

BIO141-Human Anatomy and Physiology I | 2023

Integument Notes

Integument

The focus of this lab is for students to learn the structures of the skin. This includes structures viewed on the histology slides. You may want to discuss the following with them:

- Layers of the skin and tissue types (epidermis, dermis and hypodermis)
- Cells of the epidermis (and some fun tricks for remembering them in order. (Here is my favorite: you start in the basement and walk up the stairs to the ground floor, as you go up you hit the light and finally the ceiling) basale, spinosum, granulosum, lucidum, corneum)
- Review thick and thin skin and be sure they can explain the differences in structure between these two.

Case Study: "Cancer is Only Skin Deep" (in pairs)

In this case study they are going to view a biopsied growth on the patient's leg. They are given several risk factors that the patient has for cancer. At the very end, they will view the histology of the biopsied growth. They should see thickening of the keratinocytes. It will be hard for them to tell which layer but this is squamous cell carcinoma. There appears to be some migration of keratinocytes below the stratum basale but not significant metastasis.

Materials: none

Activity 1- Layers and Cells of the Epidermis

Students will learn about the basic features of the three layers of the skin. They will focus on the epidermis and learn the strata. They will identify the cells from the microscope image and the image of the model. They will also learn 3 specific cell types of the epidermis. They do not need to identify these under the microscope but they will make a drawing of both thick and thin skin at high power under the microscope and compare the two. Tell them NOT to take the microscope slide off the microscope as they are viewing it again for activity 2.

Material for class: Microscopes

Materials Needed per tray: dropper bottle isopropyl alcohol, lens paper, box of slides with 4 thin skin (scalp) and 4 thick skin (sole of foot).

Activity 2- Layers and Structure of the Dermis and Hypodermis (in pairs)

Students will label the model using the sticky-tack and laminated terms and they will view the microscope slide again.

Material for class: Microscopes

Materials Needed per Group: dropper bottle of isopropyl alcohol, lens paper, box of slides (same as for activity 1), binder with laminated terms

Lab Clean-up - As normal students should put all their material away, check the inventory list for supplies in each tray and put their material away neatly. All microscope should be stored properly (cord wrapped and in the storage spot on the microscope, stage down, scanning in place and arm facing out).