

Bsc 2093 aandp i lecture



**ASSIGN
BUSTER**

BSC 2093 A&P I Lecture Exam 2 Review Sheet Chapter 5: The Integumentary System Know figure 5. 1 Identify the different structures that make up the integument including the dermal layers, Sweat and Oil glands, and Nerve Corpuscles that exist there Know that Skin accounts for 7% of the body weight (911 lbs) Know how to calculate percent skin from a given weight and vice versa. Know the name, shape, and characteristics of the cell types that exist in the Epidermis Keratinocytes keratin producing cells that allow the skin to have its protective effect. Melanocytes the spidershaped cells that produce melanin, a dark pigment. Merkel Cells Spikedlike hemisphere cell important for touch sensation Langerhans cells Starshaped macrophages that help activate our immune system Know the difference between Thick and Thin skin and where they can be found (Thick has five layers thin has four) - what is the extra layer that thick skin has? Know the names of the different Epidermal Layers, where they are located, and what cell types or characteristics can be associated with each layer. Stratum Basale - Lower most layer where Melanocytes and Merkel Cells can be found Stratum Corneum - Upper most layer Comprised primarily of dead cells Stratum Granulosum - Layer below Corneum and above Spinosum where keratinocytes can be found releasing granules of lipids and keratin. Stratum Spinosum - The layer above Basale where Langerhans cells and Keratinocytes can be found Know that the Dermis has two layers and their characteristics Papillary thin superficial layer made up of areolar connective tissue Reticular Deeper and thicker layer made up of dense irregular connective tissue Know the different proteins that contribute to skin color, what colors they contribute, and where they are located Melanin (yellow, redishbrown, black) comes from melanocytes What is the enzyme that

synthesizes Melanin? tyrosinase Carotene (yellow to orange) comes from pigments in plants we eat and accumulates in fatty tissue of the hypodermis Hemoglobin (Pinkish) comes from the color of oxygenated blood Know the different Skin Appendages and their characteristics Sebaceous (oil) glands Secrete an oily secretion called Sebum which empties into the hair follicle and skin pores to soften the skin and hair and reduce water loss Two Types of Sweat Glands Eccrine a coiled gland that sits below the surface of the skin and secretes sweat from a long tubular structure onto the skin Apocrine Larger sweat glands that secrete sweat into the hair follicles Nails (Nail Matrix, Cuticle) Know that Nails and Hair are made up of hard keratin Know the different Functions of the Integument and the different components that contribute to that function Chemical Barrier melanin Prevents the effects of UV that can lead to skin cancer, acid pH Low pH due to skin excretion, sebum Bactericidal substance human defensin natural antibiotic cathelicidins prevents streptococcus bacteria Physical/Mechanical Barrier Keratin creates a hardness of skin while glycolipids prevent water loss and water penetration. Know the different Substances that can penetrate the skin barrier are Lipid soluble substances Oxygen, CO₂, Fat soluble vitamins, and steroids Oleoresins Poison Ivy and Poison Oak Organic solvents acetone, dry cleaning solution, paint thinner Salts of heavy metals lead, mercury, and nickel Drug agents called penetration enhancers What is the chemotoxin that can be produced by Lime juice? Biological Barrier Langerhan= s cells are macrophage cells that activate immune response Body Temperature Regulation Sweating Cools the body, blood vessel constriction warms the body Cutaneous Sensation (exteroceptors) Meissner= s corpuscles, Merkel Cells Light pressure and tactile sensations Pacinian receptors Deep

pressure Hair follicle receptors Sensations of the hair Bare nerve endings
Pain stimuli Metabolic Functions Synthesizes Vitamin D & Keratinocyte
enzymes Blood Reservoir 5% of the body= s blood Excretion Water, Salt,
Ammonia, Urea, Uric Acid Know the different disorders that afflict the
Integument and be able to identify them either by description or by looking
at the picture (Figures from the book as well as those used in class) Types of
Hair - Adults have two types of hair. Vellus hair is soft, fine, and usually
short. It may be colorless. This gives the impression of " hairless skin@. In
women, this occurs on the face, chest and back. Terminal hair is longer,
coarser and thicker. Examples are the scalp, pubic and axillary hair in both
men and women. Facial and body hair in men is also of the terminal hair.
Hirsutism B An excess growth of terminal hair in locations where hair growth
in women usually is minimal or absentY. usually occurs in
androgenstimulated locations, such as the face, chest, stomach, back, upper
thighs, upper arms and/or areolae. Hypertrichosis An excess growth of
terminal hair and the vellus hair on the face, chest, stomach, back, upper
thighs, upper arms and areolae becomes dark. Alopecia is a thinning or a
balding of the scalp that can be seen in both men and women Can be caused
by: Acutely High Fever, Surgery, Severe emotional trauma, certain drugs,
proteine deficiency, lactation, and autoimmune disease. Male Pattern Baldness
is a genetically determined sexinfluenced condition. Harlequin Ichthyosis -
An inherited skin disorder which causes the thickening of the keratin skin
layer in fetal skin. 1 in half a million babies are born with Harlequin
Ichthyosis and most die of dehydration. It is 99% fatal, however there is one
exceptionYRyan Gonzales who survived by using Acutane (a antiacne
cream). Vitiligo Skin pigmentation disorder where melanocytes die creating

light patches on the skin Nevus B a rare genetic condition where there is an overproduction of melanocytes creating dark patches of skin Xeroderma Pigmentosum B a rare genetic condition in which DNA repair processes are defective causing susceptibility to chromosome breaks and cancers when exposed to ultraviolet light Port Wine Stain Birth mark caused by an abnormal collection of dermal blood vessels Rosacea Flushing of the skin as dermal blood vessels become engorged which can eventually disfigure the skin Acne is caused by the increase of oil production and the activation of the sebaceous glands during adolescence. Irritations and Dermatitis B Itching and scratching of the skin that can lead to an inflammatory response which can spread Irritations are generally associated with external irritations while dermatitis is an inflammatory response that can lead to itching and scratching in response to an external irritant Psoriasis B Genetic trait that leads to an autoimmune attack that causes severe skin flaking (scales) and lesions of the skin (plaques) Eczema Patches of skin become rough and inflamed leading to itching and bleeding Skin Cancers and Tumors Overgrowth of skin cells Skin Cancers and Tumor - know the different types of cancers and their characteristics Warts Benign cancers that result from virus infection Moles Benign cancers that emerge on the skin Basal Cell Carcinoma cells of the stratum basale rapidly divide Squamous cell carcinoma keratinocytes of the stratum spinosum Melanoma Cancer of melanocytes (pigmented cells) Freckles Epithelioma (Adenoids Cysticum) (Calcification and Pseudoepitheliomatous) Carcinoma of the Parotid What does the Parotid do? Trophic Ulcers Localized breakdown and ulceration due to interference in blood supply Fungal Infections Various Fungi are capable of infecting the skin leading to irritation, inflammation, swelling and skin loss

- What is an example of a fungal infection? (Hint: think Foot) Burns Tissue damage inflicted by heat, electricity, radiation, certain chemicals, and extreme cold 1st degree only the epidermis 2nd degree Epidermis and upper region of the Dermis 3rd degree Burns the entire regions of the skin What image was used at this time to indicate another type of burn besides the ones mentioned above? Toxic Epidermal Necrolysis Syndrome (TENS) B An immunocomplex mediated disorder that causes large sheets of epidermis and the underlying dermal surface to become necrotic. Stevens Johnson Syndrome (SJS) an inflammatory disorder of the skin and mucous membranes (mucocutaneous) that is triggered by an allergic reaction Supernumerary B having more than the typical number of body structures Digits B fingers and toes Breasts B the production of extra mammary tissue in between the mammary and axillary regions Chapter 6: Bones and Skeletal Tissue Know the Three types of cartilage, their characteristics and sub categories, and what they look like (figure 4. 8) Hyaline Cartilages - The most abundant Skeletal cartilage Types of Hyaline include Articular Cartilage ends of most bones Costal Cartilage connects ribs to sternum Respiratory Cartilage forms the skeleton of the larynx and reinforces respiratory passageways Nasal Cartilage supports the external nose Elastic cartilage similar to hyaline except that it has elastic fibers. Found in two locations external ear and the epiglottis Fibrocartilage an intermediate between Hyaline and Elastic that are highly compressible and have great tensile strength. Found in padlike cartilages of the knee (menisci) and the disks between the vertebrae Know that there are 206 bones in the adult human Know that the Skeleton can be separated into Axial and Appendicular Whereby Axial includes: Skull Hyoid Vertebral Column Rib Cage and the

Appendicular includes: The Upper Extremities Clavicle, Scapula, Upper Arm (Humerus), Forearm (Radius and Ulna), and Hand The Lower Extremities Pelvic Girdle, Upper Leg (Femur), Lower Leg (Tibia and Fibula), and Foot

Know the different Bone Types and where they can be found Long Bones - Arm, Leg, Metacarpals, Metatarsals, Phalanges Short Bones - Wrist (Carpals) and Ankle (Tarsals) Flat Bones - Sternum, Os Coxa, Scapula, and Skull Irregular Bones - Vertebrae Round Bones - Knee cap

Know the different Functions of Bones

- 1 Support Provides the body framework and cradles the soft organs
2. Protection Skull protects the brain, the vertebrae protects the spinal cord, and the rib cage protects the lungs
3. Movement Skeletal muscles attach to bones and provide movement
4. Mineral Storage Main reservoir for calcium and phosphate.
5. Blood Cell Formation (hematopoiesis) Blood formation occurs in the marrow cavities of certain bones

Know the different Bone Structures and their definitions

Depressions and Cavities

Foramen an opening in the bone that provides passageway for nerves and blood vessels

Fossa a shallow depression in the bone

Sulcus a groove or furrow

Meatus a canal or long tubelike passageway

Fissure a narrow slit

Sinus A cavity in a bone

Processes

Condyle a rounded knucklelike eminence on a bone that articulates with another bone

Tuberosity A large roughened process where muscle may anchor

Tubercle A small rounded process

Trochanter A very large process on a bone

Crest A narrow ridge of bone

Spine A sharp slender process

Know figure 6. 3 and the different Bone Components and their characteristics

Spongy Bone A honeycomb of small needlelike or flat pieces, trabeculae, making up the inside of the bone

Compact Bone Smooth dense bone that makes up the outer bone

Diaphysis The neck or shaft of a long bone

Epiphysis The ends of long bones

Metaphysis/ Epiphyseal plate The area at which bone growth occurs
Medullary cavity an tubular space in long bones where yellow marrow can be found
Endosteum Connective tissue that lines the interior of the diaphysis and the trabecula of spongy bone
Yellow Marrow Fat marrow
Red Marrow Hematopoetic marrow
Periosteum Connective tissue that surround the outer surface of bones
Articular Cartilage - The hyaline cartilage that surrounds the ends of bones (epiphysis)
Perforating (Sharpey= s) fibers Secures the periosteum to the underlying bone
Know the different Osteo words and definitions associated with them
Osteocytes Spiderlike cells found in bone
Osteoblasts Cells that build bone
Osteoclasts Cells that breakdown bone
Osteon structural unit of compact bone
Osteogenesis The process during development that forms the bony skeleton
Know what Ossification is and the different subcategories and their characteristics
Ossification is the process that produces bone
Osteogenesis
Intramembranous ossification the process by which flat bones of the Skull and the Clavicle are made
Endochondral ossification the process by which all other bones are made whereby Hyaline cartilage skeleton is replaced by bone.
Bone growth occurs after the formation of the bony skeleton until early adulthood
Remodeling and repair is the process by which bones maintain homeostasis even after adulthood
Know what the different hormones do and where they are produced
Growth Hormone - Hormone most responsible for bone growth produced in the Pituitary
Testosterone and Estrogen - hormone(s) responsible for promoting growth spurts and the feminization and masculinization of the bone produced by the sex organs
Calcitonin - stimulates calcium deposit in bone produced by the Thyroid
Parathyroid Hormone - stimulates osteoclasts to breakdown bone produced

by the PT Know the different Bone Fractures Nondisplaced Vs Displaced - Whether or not the bone has moved out of alignment Complete Vs Incomplete - Whether or not the bone is broken all the way through Linear Vs Transverse - Whether the break is parallel or perpendicular to the long axis of the bone Open (compound) Vs Closed (Simple) - Whether or not the break penetrates the skin Know the different Homeostatic Imbalances that can affect Bone, what those disorders look like (pictures shown in class) and their characteristics Gigantism Overproduction of Growth Hormone leads to increases in bone growth Dwarfism Underproduction of Growth Hormone Osteomalacia When Calcium salt deposits are not being made even though osteoids are being produced Rickets When cartilage in the epiphyseal plates are not being calcified leading to bowed legs and deformities in the skull, pelvis, and rib cage. Osteoporosis Disease where bone resorption outpaces bone deposit. Paget's Disease Caused by excessive bone deposit and resorption whereby there is a higher ratio of spongy bone to compact bone What is the famous wrestler's name who suffered from Gigantism? Chapter 7: The Skeleton Know the different bones of the skeleton Figure 7. 1 and 7. 21 Know the Bones of Skull (22 bones) Cranial Bones (Cranium) Frontal Bone Parietal Bone Occipital Bone Temporal Bone Sphenoid Bone Ethmoid Bone Sutural Bone Facial bones Mandible Maxillary Bones Zygomatic Bones Nasal Bones Lacrimal Bones Palatine Bones Vomer Inferior Nasal Conchae Know the Cranial Sutures and what bones they join together Coronal Suture Frontonasal Suture Sagittal suture Lamboidal suture Squamousal suture Occipitomastoid suture Know the openings of the skull Foramen Magnum Infraorbital and Supraorbital Foramen Internal and External Auditory Meatus Foramen Incisive/ Anterior Palatine Foramen Jugular Foramen Mental

Foramen Optic Canal Jugular Foramen Know the different Paranasal Sinuses (Figure 7. 11) Frontal Sinus Ethmoid Sinus Sphenoid Sinus Maxillary Sinus Know the different regions of the Vertebral Column and how many vertebrae are located in each region (Figure 7. 13) Cervical 7 Vertebrae Thoracic 12 Vertebrae Lumbar 5 Vertebrae Sacrum is made up of 5 fused vertebrae Coccyx is made up of 4 fused vertebrae Know the basic structure of the Vertebrae (Figure 7. 15) Body Spinous Process Transverse Process Superior and Inferior Articular Process Vertebral Foramen Pedicle Articular Facet for the Rib Know where you can find the Atlas and the Axis Know the Bony Thorax (Rib Cage) (Figure 7. 19) Sternum Manubrium Clavicle Notch Body Xiphoid process Ribs True Ribs (Vertebrosteral) False Ribs (Vertebrochondral) Floating Ribs (Vertebral) You should be able to identify the bones of the Upper and Lower Extremities (Figure 7. 21) Know the Hand (Figure 7. 26) Know the Pelvic Girdle (7. 27) Only the ones mentioned in class Know the Foot (Figure 7. 31) Know the different disorders that can afflict the skull Gigantiform Cementoma Caused by excessive bone deposit leading to cancerous growth of the Maxilla and/or Mandible. Can be fatal if tumor grows to the extent off blocking all air passageways (also know what it looks like).