# Summary of Hormones for Biology 12

Biology 12 KEY Name:_____

M.Johnston Date:_____

Use both your text and your notes to answer the following questions.

1. Define **hormone**: **A CHEMICAL (PRODUCED IN ONE BODY ORGAN/PART) THAT GETS SECRETED INTO THE BLOODSTREAM AND CAUSES A DIFFERENT BODY PART TO DO SOMETHING. [IT'S A CHEMICAL MESSENGER]**

2. What are the general functions of hormones? **SEND MESSAGES FROM ONE BODY PART TO ANOTHER**

3. Basically, how do hormones work? (As in, where are they secreted and how do they travel?) **SECRETED BY VARIOUS ORGANS, TRAVEL IN THE BLOOD TO ALL BODY PARTS, BUT ONLY THE TARGET BODY PART HAS THE RIGHT RECEPTORS TO REACT TO THE MESSAGE.**

4. a) What type of biological molecule are hormones? (circle)

   protein nucleic acid (lipid) carbohydrate

   b) As a reminder to yourself, draw the basic structure or shape of each of the biological molecules.

5. What is the difference between an endocrine gland and an exocrine gland? **Endocrine: ductless glands that release hormone(s) directly into the bloodstream. Exocrine: (an old and out of date term sometimes used which refers to hormone secreting glands which DO have ducts.)**

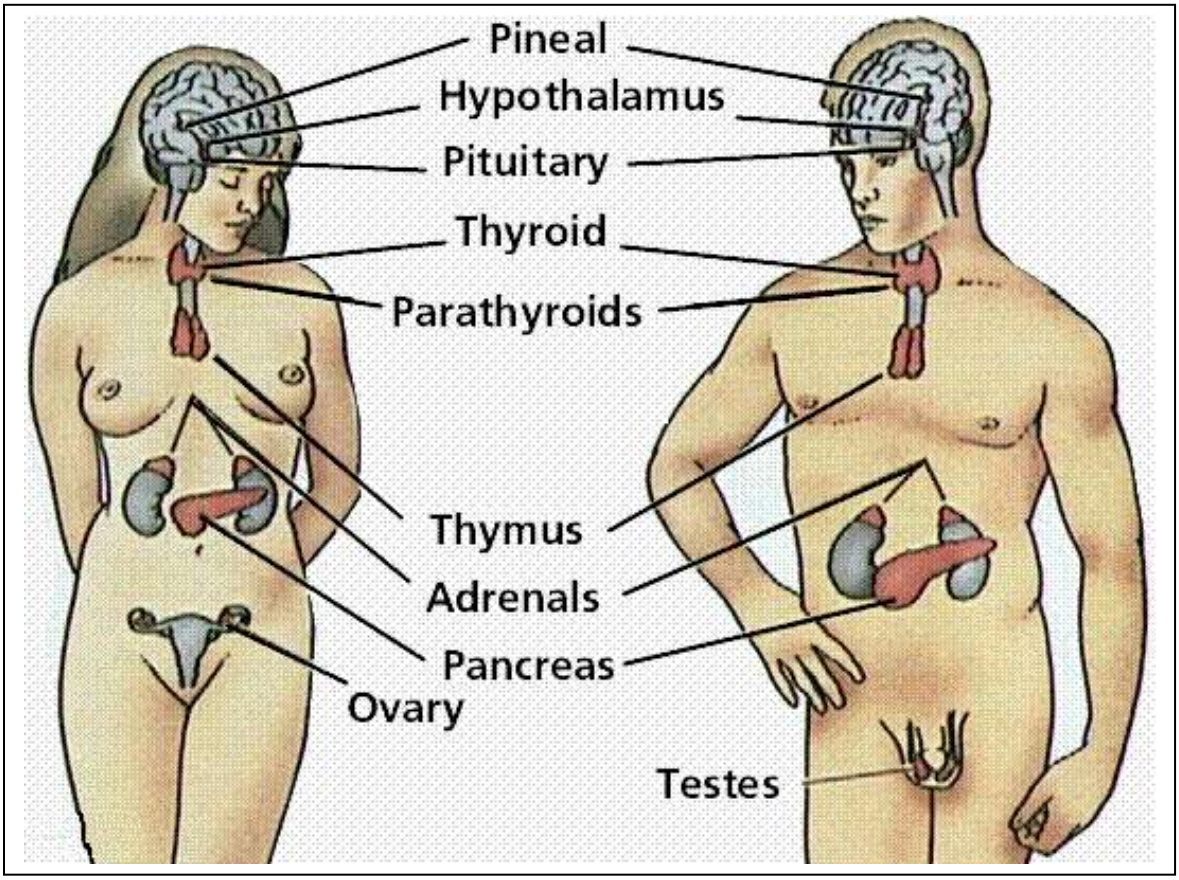
6. On the figure on back of this worksheet,
   a) label each hormone producing organ with its name
   b) Below the name, and using a different colour, list the hormones produced at each organ.
   c) Using a separate colour for each hormone, draw a neat arrow from the organ to the site of each hormone's action. Make a legend so it is known which colour is which hormone.

7. Fill in the following table using EVERY hormone we've discussed in this course. (*YOU ARE EXPECTED TO SEARCH ALL OF YOUR NOTES*). THEN, add info from text chapter on hormones.

| Hormone name | Where made (source) | Where acts (site) | What does / How acts |
|---|---|---|---|
| **Secretin** | **Duodenum (small intestine)** | **Pancreas and liver** | **Secretion of pancreatic juice (contains trypsinogen and sodium bicarbonate) and bile** |
| **CCK** | **Duodenum (small intestine)** | **Pancreas and liver** | **Secretion of pancreatic juice (contains trypsinogen and sodium bicarbonate) and bile** |
| **Gastrin** | **Bottom of stomach** | **Top of stomach** | **Secrete acid and pepsinogen** |
| **Thyroxine** | **Thyroid gland** | **All body cells** | **Increases metabolic rate.** |
| **Epinephrine** | **Adrenal medulla** | **Muscles of body** | **Released in emergency situations, raises blood glucose level** |

| | | | |
|---|---|---|---|
| **Norepinephrine** | **Adrenal medulla** | **Muscles of body** | **Released in emergency situations, raises blood glucose level** |
| **Insulin** | **Pancreas** | **Liver, muscles, fat tissue.** | **Causes intake of glucose. (Liver cells will convert it to glycogen for storage)** |
| **ADH** | **Posterior lobe of pituitary** | | **Reabsorption of water into blood at nephron. (increase blood volume).** |
| **aldosterone** | **Adrenal cortex** | **Distal conv. tubule** | **Excretion of K+ & reabsorption of Na+ (causing more water to be reabsorbed into blood) (increase blood volume and regulate salt balance)** |
| **Gonadotropic releasing hormone (GnRH)** | **Hypothalamus** | **Anterior pituitary** | **Secretion of LH & FSH by anterior pituitary** |
| **Inhibin** | **Seminiferous tubules of testes** | **Hypothalamus** | **Inhibits its release of GnRH and thus LH & FSH and thus testosterone … when there's <u>enough</u> testosterone.** |
| **Testosterone** | **Interstitial cells of testes (males)** | **Testes, epididymis, vas deferens, seminal vesicles, prostate, bulbourethral glands, AND hypothalamus.** | **Makes the organs listed function normally, and also inhibits hypothalamus's release of GnRH and thus LH & FSH and thus testosterone … when there's <u>enough</u> testosterone.** |
| **Progesterone** | **Corpus luteum in ovary** | **Hypothalamus (and female reproductive body parts)** | **Feedback control over hypothalamus and anterior pituitary (causes them to stop producing GnRH, FSH, & LH when there is enough FSH & LH. (Causes development and maintenance of female reproductive parts)** |
| **Estrogen** | **Follicle in ovary** | **Hypothalamus (and female reproductive body parts)** | **Feedback control over hypothalamus and anterior pituitary (causes them to stop producing GnRH, FSH, & LH when there is enough FSH & LH. (Causes development and maintenance of female reproductive parts)** |
| **FSH** | **Anterior pituitary** | **Testes - in males Ovaries - females** | **Males: sperm and inhibin production Females: causes follicle to produce estrogen** |
| **LH** | **Anterior pituitary** | **Testes - in males Ovaries - females** | **Males: testosterone production Females: stimulates corpus luteum to produce progesterone** |
| **Oxytocin** | **Posterior pituitary** | **Smooth muscle in uterus** | **Stimulates uterus to contract and release of milk by mammary glands (breasts)** |

Human endocrine system sheet




Order of answers for diagram on your sheet:

| | |
|---|---|
| | A |
| | B |
| | C |
| E | |
| D | |
| F | |
| G | |
| H | |
| | I |
| | j |

1. Pineal gland
2. Thyroid gland
3. Pituitary
4. Ovaries
5. Hypothalamus
6. Pancreas
7. Adrenal
8. Thymus
9. Testis
10. Parathyroid

Sheet: Human Hormones

| | |
|---|---|
| 1 | ACTH, TSH, growh hormone, FSH, prolactin, LH |
| 2. | Thyroxin, calcitonin |
| 3 | Parathormone |
| 4 | Cortison, aldosterone, adrenaline, noradrenaline |
| 5. | Insulin, glucagon |
| 6. | Testosterone |
| 7 | Estrogen, progesterone |
| 8 | Adrenaline |
| 9 | Insulin |
| 10 | Estrogen |
| 11 | Glucagons |
| 12 | Parathormone |
| 13 | Aldosterone |
| 14 | Testosterone |
| 15 | Growth hormone |
| 16 | ACTH |
| 17 | Thyroxine |
| 18 | FSH |
| 19 | Cortisol |
| 20 | TSH |

Crossword:

| Across | Down |
|---|---|
| 1. pituitary | 1. pancreas |
| 4. lutenizing | 2. thyroid |
| 6. hypothalmus | 3. ovaries |
| 7. thyroxin | 5. testes |
| 9. ACTH | 8. noradrenalin |
| 11. penis | 10. placenta |
| 13. vagina | 11. prostate |
| 14. scrotum | 12. thymus |
| 17. oviduct | 15. cervix |
| 18. uterus | 16. FSH |
| 19. amnion | |