

Chapter 14

HOMEOSTASIS: Selected Examples

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**OVERVIEW:** Together the nervous and hormonal systems exert homeostatic control over numerous bodily functions, including body temperature, blood glucose level, and sexual reproduction, including the female reproductive cycle.

**BLUEPRINT:** As in Chapter 13, we will be emphasizing only selected parts of Chapter 14. Skim pages 293-305, and read/study carefully pages 305-307.

**VOCABULARY:**

parameter	pancreatic islets	corpus luteum
set point	insulin	leutenizing hormone (LH)
sensory receptors	glucagon	ovulation
negative feedback	follicle stimulating hormone (FSH)	progesterone
thermoregulation	estrogen	chorionic gonadotropin
		conception control

**LEARNING GOALS:**

1. What is homeostasis? Use the VOCABULARY in the first column above to explain how homeostatic control functions in thermoregulation, and in regulation of blood glucose.
2. Why is it impossible for a homeostatic control system to hold the parameter exactly at the set point?
3. Distinguish *voluntary* from *involuntary* control. How does one complement the other with respect to *stewardship* of your health as it relates to thermoregulation and blood sugar levels?
4. Beginning with the pituitary secretion of FSH, explain the function of the human female reproductive cycle.

**NETWORKING:** Visit the “BIO 100 Web Links” Page for Assignment # 25 for web links on the “Human Female Reproductive Cycle.”

**LECTURE EMPHASIS** will be upon the following topics:

1. Basic components of a homeostatic control system
2. Homeostatic control of body temperature, blood glucose levels, and female reproductive cycle.

TAKE-AT-HOME QUIZ #7

Lab Section (Day of Week and Hour – e.g. W-3) = \_\_\_\_\_

**INSTRUCTIONS:** Select the correct choice in response to each question and, in the correspondingly numbered box near the bottom of the quiz, write the UPPER CASE letter of the correct choice. Do NOT score your answers by circling or otherwise making marks on the letters of the individual choices. Otherwise, you may write on the quiz if it helps your thinking process. **You should have this quiz completed and ready to hand in when requested during lecture either on or after the date of the assignment to which this quiz is attached. You may complete the quiz alone or work with others, but be sure you are mentally involved in answering the questions. You must be present on the day the quiz is requested to receive credit.**

1. In a cross between red- and white-flowered plants (red is dominant), 88 seeds are produced. When these are planted and grown to the flowering stage, 64 produce red and 24 produce white flowers. The genotype(s) of the parents is (are) most likely
  - a. Red
  - b. Rr
  - c. Ww
  - d. Rr and RR
  - e. Ww and WW
  
2. The sympathetic division of the autonomic nervous system causes all of the following **except**
  - a. dilates pupils
  - b. slows heart rate
  - c. inhibits saliva flow
  - d. preparation for emergencies
  - e. inhibits digestive juice secretion

Match the gland or tissue with its secretion or function:

3. Secretes insulin
  - a. follicle
  - b. human embryo
4. Secretion from this source will gradually decrease if conception has not occurred
  - c. adrenal gland
  - d. corpus luteum
  - e. pancreatic islets
5. Progesterone is secreted from tissues of the \_\_\_\_\_.
6. Hormones from this source serve as a “signal” that the uterine lining should be maintained; and, assures that the tissue supplying progesterone will not degenerate.

Score Answers Here -->	1.	2.	3.	4.	5.	6.
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7. Is it important to you that a distinction be made between birth control and conception control methods of family planning? Why or why not? See Internet Site “Contraception Methods” noted in this assignment (Answer in one or two sentences.)