TEST BANK

Subject:

Histology
MSS

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Histology Test Bank

1-Which layer of the epidermis has cells which have keratohyaline granules?

a. Stratum granulosum

b. Stratum lucidum

c. Stratum corneum

d. Stratum spinosum

e. Stratum basale

2-Which layer of the epidermis is less apparent in thin skin?

a. Stratum granulosum

b. Stratum lucidum

c. Stratum corneum

d. Stratum spinosum

e. Stratum basale

3-The papillary layer is part of which layer?

a. Epidermis

b. Dermis

c. Hypodermis

d. Both a and b

e. None of the above

4. Which cell is found in the dermis?

A. Langerhans cell

B. Melanocyte

C. Fibroblast

D. Keratinocyte

E. Merkel cell

5-What is a characteristic of the cells in the epidermis of the skin?

A. Microvilli

B. Stereocilia

C. Cilia

D. Keratinization

E. Both a & b

6-Which of the following layers is only present in thick and hairless epidermis?

A. stratum basale

B. stratum spinosum

C. stratum granulosum

D. stratum lucidum

E. stratum corneum

7. Which of the following is NOT considered an epidermal appendage?

A. Sweat gland

B. Hypodermis

C. Sebaceous glands

D. Hair

E. Nails

8-Membrane coated lamellar granules are characteristics of :

a. Stratum basale

b. Stratum granulosum

c. Stratum spinosum

d. Stratum lucidum

e. Stratum corneum

9-Which cell is a macrophage found in the skin?

a. Kupffer cells

b. Histiocyte

c. Dust cell

d. Langerhans cell

e. Microglia

10-What is the half moon shaped white area on a nail called?

a. Lunula

b. Eponychium

c. Matrix

d. Nail bed

e. Root

11-Which of the following is the most abundant sensory receptor of the skin?

a. Free nerve endings

b. Ruffini's corpuscles

c. Pacinian corpuscles

d. Krause's end bulbs

e. Meissner's corpuscle

12-Which cell is a mechanoreceptors?

a. Langerhans cell

b. Keratinocyte

c. Melanocyte

d. Merkel cell

e. Fibroblast

13-Which cell is the most abundant cell in the epidermis?

a. Langerhans cell

b. Keratinocyte

c. Melanocyte

d. Merkel cell

e. Fibroblast

14- Which layer of the epidermis is also called the stratum germinativum?

a. Stratum basale

b. Stratum spinosum

c. Stratum granulosum

d. Stratum lucidum

e. Stratum corneum.

15-Which of the following components of the epidermis provides sealant between adjacent cells?

a. Keratohyaline granules

b. Glycolipids and lipids

c. Keratin

d. Desmosomes

e. Adherent junctions

16-Which cells derive from precursors originating in the bone marrow and function as antigen-presenting cells in skin?

a. Keratinocytes

b. Langerhans cells

c. Melanocytes

d. Merkel cell

e. Arrector pili

17-Cells responsible for producing the pigment for dark hair are located in which of following?

a. The cortex of the hair shaft

b. Throughout the hair shaft

c. The internal root sheath of the hair

d. The dermal papilla of the hair bulb

e. The hair matrix (zone of dividing and differentiating cells) of

the hair bulb

18-Which of the following separates the hair follicle from the connective tissue of the dermis?

a. External root sheath

b. Internal root sheath

c. Glassy membrane

d. Hair cuticle

e. Medulla

19-Which structure typifies reticular dermis but not papillary dermis?

a. Capillaries

b. Dense irregular connective tissue

c. Meissner tactile corpuscles

d. Sweat gland ducts

e. Type I collagen fibers

20-Which of the following best characterizes sebaceous glands?

a. Its duct drains onto the skin surface.

b. It releases its contents via holocrine secretion.

c. It primarily secretes water and salts.

d. Its secretory units are supplied by adrenergic stimulation.

e. It is located typically in the reticular dermis

21-A 52-year-old woman presents with severe blistering over her buttocks. Analysis of her serum demonstrates the presence of antibodies which by imunohistochemical techniques stain material located at the basement membrane of the epidermis in a biopsy of her skin. The underlying biological mechanism of her skin disorder involves an abnormality in which of the following structures?

a. Macula adherens

b. Gap junctions

c. Hemidesmosomes

d. Zonula occludens (tight junctions)

e. Zonula adherens

22-A 64-year-old woman, who has always been proud of her suntanned, healthy look, is referred to a dermatologist with a blue-violet, painless, 1.5-cm lump in the skin of her left shoulder. The lump is firm and cannot be moved, and has grown very rapidly over the past few weeks. The mass is removed surgically and the pathologist diagnoses it as a Merkel cell carcinoma. If the UV radiation to which her skin was exposed affected the Merkel cells, what other cell type sharing the same specific epidermal layer might also be affected?

a. Fibroblasts of the papillary layer

b. Keratinocytes of the stratum granulosum

c. Cells of tactile (Meissner) corpuscles

d. Keratinized epithelial cells

e. Basal stem cells for keratinocytes

23-A 37-year-old woman presents with a suspected Schwannoma. The radiology report indicates “a soft tissue mass to the right of L1 at the level of the L1 to L2 neural foramen.” The neurologist presses the base of a vibrating 128 cps tuning fork to the skin of the patient’s right and left thighs

and asks her to describe the sensation. She asks the patient to close her eyes and then to tell her whether the tuning fork is vibrating or not. With that instrument the doctor is primarily testing the function of which of the following sensory receptors?

a. Lamellated (Pacinian) corpuscles

b. Kraus end bulbs

c. Meissner corpuscles

d. Merkel cells

e. Free nerve endings

24-Which of the following is composed of loose connective tissue?
a. Epidermis
b. Reticular layer of dermis
c. Hypodermis
d. Both a and b
e. Both b and c

25-Where is thick skin found?
a. Over the knee
b. Sole of the feet
c. Breast
d. Lips
e. All of the above

26-Which layer of the epidermis has cells which have keratohyaline granules?
a. Stratum basale
b. Stratum spinosum
c. Stratum granulosum
d. Stratum lucidum
e. Stratum corneum

27-Which cell is a macrophage found in the skin?
a. Kupffer cells
b. Histiocyte
c. Dust cell

d. Langerhans cell
e. Microglia

28-What is the growing part of the nail?
a. Lunula
b. Eponychium
c. Matrix
d. Nail bed
e. Root

29-Which of the following is composed of connective tissue?
a. Epidermis
b. Dermis
c. Hypodermis
d. Both a and b
e. Both b and c

30-Which of the following is composed of dense irregular connective tissue?
a. Epidermis
b. Reticular layer of dermis
c. Hypodermis
d. Both a and b
e. Both b and c

31-What is underneath the nail plate?
a. Lunula
b. Eponychium
c. Matrix
d. Nail bed
e. Root

32-Which of the following responds to continuous pressure?
a. Free nerve endings
b. Ruffini's corpuscles
c. Pacinian corpuscles
d. Krause's end bulbs
e. Meissner's corpuscle

33-Which of the following is composed of stratified squamous epithelium?
a. Epidermis

b. Dermis
c. Hypodermis
d. Both a and b
e. Both b and c

34-Which layer of the epidermis contains star shaped cells?
a. Stratum basale
b. Stratum spinosum
c. Stratum granulosum
d. Stratum lucidum
e. Stratum corneum

35-Which sensory receptor in the skin is NOT encapsulated?
a. Ruffini endings
b. Free nerve endings
c. Pacinian corpuscles
d. Meissner's corpuscles
e. Merkel cells

36-Which of the following statements about hair follicles is true?

A) They are always associated with an eccrine sweat gland.

B) They are present in thin skin but not in thick skin.

C) Their associated arrector pill muscle is composed of striated fibers.

D) Their hair shaft inserts into the papillary layer of the epidermis.

E) They do not extend into the dermis

37-Which of the following statements about eccrine sweat glands is true?

A) They are absent in thick skin.

B) They are holocrine glands.

C) They have a narrow duct lined by a stratified cuboidal epithelium.

D) They secrete an oily material called sebum.

E) They empty into hair follicles

38-

A 32-year-old man with a history of tyrosinase deficiency presents to the clinic. He reports that he sunburns easily and his eyes are extremely sensitive to light. On exam, he appears pale with light blonde hair and blue eyes.

Which of the following germ cell layers gives rise to the cells affected in this patient?

- **A.** Endoderm
- **B.** Mesoderm
- **C.** Neuroectoderm, neural crest cells
- **D.** Neuroectoderm, non-neural crest cells
- **E.** Surface ectoderm

We Value Your Feedback!

You correctly chose C [69%]

The patient's tyrosinase deficiency, along with his appearance, extreme photosensitivity, and high risk for sunburn are clear indicators of **albinism.**

Generalized albinism is an autosomal recessive disorder due to tyrosinase deficiency or defective tyrosine transport in melanocytes. Tyrosinase catalyzes the production of the key intermediate in the melanin synthesis pathway using DOPA and/or tyrosine as a substrate. This results in decreased production of melanin, resulting in lack of pigmentation in hair, skin, and eyes. Affected individuals are at increased risk for basal and squamous cell carcinoma as well as malignant melanoma.

Melanocytes arise from **neural crest cells** of the ectodermal germ layer. In rare cases, failure of neural crest cells to migrate during development can result in localized albinism (eg, piebaldism), an autosomal dominant trait resulting in patches of hypopigmentation of skin and/or hair.

This table provides an overview of the embryologic layers from which each tissue or cell type is derived.

Embryologic Derivatives		
Ectoderm	**Surface ectoderm**	Epidermis, lens of eye, sensory organs of ear, olfactory epithelium, epidermis, cutaneous and mammary glands, anterior pituitary, tooth enamel, oral cavity, anal canal distal to the pectinate line
	Neural tube	Brain, spinal cord, retina, optic nerve, posterior pituitary, pineal gland
	Neural crest	PNS, melanocytes, chromaffin cells of adrenal medulla, odontoblasts, aorticopulmonary septum, cranial and sensory ganglia, pharyngeal arch cartilages, head mesenchyme, connective tissue
Mesoderm	Muscle, bone, blood, other connective tissue, spleen, cardiovascular structures, lymphatics, kidneys, adrenal cortex, dermis, gonads, notochord, pleura, pericardium, peritoneum	
Endoderm	Gut tube epithelium, liver, gallbladder, pancreas, most of urethra, lungs, thymus, parathyroid, thyroid follicular cells, thyroid gland, tonsils, urinary bladder, epithelial parts of pharynx, lungs, trachea, and bronchi	

39-

A 44-year-old woman comes to the clinic because she has noticed changes in a mole on her neck. Physical examination shows a pigmented lesion with uneven borders, measuring about 1.5 cm wide. The patient says that the mole has doubled in size over the past 3 months. She noticed that it began to bleed after she got out of the shower 2 weeks ago. An excisional biopsy is done, and the slide is shown here.

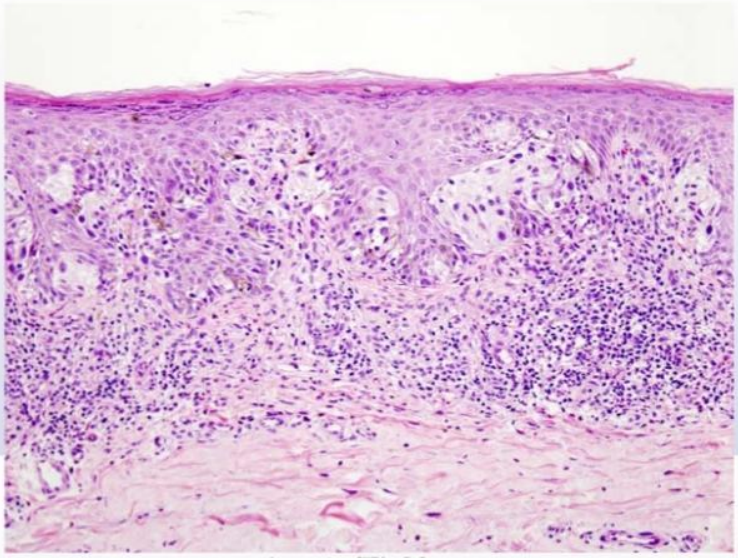


Image courtesy of Wikimedia Commons

Which of the following is the embryologic origin of the primary cancer cells in this mole?

- **A.** Endoderm
- **B.** Mesoderm
- **C.** Neural crest cells
- **D.** Notochord
- **E.** Surface ectoderm

We Value Your Feedback!

Answer: c

1-A	2-B	3-B	4-C	5-D	6-D	7-B	8-B	9-D	10-A
11-A	12-D	13-B	14-A	15-B	16-B	17-E	18-C	19-B	20-B
21-C	22-E	23-A	24-C	25-B	26-C	27-D	28-C	29-E	30-B
31-D	32-B	33-A	34-B	35-B					
36-B	37-C								

Past Papers

1-Mismatched pair:

a. Stratum spinosum / Langerhans cells are abundant

b. Stratum Lucidum / not found in all skin types

c. Stratum corneum / Dead cells

d. Stratum granulsoum / non-membranous bound lamellar granules

2-Apocrine sweat glands and sebaceous glands are similar to each other in which of the following features?

a. Location in the body

b. Association with hair follicles

c. Their mode of secretion

d. The produced material

3-Which of the following statements is wrong regarding thick skin?

a. It is found in palms and soles

b. Its epidermis consists of five layers

c. Its dermis is thicker than the dermis of thin skin

d. It has no hair or sebaceous glands

4-Which of the following is true about melanocytes?

a. They store the melanin pigment, so they appear brown in color

b. They are located in stratum spinosum

c. They transfer melanosomes to nearby keratinocytes

d. Their proliferation is stimulated by exposure to sun light

5-Merkel cells and melanocytes are located in:

a. Stratum corneum

b. Stratum granulosum

c. Stratum spinosum

d. Stratum basale

Answers:

1-D

2-B

3-C

4-C

5-D

Match:

A	B
1- Hairs	a- These glands produce a viscous secretion that is initially odorless but may acquire a distinctive odor as a result of bacterial decomposition.
2- The merocrine sweat glands	b- Plates of keratinized epithelial cells on the dorsal surface of each distal phalanx
3- The apocrine sweat glands	c- Its secreted fluid is not viscous and contains little protein. Its main components are water, sodium chloride, urea, ammonia, and uric acid.
4- The arrector pili muscles	d- Elongated keratinized structures derived from invaginations of epidermal epithelium.

5- Nails	e- Aggregate of undifferentiated epithelial cells in the follicular bulge at upper part of external root sheath
	f- They are disposed in an oblique direction, and their contraction results in the erection of hair shaft.
	g- They are acinar glands that usually have several acini opening into a short duct.

ANSWERS:

1-D

2-C

3-A

4-F

5-B

-THERE'S ALWAYS A LIGHT IN EVERY TIRED ROAD ★

Kahoot - skin histology

1-Which of the following is composed of loose connective tissue?

A) Hypodermis
B) Epidermis
C) Reticular layer of dermis
D) Reticular layer of dermis and hypodermis

2-A new miracle skin cream recently hit beauty counters that stimulates collagen production. Which cell is it stimulating?

A)Melanocytes
B)fibroblast
C)langerhans cell
D)Keratinocytes

3-In what type of skin are melanocytes larger and more active ?

A)Dark skin
B)light skin
C)fair skin
D)non of the above

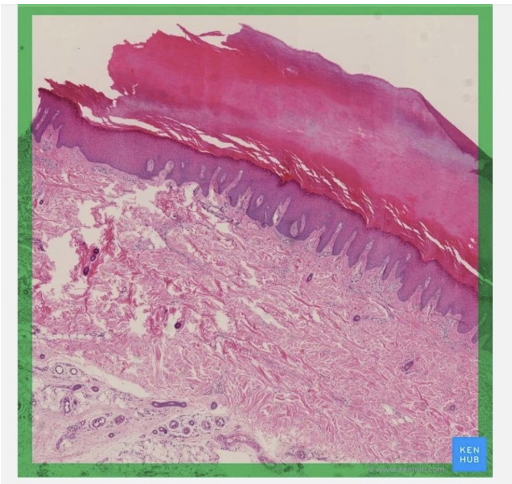
4-Choose the correct statement regarding hair follicles

A) Males have more follicles than females
B) Females have more follicles than males
C) Males and females have the same number of follicles
D) Children have more follicles than adults

5-Which of the following statement is not true ?

A) The substance most produced in the hair is melanin
B) The substance most produced in the epidermis is keratin
C) The substance most produced in the dermis is collagen
D) The substance most produced in the subcutis is fat

6-Which of the followings might be found in this section

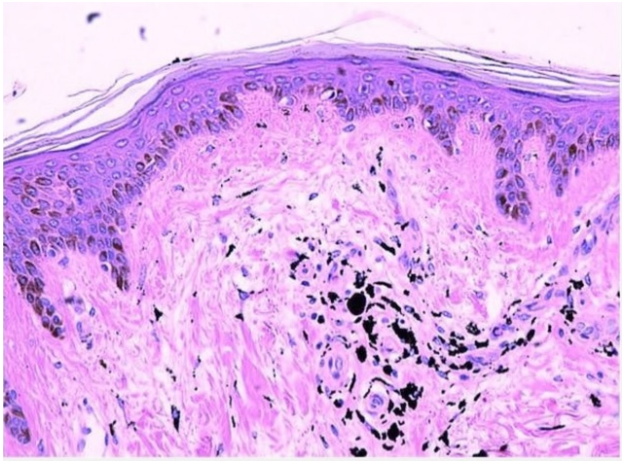


A) Apocrine sweat glands
B) Eccrine sweat gland
C)Hair bulb
D) Arrector pili muscle

7-The synthesis of melanin by basal keratinocytes is activated by sun exposure

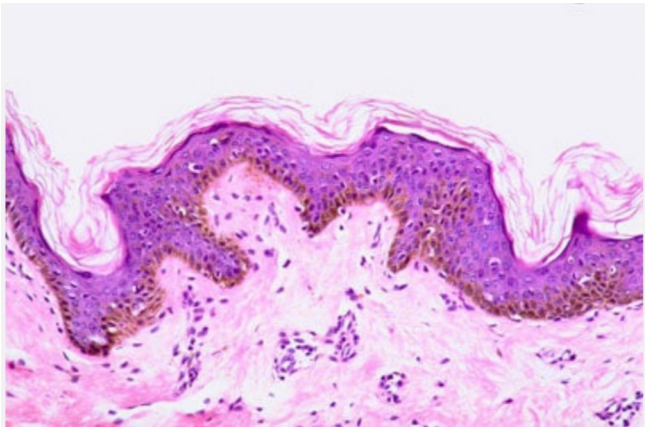
A)True
B)False

8-This image is of skin with a tattoo. This tattoo is permanent because



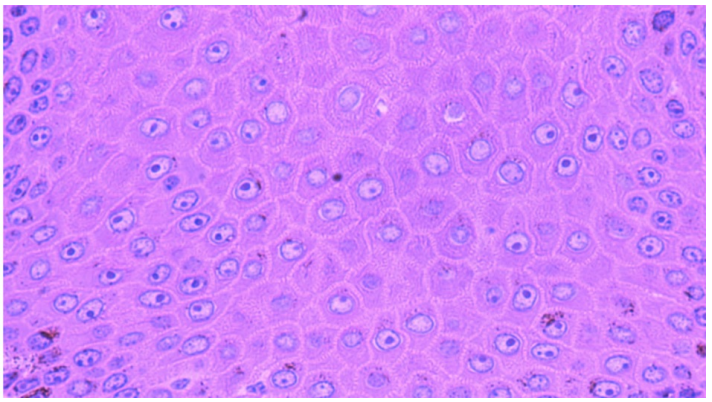
A) the ink lies in dermis, which does not turn over
B)the ink lies in epidermis, which continually turns over
C) the ink lies in hypodermis, which does not turn over
D) the ink lies in dermis, which continually turns over

9-What cell type synthesizes the brown material? In what cell type does most of the material reside?



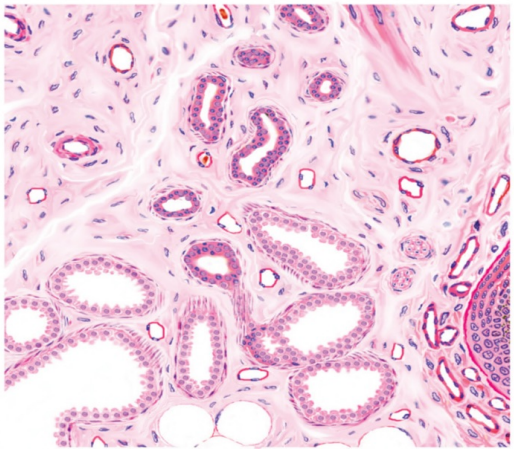
A) Keratinocytes, Melanocytes.
B) Keratinocytes
C) Melanocytes
D) Melanocytes. Keratinocytes.

10-Identify the epidermal layer



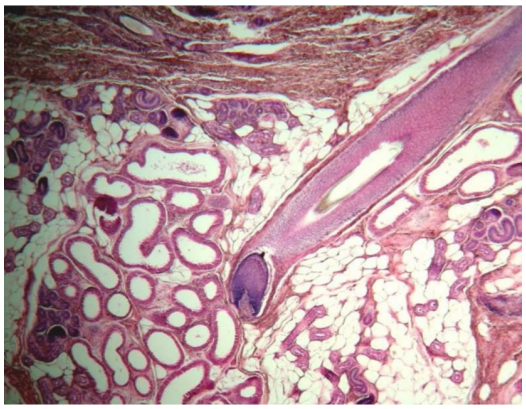
A) Stratum basale
B) Stratum granulosum
C) Stratum spinosum
D) Stratum corneum

11-This section is probably taken from:



A)Thick skin
B)Thin skin

12-This section is probably taken from:



A)The palm
B)The axilla
C)The scalp
D)Non of the above

Answers :

1-A
2-B
3-A
4-C
5-A
6-B
7-B
8-A
9-D
10-C
11-B
12-B

Histology - usmle rx

A 5-year-old boy is brought to the physician for a routine check-up. The patient's mother states that she has noticed a dark mole on his abdomen, which first appeared about 6 months ago. Other than the mole, she states that the patient has been in good health, aside from an episode of otitis media 1 year ago. On physical examination, a dark circular lesion on his abdominal region is observed. The lesion is symmetric and circular with well-defined borders and homogeneous color. The mother states that it has not seemed to change in shape or size since she first noticed it 6 months ago.

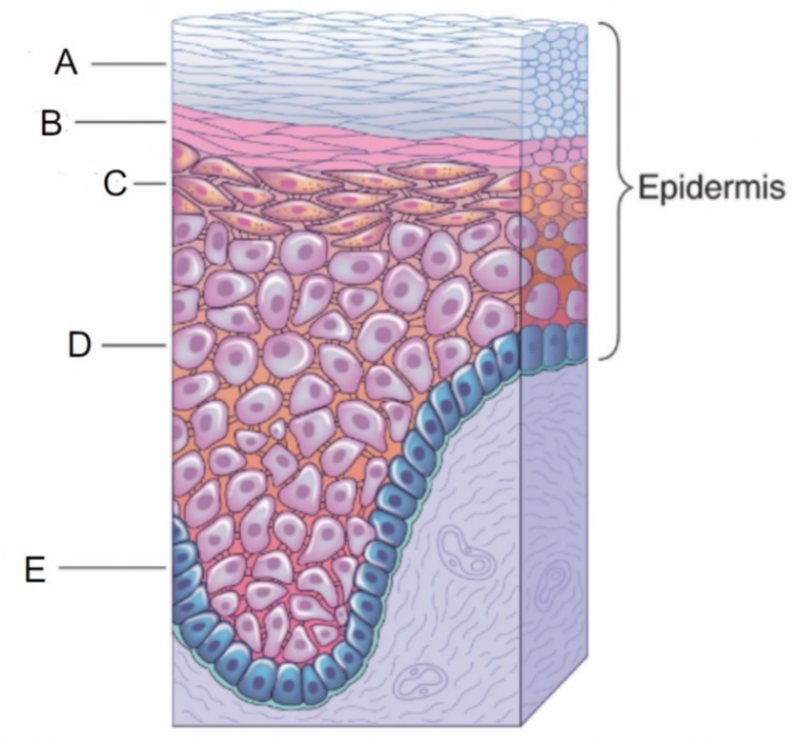
A. Label A

B. Label B

C. Label C

D. Label D

E. Label E



Answer :

E

This patient has a dark spot on his abdomen that is symmetric and homogenous in color with defined borders. This describes a benign nevus. Nevus cells are derived from melanocytes, which are melanin-producing cells located in the basal layer of the epidermis (stratum basalis) (see image below). Melanocytes have a variable distribution, depending on the skin color of the individual, and are interspersed between the columnar cells of the stratum basalis. Within the melanocytes are specialized melanin-containing granules called melanosomes, which are transferred from the cytoplasm of the melanocytes to nearby keratinocytes. The stratum basalis is also the most mitotically active of all the layers of the skin, providing a constant supply of new keratinocytes to all the other layers.

Melanoma is a malignant tumor of melanocytes that may manifest as moles with changing borders, growth in size, or change in color. Since this patient had a dark spot that was symmetric and homogenous with defined borders, melanoma can be ruled out.

A medical student is working in the emergency department when a patient presents with a superficial laceration to the palmar surface of the hand.

Which of the following epidermal layers distinguishes the palmar surface from dorsal surface of the hand?

A. Corneum

B. Granulosum

C. Lucidum

D. Spinosum

Answer:

C

What cell type do melanocytes differentiate from?

A-Dermal fibroblasts
B-Keratinocytes
C-Merkel cells
D-Neural crest cells
E-Stem cells in the stratum basale

Answer:

D

A 45-year-old man comes to the dermatologist because of dry, thick, and rough skin on his foot. He has a previous history of allergy to pollen grains but is otherwise healthy and takes no medications. His temperature is 98.5° F (36.9° C), blood pressure is 126/70 mm Hg, pulse is 66/min, and respirations are 16/min. Physical examination findings of the right foot are shown in the image.

A. Stratum basale

B. Stratum corneum

C. Stratum granulosum

D. Stratum lucidum

E. Stratum spinosum

Answer;

B

This 45-year-old man presents with thick rough skin on his right foot as seen in the image . These findings are consistent with callus, which is an example of hyperkeratosis, or an increased thickness of the stratum corneum.

The stratum corneum is the outermost layer of the epidermis. It is made up of anucleated dead cells and is responsible for providing a mechanical barrier against microbes and mechanical injuries. Mechanical injury in the stratum corneum caused by chronic skin inflammation and irritation leads to the release of local cytokines, which results in proliferation of stratum corneum. Chronic atopic dermatitis or ill-fitting shoes can lead to calluses, which mostly develop on the flexural surfaces.

What structure is responsible for causing goosebumps?

A-Apocrine sweat gland

B-Arrector pili muscle

C-Eccrine sweat gland

D-Meissner corpuscle

E-Sebaceous gland

Answer;

B