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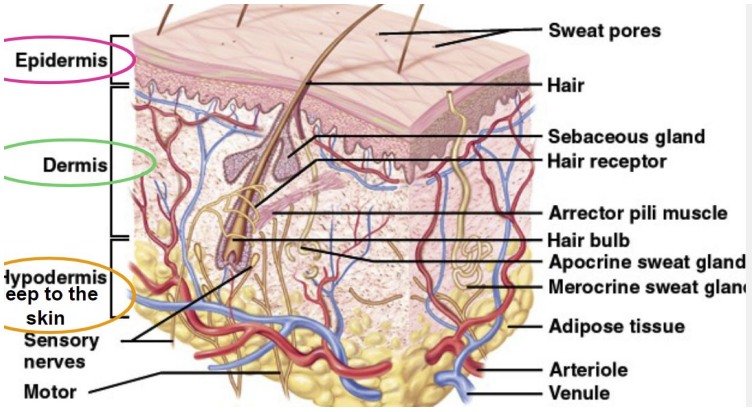
Skin and Oral Mucosa

- The Dental Relevance of Skin and Oral Mucosa
    - We need to be able to distinguish and identify the multiple layers that make up the epidermis/mucosa
    - This allows us to diagnose oral pathologies in the later years

Skin

- The layers of Skin (from outermost to innermost)
    - Epidermis
    - Dermis
    - Hypodermis
    - 

- Types of Skin
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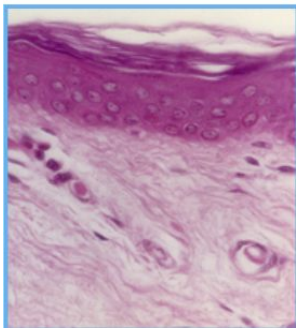
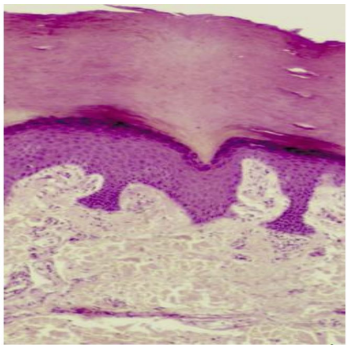
Thin Skin	**Thick Skin**
	
Epidermis Thinner	Epidermis Thicker
Contains Sweat Glands	Contains Sweat Glands
Contains hair follicles and sebaceous glands (known as hairy skin)	Does not Contain hair follicles and sebaceous glands
Not ridged on surface	Ridged on surface (e.g fingerprints)

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- Layers of the Epidermis
  - General Note:
    - cells in epidermis undergo terminal differentiation as the progress towards the surface, through different layers
    - Layers presented from surface to interior
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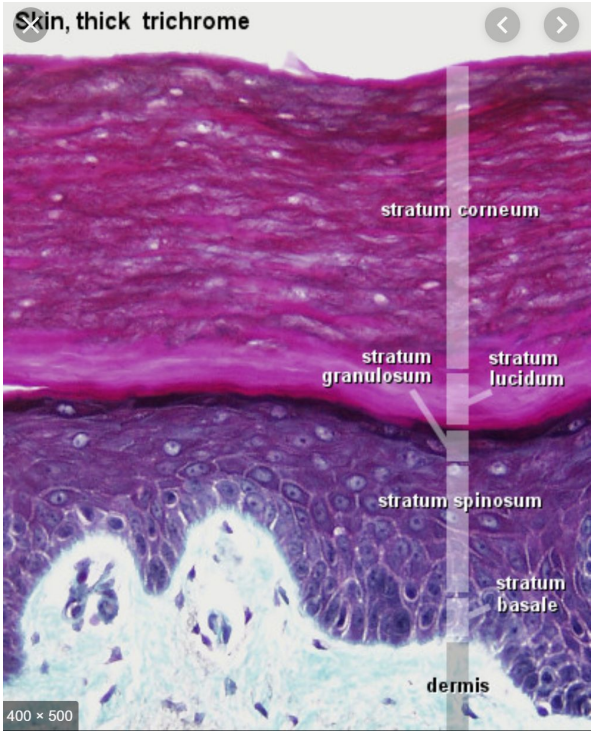
Layers of the epidermis	**Function of Layer**
Stratum Corneum	- Dead cells filled with keratin - Undergo desquamation - Cell loss = cell formation
Stratum Lucidum	- Only apparent in thick skin - Clear due to protein called eleidin
Stratum Granulosum	- Cells Die - Cells contain keratin - Synthesize lamellar granules for waterproofing
Stratum Spinosum	- Cells have extensive desmosomes between them giving spiny appearance - Appear more flattened
Stratum Basale	- Undergoes mitosis - Rate of mitosis = rate of cell loss at corneum layer

  - 

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- Specializations of the Skin
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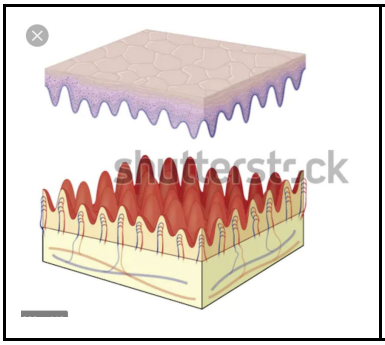
Specialization	**Function**
Melanocytes	- Found in stratum basale - MELANOSOMES produce MELANIN - Has long processes that insert between keratinocytes - Melanin prevents UV damage to nuclei by encapsulating nuclei of keratinocytes - More melanin = darker skin appearance
Langerhans Cells	- Macrophage, a tissue specific professional phagocytic cell - Antigen Presenting cell
Merkel Cells	- Function as mechanoreceptor
Merocrine(ordinary) Sweat glands	- Found in every part of body - Duct directly goes to surface - Secrete Urea (antibacterial) - Aids thermoregulation
Apocrine Sweat Glands	- Only found in axilla (armpit), Groin - Duct connects to hair follicle
Sebaceous Glands	- Only found in thin skin - Duct connects to hair follicle - Holocrine secretion - Secretes sebum - oily secretion high in lipids

- Epidermal/Dermal Junction
  - Irregular junction formed by Dermal Papillae and rete ridges (from the epidermis)
  - Function
    - Adheres Epidermis to dermis via basement membrane and hemidesmosomes
    - Allows for transfer of nutrients and waste
    - The greater the degree and frequency of ridges and papillae, the greater the adhesion and the greater the nutrient supply
      - More nutrient supply allows the epidermis to be thicker



- Dermis
    - Consists of 2 layers
        - Papillary Layer (superficial)
            - Loose CT - few defense cells
            - Highly vascular for nutrient supply
        - Reticular Layer (inferior)
            - Dense irregular CT
            - Fibers in multiple directions → withstand stress in multiple directions

Oral Mucosa

- Mucous membrane
    - Moist lining of a body cavity that is exposed to the external environment

- Layers of Oral Mucosa
    - Epithelium - Similar to epidermis
    - Lamina propria - Similar to Dermis
    - Muscularis Mucosa
        - Layer of muscle that lines the whole Gastro Intestinal Tract
        - Not present in oral cavity

- Function of Oral mucosa

Layer	**Function**

Epithelium	- Protects against pathogens
	  - Functions as physical barrier to entry
	  - Desquamation of cells prevents buildup of bacteria on surface
	  - Defence cells present for phagocytosis
	  - Chemical secretions to neutralize toxins and pathogens

Lamina Propria	- Protects against Pathogens - Defence cells present, able to provide cellular response - Provides mechanical attachment to CT/bone

- Anatomy of the Oral Cavity
    - When labelling diagrams or describing from diagrams, always
        - Describe completely, (e.g Superior/inferior, Left/right)
        - Images presented to you will be as if you are facing a patient
            - Hence, your left = pt right, vice versa

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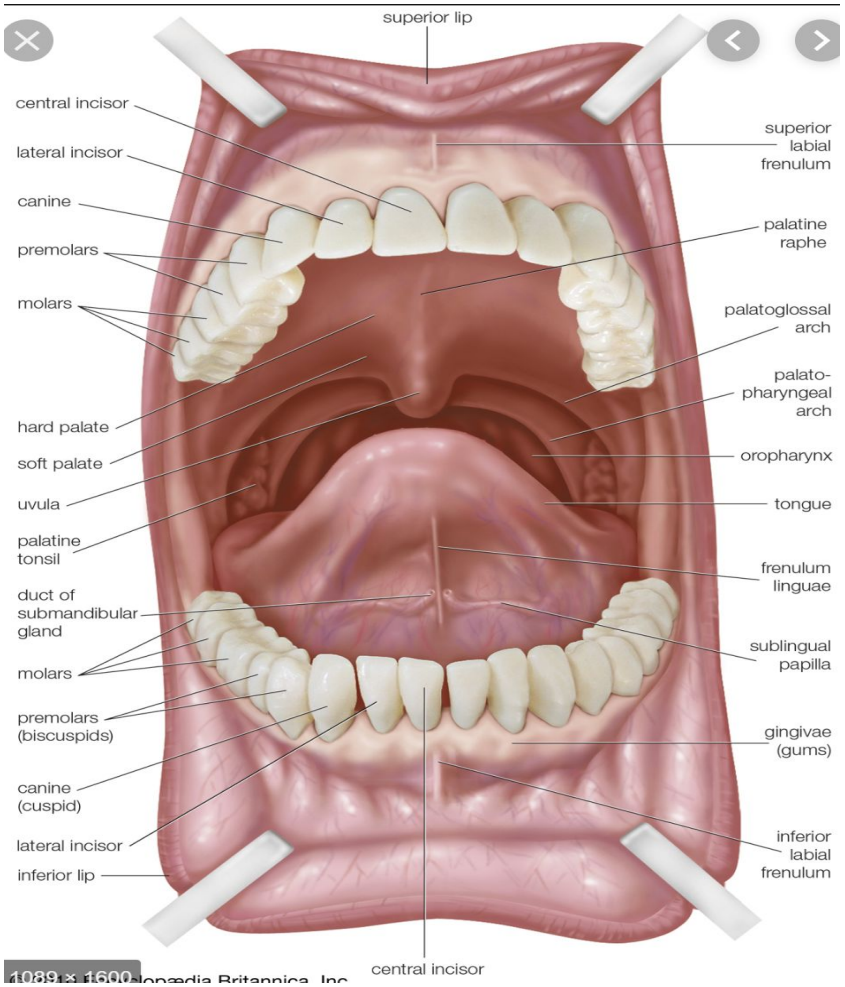

- Types of Oral Mucosa

	keratinisation	**Location**
Lining Mucosa	- Non-keratinised stratified squamous	- Lip - Buccal mucosa - Alveolar mucosa - Soft palate - Floor of mouth - Ventral Tongue
Masticatory Mucosa	- Keratinized Stratified Squamous - Protects against repeated abrasion, physical, thermal, and chemical damage - Resistance to deformation under load	- Roof of mouth/hard palate - Gingiva (col and sulcus/JE not keratinized)
Specialised Mucosa	- Both types found on tongue - Striated muscle - Muscle bundles run in 3	- Dorsal surface of tongue

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	directions	

- How is mucosa Bound ?
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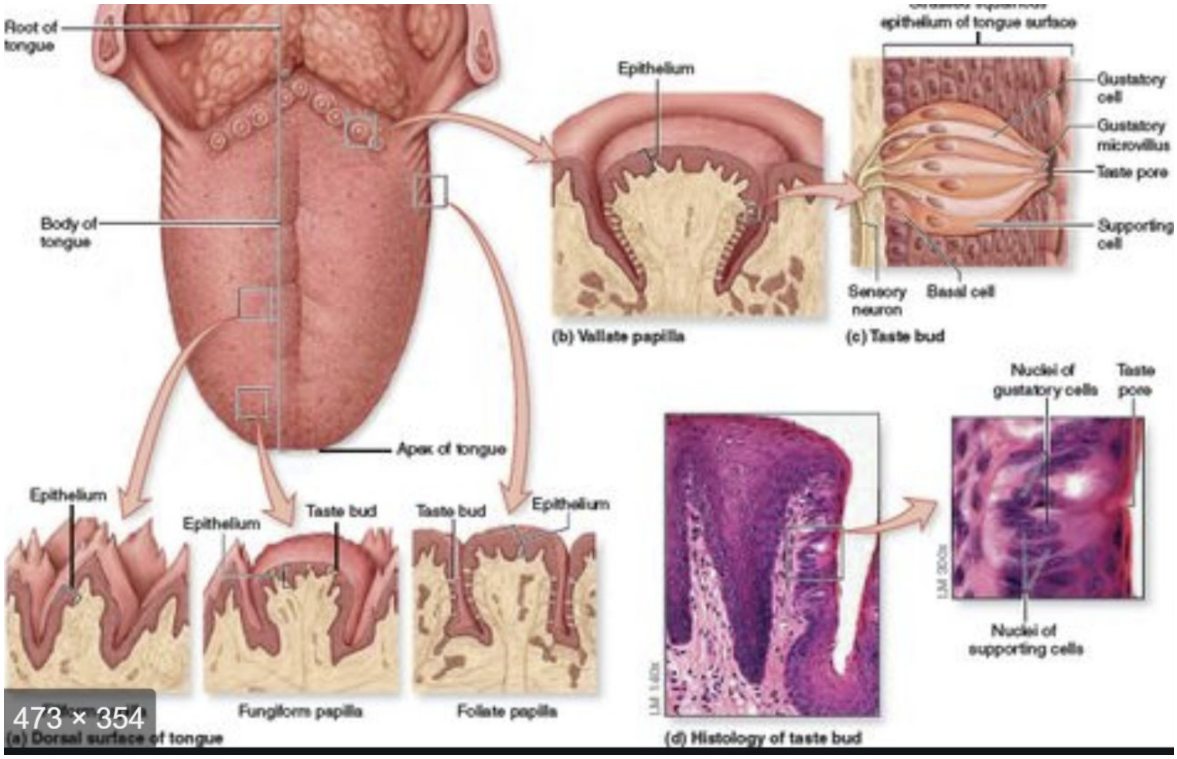
	Submucosa	**Directly to bone**
Where can it be found	- Cheeks - Lips - Hard Palate	- Gingiva - Hard palate

- Papillae of the tongue (specialised mucosa)
  - Filiform → orthokeratinized
    - Smallest
    - Formation of bolus
  - Foliate → parakeratinized + contains taste buds on lateral surface
    - taste
  - Fungiform → parakeratinized + contains taste buds on dorsal surface
    - taste
  - Circumvallate → parakeratinized + contains taste buds on lateral surface
    - taste
    - Von ebners glands → serous secretions found in bottom of trough
    - Have deep trench//trough
    - Largest
  -



- Taste buds
  - Sensory structure
  - Comprised of
    - Sensory cells → contain microvilli which stick out of taste pore
    - Supporting cells
    - Basal cells → involved in cell turnover
  - Process of Taste recognition
    1. Tastant dissolved in saliva
    2. Receptor binds to tastant
    3. AP initiated in sensory cells
    4. AP causes Neurotransmitter release at synapse