

# Hormone college essay



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BUSTER**

= Hormone Levels During the Menstrual Cycle How do hormone levels regulate the female menstrual cycle? Use the following experimental data to analyze hormone levels during the menstrual cycle. Analysis 1. Gonadotropic hormones regulate ovarian hormones. Study the feedback loop shown in Figure 4.

Figure 4 Feedback loop showing the regulation of ovarian hormones by gonadotropic hormones. (a) Identify as W, X, Y, or Z the two gonadotropic hormones represented in the diagram. (b) Identify the ovarian hormones shown in the diagram. (c) Which two hormones exert negative feedback effects? 2. Body temperatures of two women were monitored during their menstrual cycles. One woman ovulated; the other did not.

The results are shown in Table 4 on the following page. (d) Graph the data provided on a separate piece of paper. Plot changes in temperature along the y-axis (vertical axis) and the days of the menstrual cycle along the x-axis (horizontal axis). Table 4 Temperature (°C) Days 5 10 12 14 16 18 20 22 24 28 Ovulation occurs 36. 4 36.

2 36. 0 38. 4 37. 1 36. 6 36.

8 37. 0 37. 1 36. 6 No ovulation 36.

3 35. 7 35. 8 36. 2 36. 1 36. 36.

3 36. 3 36. 4 36. 5 (e) Assuming this menstrual cycle represents the average 28-day cycle, label the ovulation day on the graph. (f) Describe changes in temperature before and during ovulation.

(g) Compare body temperatures with and without a functioning corpus luteum. 3. Figure 5 shows changes in the thickness of the endometrium throughout the female menstrual cycle. Figure 5 (h) Identify the events that occur at times X and Z.

(i) Identify by letter the time when follicle cells produce estrogen. (j) Identify by letter the time when the corpus luteum produces estrogen and progesterone. 4. Levels of gonadotropic hormones monitored throughout the female reproductive cycle are shown in Figure 6. Levels are recorded in relative units. Figure 6 (k) How does LH affect estrogen and progesterone? Synthesis (l) Figure 7, on the following page, shows estrogen and progesterone levels during three menstrual cycles.

(i) On which day (X, Y, or Z) would ovulation occur? Explain your answer. (ii) On which day (X, Y, or Z) would you expect to find a functioning corpus luteum? Explain your answer. Figure 7 (m) Explain why only one corpus luteum may be found in the ovaries of a woman who has given birth to triplets. n) Estrogen plays a crucial role in maintaining bone strength and density. This is why women over 50 and women who experience premature menopause are at risk for developing osteoporosis. What can be done to minimize this risk? Investigate both hormone therapies and lifestyle factors.

(o) Cattle are given various steroid hormones to increase meat production. Recently, some scientists have expressed concern that animal growth stimulators might have an effect on humans. Comment on the practice of using hormones in cattle. What potential problems in humans might be associated with such procedures?