

Lab 16 Objectives

Blood Pressure Concept Map

rev: 1/6/10

One of the themes that you'll discover this semester (if you haven't already) is that many of the body systems we're dealing with are interconnected. We'll explore this today by building a concept map.

A concept map is a useful tool in describing and understanding relationships between seemingly unrelated ideas. The map allows us to grasp how the action of different cells and organs can bring about common effects in the body.

- See the attached concept map of the eukaryotic cell cycle to see how it works.

When constructing a concept map, the terms in the map are connected by lines that describe the relationship between them.

For example, if you were asked to map out the concept of baking bread, you may draw an arrow from the term "oven" to the term "bread", and over the arrow you'd write "used to bake" – this explains the relationship between "oven" and "bake."

Today in lab, you and your lab group will construct a concept map that will illustrate how the body responds to low blood pressure.

Before coming to lab:

1. Look over the list of terms below and use your textbook if any sound unfamiliar or if you need to refresh your memory.

During the lab period (can be completed in any order):

1. Assemble your supplies. You'll need:
 - large sheet of white paper (more are available in case you screw up)
 - Post-It Notes
 - pencils (or pens, if you're daring!)
 - lab marker
 - textbook (one per group is probably fine)

2. Write each of the following terms on its own Post-It Note, preferably using the marker.

- adrenal cortex
- adrenal medulla
- aldosterone
- antidiuretic hormone (ADH)
- ↑ blood volume
- ↓ blood pressure
- ↑ blood pressure
- ↑ cardiac output
- epinephrine/norepinephrine
- ↑ fluid retention
- erythropoietin
- ↑ hematocrit
- kidney
- ↑ plasma volume
- posterior pituitary
- ↑ RBC formation
- renin →→→ angiotensin II
- thirst
- vasoconstriction

3. Begin by grouping your Post-Its into categories based on relationships that you know exist. For example, if you know that an organ secretes a certain molecule, group those together.

4. Arrange your Post-Its on the large sheet of paper and draw lines between them.

- As you draw your lines, write next to each line what the relationship is between the two Post-Its.
- Some common relationships (based on the terms you've been given) are:
 - ...is released by... OR ...is secreted by...
 - ...causes...
 - ...results in...
- I recommend drawing the lines/writing the relationships in **pencil**, as you'll undoubtedly change your mind several times!

5. The goal is to arrange all of the Post-Its so that someone looking at your map will understand how the body corrects a low blood pressure situation.

6. Rules:

- You must use all of your Post-Its and they must all be connected to other Post-Its via appropriate relationships.
- You can make additional Post-Its if you think it's necessary, but you should only have one Post-It for each of the "required" terms.

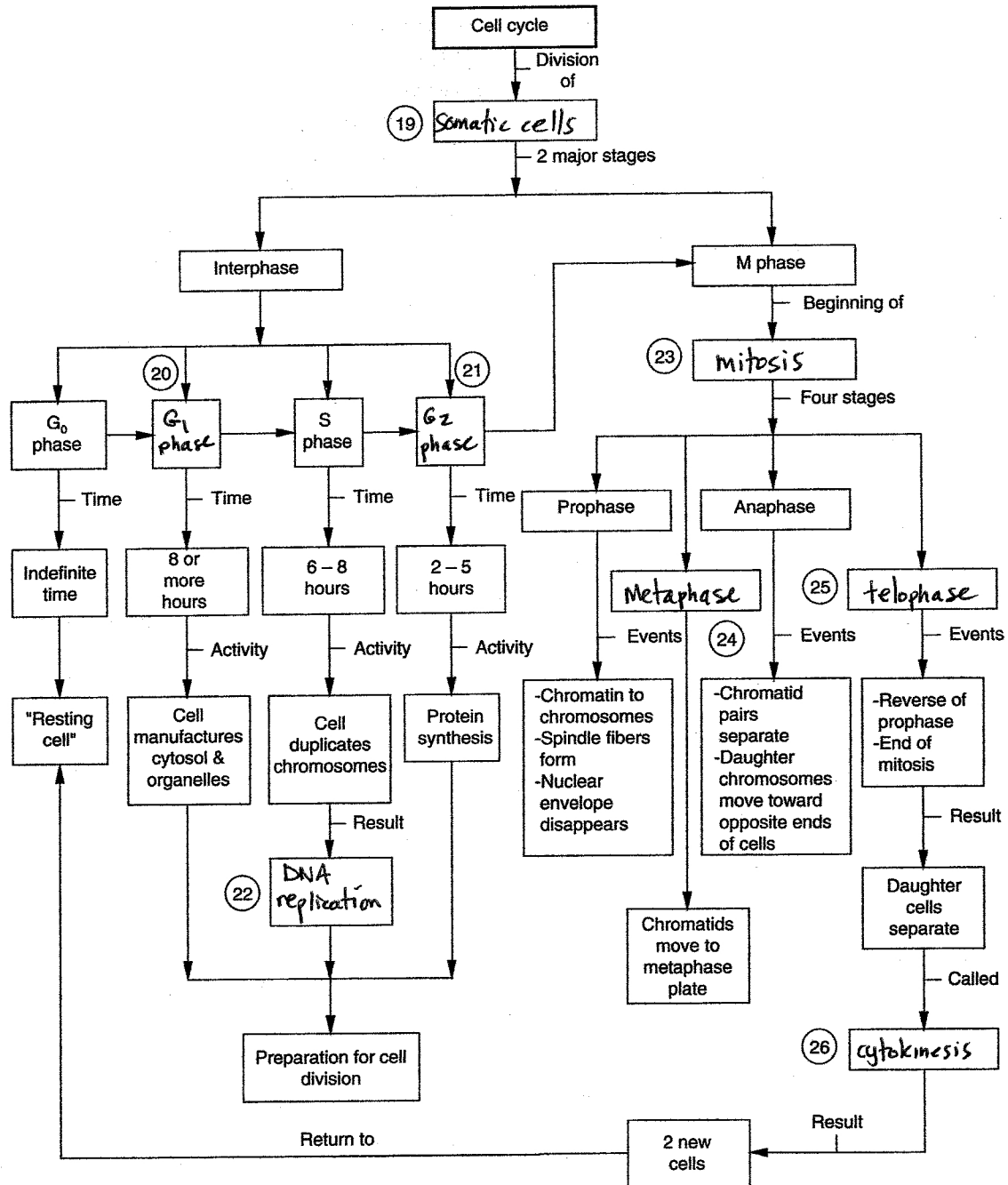
7. Hints:

- I'll give you two BIG hints on one of the following pages. One should help you begin, while the other should clue you in on how to end your map.

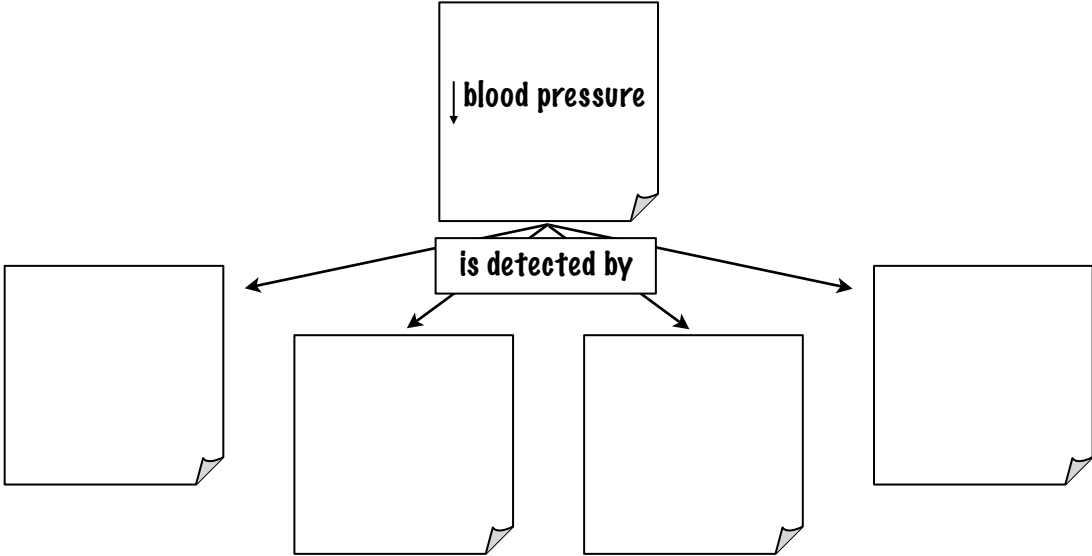
8. When you're ready to pass in your concept map, use tape to secure your Post-Its to the sheet of paper.

By the next lab:

1. Complete your concept map and turn it in at next week's lab.
2. You only need to turn in one copy per group (unless you prefer to turn in your own). Just make sure everyone's name is on it!



Hint #1: I recommend that you begin your concept map like this...



Hint #2: I recommend that you finish your concept map (*i.e.*, tie up all of your loose ends) like this...

