Cornell Guided Notes

Genetics of Disease (Medical Interventions) | 2027-04-15

Name	Period	Date	Lesson
		2027-04-15	

Lesson focus

Microscopy image baseline

Key words and questions	Prepared details and student notes

Essential question
What is today's target?

Use cell and tissue images to establish a baseline for normal versus abnormal morphology and a diagnostic workflow. Big idea: How does the shape and arrangement of cells under a microscope reveal whether cancer has begun to invade?

My notes, examples, and questions

Key words
What vocabulary unlocks the lesson?

- cancer
- tumor
- benign
- malignant
- metastasis
- oncogene
- tumor suppressor

My notes, examples, and questions

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Cornell Notes - Continued

Key words and questions	Prepared details and student notes
Must-know ideas **What should I understand by the end?**	- Normal cells are uniform in size and shape and maintain orderly tissue architecture; cancer cells are pleomorphic with disorganized arrangement. - Benign tumors grow locally without invading surrounding tissue; malignant tumors invade and can shed cells into the bloodstream or lymph. - Metastasis is the spread of cancer cells from the primary site to a distant organ via blood or lymph; it is the leading cause of cancer mortality. **My notes, examples, and questions**
Process notes **What happens during class?**	- 0-8: Hook micrographs; establish normal tissue as the baseline; review lab safety for image analysis - 8-25: Open labeled images; identify normal tissue features; record cell size, shape, arrangement - 25-45: Compare benign vs. malignant samples; record differences in two-column table - 45-58: Mark metastasis image; write one-line explanation of how it differs from local tumor - 58-72: Sketch three-step diagnostic workflow: image acquisition, classification, clinical report - 72-80: Submit morphology comparison and workflow sketch; confirm break submissions complete **My notes, examples, and questions**

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Steps and evidence **What do I do and turn in?**	- Open the labeled microscopy images in the shell and identify normal tissue first. - Compare a benign and a malignant sample, noting differences in cell size, shape, and arrangement. - Mark one image showing metastasis and explain in one line how it differs from a local tumor. - Sketch the diagnostic workflow from image to tumor classification in three steps. - Submit your morphology comparison and workflow sketch as your daily evidence. Evidence: Lab report - Two-column morphology comparison (benign vs. malignant), one-line metastasis explanation, and a three-step diagnostic workflow sketch. **My notes, examples, and questions**
Checks for understanding **How do I know I got it?**	- You'll be able to tell normal from abnormal tissue morphology. - You'll be able to outline a basic cancer diagnostic workflow. **My notes, examples, and questions**

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Lab or safety notes
What must I handle carefully?

Safety:
- All materials are image-based; no wet lab hazards today.
- Microscopy images are de-identified patient tissue samples; treat them as clinical data and do not photograph or share beyond the class.
- If using a light microscope to view prepared slides, follow school lab safety protocol: carry microscope with two hands, report broken slides to the teacher immediately.

Supplies:
- Printed or projected labeled microscopy images (normal, benign, malignant, metastasis examples)
- Two-column comparison worksheet or blank paper for morphology table
- Colored pencils or highlighters (optional, for annotating image printouts)
- Ruler or scale bar reference if measuring cell size from prints

My notes, examples, and questions

Summary

Today's lesson focused on Microscopy image baseline. The main target was: Use cell and tissue images to establish a baseline for normal versus abnormal morphology and a diagnostic workflow. The evidence of learning is Lab report: Two-column morphology comparison (benign vs. malignant), one-line metastasis explanation, and a three-step diagnostic workflow sketch.. In my own words, the most important idea from today is:

My summary

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My final question or connection