Blood. When Insulin is absent, Glucose is not taken up by the body cells and the body begins to use Fat as an energy source.
What do Alpha Cells in the Pancreas do?	Produce Glucagon.

What do Beta Cells in the Pancreas do?	Produce Insulin and Amylin.
How do you Treat and Anaphylactic Reaction?	Combi-Vent, Benadryl, Solu-Medrol, Tagamet, and Epi.
What happens if you don't have good Brain Perfusion?	AMS.
What are the Six Rights of Drug Administration?	Right Medication, Dose, Time, Route, Patient, and Documentation.
What is the Half-Life of Amiodarone?	47 Days.
What is the Half-Life of Adenosine?	Less than 5 seconds.
Where do you Splint a Fracture?	Above and Below the Fracture Site.
What is A-Fib?	When the Atria of the heart fibrillate (or quiver) instead of a coordinated contraction.
What are Radiation Injuries?	Damage to organ tissue by exposure to Radiation causes CA, Tumors, and Genetic Damage.
What Cardiac Dysrhythmia is typically caused by Electrocutation?	A-Fib.
What is Atropine Toxicity?	Also known as Anticholinergic Toxicity. S/S include Blurred Vision, Coma, Delirium, Dry Skin, Fever, Flushing, Hallucinations, Memory Loss, Seizures, and Psychosis.
What is Digitalis Toxicity?	Poisoning that occurs when excess doses of Digoxin are

	consumed. S/S include Fatigue, N/V/D, Changes in HR and Rhythm, Loss of Appetite, Visual Disturbances, Confusion, Dizziness, Nightmares, Agitation, and Depression.
What is Lidocaine Toxicity?	Causes Dizziness, Visual Disturbances, HA, and Tinnitus.
What is Neurogenic Shock?	Caused by the sudden loss of the ANS signals to the smooth muscle in the vessel walls due to severe CNS (brain or spinal cord) damage. This causes sudden vasodilation and decreased blood pressure. S/S include: Hypotension, Tachycardia, Warm/Dry Skin, and Priapism.
What is Preload?	The pressure stretching the ventricle of the heart after passive filling of the ventricle and subsequent atrial contraction. Preload is related to volume.
What is Afterload?	The pressure that the chambers of the heart have to generate in order to eject blood out of the heart. Afterload is related to pressure and resistance.
What are Catecholamines?	Sympathomimetic hormones that are released by the adrenal glands in response to stress. (Epi, Norepi, and Dopamine).
What are Tendons?	Connect Muscles to Bone.

What are Ligaments?	Connect Bone to Bone.
Where is an IO Inserted?	Antero-medial aspect of the Tibial Tuberosity.
What are the Pituitary Glands?	Endocrine gland (glands that secrete hormones directly into the blood rather than through a duct), that protrudes off the bottom of the hypothalamus at the base of the brain. Secretes hormones that regulate homeostasis.
What are the Adrenal Glands?	Triangular-Shaped endocrine glands that sit on the top of the kidneys and release hormones in conjunction with stress through the synthesis of corticosteroids and catecholamine's including cortisol and adrenaline.



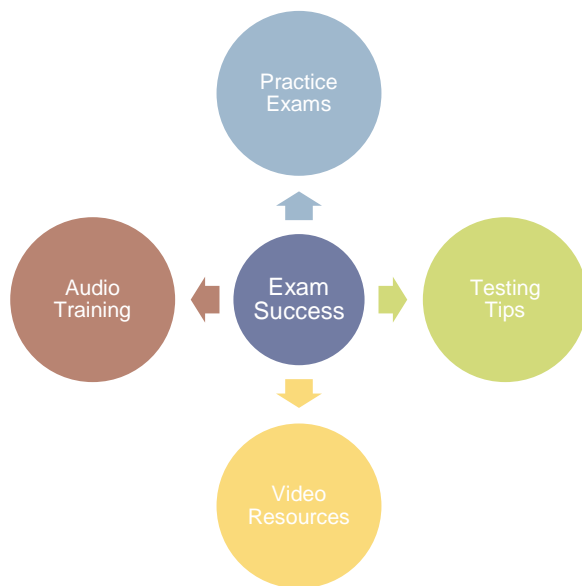
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How would an Emphysema pt. present?	Pt. have a Hypoxic Drive (form of respiratory drive in which the body uses oxygen chemoreceptors instead of carbon dioxide receptors to regulate the respiratory cycle). Pt. are naturally high in CO2 which makes them look pink in color, pursed lips, tripod position, and barrel chested.
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What is DKA?	Increase in Good Glucose causes Kussmaul's Resp. and hyperventilation in an attempt to blow off acid caused by metabolic acidosis.
What are the S/S of Hyperglycemia?	Polyuria (increased urination), polydyspnea (increased thirst), and polyphagia (increased hunger).
What is Insulin Shock?	Hypoglycemia in a person with DM that occurs when a dose of Insulin is taken to regulate the Blood Glucose in the body but instead drops it to dangerously low levels. Pt. presents with pale, clammy skin, AMS, or unresponsive.
Rule of 9's for Adults and Peds:	Adults: Head - 9%, Arm - 9%, Chest - 18%, Back - 18%, Leg - 18%, Groin - 1%. Peds: Head - 18%, Arm - 9%, Chest - 18%, Back - 18%, Leg -14%.
Where does the Upper Airway end?	At the vocal cords.
What is the Minute Volume?	Amount of air in or out in one minute. Found by taking the Tidal Volume (amount of air breathed in or out in one breath, 500 ml) x the Respiratory Rate. MV = TVxRR.
What is Hypercarbia?	Increased Carbon Dioxide in Blood.
What is Eupnea?	Normal breathing.
What should you do if you hear Snoring Respirations and patient is unresponsive?	Adjust airway.

What are Battle Sign and Raccoon Eye's a sign of?	Late sign of Basilar Skull Fracture.
What causes Dilated Pupils?	Cerebral hypoxia, cocaine, epinephrine, and amphetamines.
What causes Fixed Pupils?	Narcotics and Organophosphates.
What causes Unequal Pupils?	Brain injury and ICP.



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What can Rib Fractures cause?	Damage to Spleen, Liver, Lungs, and Kidneys.
Why don't you Decompress by the bottom of the Rib?	Bottom of the rib has blood vessels and nerves.
Where do you Decompress?	2nd Intercostal Space, above the 3rd Rib and along the Midclavicular line.
What is Abduction?	Anatomical term meaning away from the midline.
What is Adduction?	Anatomical term meaning towards the midline.
What is a Communitied Fracture?	A fracture in which bone is broken, splintered or crushed into a number of pieces.
What is a Transverse Fracture?	Fracture of the bone that is straight across.
What is a Greenstick Fracture?	Fracture in a young, soft bone in which the bone bends and partially breaks.
What is a Spiral Fracture?	Fracture in which the bone has been twisted apart and is highly unstable.
What is a Oblique Fracture?	Fracture that is diagonal to a bone's long axis, or one that runs up the side of the bone.
What is a Compound Fracture?	A fracture in which the bone is sticking through the skin.

What is a Dislocation?	Occurs when bones in a joint become displaced or misaligned. It is often caused by a sudden impact to the joint. The ligaments always become damaged as a result of a dislocation.
How do we treat Dislocations?	Splint in the same position as we find them even if there is no pulse.
What are possible Complications of Fractures and Dislocations?	Nerve or Vascular Damage.
What is the Most common Fracture of the body?	The Clavicle.
What Leg Fracture can we NOT use the Traction Splint on?	Used on Femur Fracture and must not have a lower leg fracture.
Can Epinephrine break Status Asthmaticus?	No.
What type of people typically get Pneumonia?	Elderly, Children, and HIV Patients.
What are the S/S of Pneumonia?	Gradual SOB, Fever, and Rhonchi.
What Respiratory noise do you hear when a patient has a Pulmonary Embolus?	Rales.
Who is a Greater risk for a Pulmonary Embolus?	Females, Birth Control Pills, Recent Surgery, S/P Delivery, DVT's, and patients that are bed ridden.

What is a Carpopedal Spasm?	Numbness and tingling in hands that is caused by hypocalcemia.
In a Seizure, what does Tonic mean?	Tightening of muscles.
In a Seizure, what does Clonic mean?	Muscle Relaxation.
What should we do for a patient that is Actively Seizing?	Protect patient, Nothing in the mouth, Position and Suction if necessary, and check sugar level.
What is Grave's Disease?	Hyperthyroid.
What is Cushing's Disease?	Overproduction of Adrenal Hormones.
What is Cystitis?	Bladder infection. The most common urinary tract infection.
What is Murphy's Sign?	S/S of Cholecystitis.
What are Tall, Peaked, T-Waves on the EKG?	Hyperkalemia.
What Causes skin Pallor?	Vasoconstriction.
What is Rhonchi?	Fluid or Mucous in Large Airway.
Where are Rales heard at?	Lower Airway (Alveoli) Fluid.
What is the Most Common Airway obstruction?	Tongue.
Where is Poor Airway Compliance seen?	Sucking chest wounds, Tension pneumo, and Flail Segment. (NOT pleurisy or pleuritis).

What is a Major problem with the Catheter through the Needle System?	Catheter Embolus.
What is Active Transport?	Movement of fluid or molecules through cell membranes against a concentration and requires energy.
Where are Hydrogen Ions eliminated?	The Kidneys.
Where are the Hydrogen Protons located that help Balance pH?	The Kidneys.
How do you correct Respiratory Acidosis?	Hyperventilate.

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Stay safe

Jim Hoffman