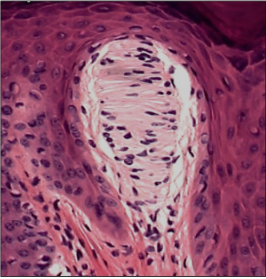
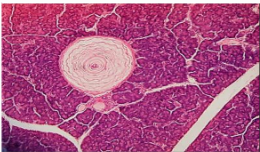


Receptors in epithelium

<u>Name</u>	<u>Description</u>	<u>Function</u>	<u>Location</u>
<p><u>Free nerve endings</u></p>	<ul style="list-style-type: none"> • Simplest receptors • Widely distributed • <u>Unmyelinated</u> sensory nerve fibers 	<p>Receptors for <u>pain & temperature</u></p>	<ol style="list-style-type: none"> 1. Epidermis of skin 2. Corneal 3. Conjunctiva 4. Oral cavity
<p><u>Root hair plexus</u></p>		<ol style="list-style-type: none"> 1. Mechanoreceptors for <u>touch</u> sensation. 2. Sends and receives nerve impulses to and from the brain <u>when hair moves</u> 	<p>Form <u>basket - like structure around the base of hair follicles</u> .</p>
<p><u>Merkel Tactile disc</u></p>	<p><u>In association with Merkel cells</u> (modified epithelial cells) .</p> <p>The Afferent fibers lose its Myelin, penetrates the basement membrane & <u>terminate as a disc (cup) around Merkel cells</u></p>	<ol style="list-style-type: none"> 1. <u>Mechanoreceptors detect touch & pressure.</u> 2. Tactile discrimination 3. Sophisticated sensory tasks 	<p>Present in epidermis (<u>superficial</u>) of the skin of <u>soles, palms and fingers</u> .</p>
<p><u>Neuro epithelium endings</u></p>			<ol style="list-style-type: none"> 1. Taste buds / tongue 2. Olfactory epithelium / nose 3. Organ of Corti / ear 4. Macula utriculi, macula sacculi & crista ampullaris for equilibrium/ ear 5. Photoreceptors / retina

Nerve endings in connective tissue

	<u>Location and function</u>	<u>Shape and structure</u>
<p>Meissner's corpuscles</p> 	<p>Located in the dermal papillae (deep) of skin that is especially sensitive as tips of fingers (Hairless skin).</p> <p>Detect <u>light touch</u> (mechanoreceptors)</p>	<p>1. <u>Oval shape, encapsulated</u> .</p> <p>2. Formed of <u>transversely arranged modified Schwann cell cells</u>.</p> <p>3. Collagenous fibers anchor the corpuscle to the dermo-epidermal junction.</p> <p>4. The afferent axon enter the corpuscle after losing its myelin & spiral up until it <u>ends at upper end of the corpuscle</u> .</p>
<p>Ruffini Corpuscles</p>	<p>Found <u>deep in the dermis of skin especially in the sole</u>.</p> <p>Detect <u>pressure</u> (mechanoreceptors)</p>	<p><u>Fusiform encapsulated</u> .</p> <p>Inside the capsule there is a <u>fluid & collagenous fibers</u>.</p> <p>The aff nerve fiber lose its myelin penetrates the sides of the corpuscle & breaks up into fine branches</p>
<p>Krause end bulbs</p>	<p>1. Found deep in the dermis of the skin .</p> <p>Detect <u>touch/ cold (mechano/ thermo receptors)</u></p>	<p>Rounded , <u>encapsulated</u>.</p> <p>The aff. nerve fiber penetrate the corpuscles after losing its myelin and <u>terminate with coiled ends</u></p>
<p>Pacinian corpuscles</p> 	<p>1. Deep in dermis 2. Periosteum of bone, joint capsule. 3. C.T. of some organs as pancreas .</p> <p>1. Detect deep touch (mechanoreceptors) 2. High frequency vibration 3. Pressure 4. One of the <u>proprioceptors</u></p>	<p><u>Large oval encapsulated</u> .</p> <p>It is <u>formed of 20-50 thin, concentric lamellae</u> of flat Schwan -like cells separated by narrow spaces filled with gel- like material.</p> <p>The aff. nerve fiber Lose its myelin Enter the corpuscle at one pole to end in small expansions. <u>Corpuscle resemble sliced onion</u> in L. section</p>

Nerve endings in connective tissue

	<u>Location and function</u>	<u>Shape and structure</u>
Golgi Tendon organ (tendon spindle)	<p>Found in tendons near the <u>insertion of the muscle fibers</u>.</p> <p>They <u>detect tensions within tendons</u> When <u>muscle contract</u> (<u>proprioceptors</u>)</p>	Sensory nerve penetrates the capsule of the tendon spindle to end around the collagen bundles of the tendon.

- All the followings are neuroepithelial sensory receptors EXCEPT?

- a- Taste buds
- b- Organ of Corti
- c- Macula utriculi
- d- Christa ampullaris
- e- Muscle spindle

- -----specialized receptors that are sensitive to stretch and are located within the skeletal muscle?

- a- Meissner's corpuscles
- b- Tendon spindle
- c- Muscle spindle
- d- Free nerve endings
- e- Pacinian corpuscles