Usmle anatomy

Third nerve passes between posterior cerebral artery and superior cerebellar artery

Facial nerve supplies lacrimal, submandibular and sublingual glands

Posterior cruciate attaches to the posterior part of the intercondylar area of tibia and the anterior lateral surface of the medial condyle of femur

The anterior cruciate attaches to the anterior portion of the intercondylar tibia and to the posterior medial surface of the lateral condyle of the femur

Spleen is supplied by splenic artery from celiac but is not a foregut derivative. It is from mesodermal origin

Medial femoral circumflex artery traverses the neck of femur posteriorly and gives the majority of the blood supply to the femoral head and neck

Aortic isthmus is the most common site of injury for acceleration and deceleration

Superior vena cava is a derivative from cardinal veins

Nursemaids elbow: sudden traction of the. Pronated outstretched hand of a child leading to tearing of annular ligament of the radial head

Area postrema is on the dorsal surface of medulla and at the caudal end of 4th ventricle

Crutch palsy injures radial nerve

Thalamic syndrome is sensory loss of the contralateral face and body without weakness

First arch syndrome: abnormalities of the mandible, maxilla, malleus, incus, zygoma, vomer, palate and temporal bone, trigeminal nerve, muscles of mastication, ant belly of tibia
Medullary carcinoma of thyroid forms uniform polygonal or spindle shape with extracellular amyloid (calcitonin) that stains Congo red.

If alkaline phosphatase is high, check the gama glutamyl transpeptidase to differentiate bone from biliary disease, as it will be high in biliary and low in bone disease.

Hyperprolactinemia causes inhibition of GNRH which then might precipitate osteoporosis.

In constrictive diseases, during inspiration, more preload to right heart but the heart is not compliant so the blood will push the inter-ventricular septum and lowering the volume of left ventricle leading to decrease in systolic pressure. This doesn’t happen in normal situations.

Hibernating heart is the presence of repetitive ischemia of myocytes leading to reversible loss of contraction that can be fixed with reperfusion modalities, documented by an increase in Ejection Fraction after reperfusion.

HIV1 protease inhibitors and steroids lead to fat redistribution and Cushing like.

Statins with fibrates increase the risk of myopathy.

Fibrates (inhibits bile acid synthesis) and cholestyramine (inhibits bile acid reabsorption) increase the risk for cholesterol gallstones.

Filgrastim is colony stimulating factor used to counteract neutropenia.

Dexrazoxane is iron chelating against anthracyclines cardiotoxicity.

Amifostine to decrease nephrotoxicity ass with platinum and alkylating agents.

Acrolein is the substance that causes hemorrhagic cystitis and is counteracted by mesna.

In acute myeloid leukemia, the diagnosis is nearly always done by cytocentrifuge slide requiring bone marrow aspirate.
Genetics

Early Alzheimer's with app 21, presinilin 1 on 14, presinilin 2 on 1
Late Alzheimer's with apolipo e4

Xeroderma pigmentosum due to DNA excision repair

Phenylketonurea due to protein misfolding

CF results in early degradation of the ion channel before being sent to the membrane

Tay Sachs has **NO** splenomegaly while Nieman Pick has splenomegaly

Mousy odor is seen in phenylketonuria

Cri du chat partial deletion of 5, Prader Willi and Angelman are partial deletions of 15

Uniparental disomy is like complete mole

Kinesin is seen in anterograde transport of neurotransmitters in vesicles

Adenosine deaminase is the second common cause of severe combined immunodeficiency

Graft versus host is due to graft T-cell sensitization against host MHC. Both cd4 and cd8 take part. GVHD likes to affect skin (desquamation), the liver and GI tract (diarrhea and multiple ulceration). It usually develops within a week of transplanting a lymphocyte rich organ

IL-4 is responsible for B cell growth and isotope switching and secretion of IgE. IL-4 also increases the TH-2 population
Physiology

Alveolar \( O_2 \) equals 150-(\( paco_2/0.8 \))

Myasthenia gravis leads to antibodies binding postsynaptic nicotinic receptors and internalization of the receptors to be degraded by complement fixation leading to decreased end plate potential.

Citrate is added to pack red blood cells for transfusion as a source of energy, but this citrate acts as a calcium and magnesium chelator. So any patient that gets transfused with one whole body blood volume will have increased citrate levels and hypocalcemia leading to tingling and paraesthesia.

Glut 4 is the only receptor that responds to insulin secretion and is found in adipose and skeletal muscles.

Inspiration causes negative intrathoracic pressure and allowing more blood to get to right ventricle but at the same time the capacity of pulmonary vessels increase thereby decreasing the venous return to left heart.

Tryptase is an enzyme from mast cell degranulation seen in anaphylaxis and specific to mast cells.

Lipids are digested in duodenum and absorbed in ileum.

Saturation of urine with citrate decreases precipitation.

Pufferfish tetrodotoxin causes blocking of voltage gated sodium channels.

Cardiac myocytes lose contractility after one minute of ischemia, the loss of contraction is reversible within 30 minutes but will be irreversible afterward.

Age related isolated systolic hypertension is due to aortic stiffening.