

Sheet 1:

- 1- True about G proteins: alpha 2 receptors usually are inhibitory
- 2- Wrong about endocrine system: each hormone has one specific target cell type
- 3- Wrong about endocrine regulation: always involves exocytosis of a hormone (all hormones are secreted by Exocytosis)
- 4- Wrong about mechanism of action of hormones: all steroid hormones always bind receptors inside cells or nucleus
- 5- A neurohormone, hormone and neurotransmitter – somatostatin (most likely)
- 6- True about G protein: relays a signal from the first messenger/receptor complex to a membrane protein to activate processes
- 7- True about desensitization: none
- 8- Hormone that binds cytoplasmic receptor: progesterone
- 9- True about Hypothalamic hormones: all are peptide
- 10- Which of the following causes a decrease in sensitivity to the hormone?
 - a) Decrease in number of target cells.
 - b) Decrease adenylate cyclase.
 - c) Competitive antagonist.
 - d) Non-competitive antagonist.**
- 11- True about obesity? All of the above
- 12- Which is true about Oxytocin?
 - A) Lactogenic hormone.
 - B) Inhibited by Progesterone.
 - C) Increases when the size of the uterus increases.**
- 13- Hormone not released by stress: somatostatin
- 14- Definition of paracrine: A hormone that is synthesized in endocrine cells and released to the interstitial space, binds to a specific receptor of nearby cell)
- 15- Cortisol permissive effect on (GH- Thyroid hormones- PRL- Glucagon- Insulin): glucagon
- 16- Name the enzyme that is activated by diacylglycerol: phospholipase C
- 17- What is the second messenger of ____ ? IP3

18- The enzyme responsible for _____ down reflex: oxytocin

19- Question about the kinds of glands.

20- Activates ATPase: gly-sth

Sheet 2: (Pituitary Gland)

1- Doesn't increase GH: obesity

2- Inhibits GH: aging

3- Pituitary hormone associated with gigantism, acromegaly and dwarfism: Growth Hormone

4- Wrong about posterior pituitary: In diabetes insipidus Na is lost in urine

5- All of the following are true about GH except: Somatostatin increases GH.

6- Hypothalamus inhibits the release of: Prolactin

7- Not true about ADH: carried by capillaries to gland (One of the following is not true about vasopressin: it is transported to pituitary via capillaries)

8- Which of the following is a neurohormone: Vasopressin

9- Effect of alcohol on ADH? decreases its secretion

10- ADH is released from supraoptic, oxytocin released from paraventricular nucleus

11- Enhances GH secretion? fasting

12- Most important hormones for growth in-utero: GH and IGF-I

13- Choose the odd hormone: cortisol (only one not secreted from pituitary).

14- Question about K⁺ the answer was GH

15- GnRH from where it released?

16- All the following hormones excreted by pituitary gland except

17- the wrong statement: proximal tubules affected by antidiuretic hormone

18- Question about GH+I-GH

19- Not regulated by hypothalamic-pituitary portal system: ADH

20- Alcohol will lower the secretion of: ADH

Sheet 3: (Adrenal Gland)

- 1- Wrong about adrenaline: a peptide hormone
- 2- Inhibits ACTH release: cortisol
- 3- Adrenaline needs the previous action of another hormone for: lipolysis
- 4- Wrong about cortisol function: glycogenolysis
- 5- An increase in this will not increase aldosterone level: sodium
- 6- All of the following cause increase the secretion of Aldosterone except : high Na⁺ level
- 7- Although the adrenal cortex secretes ___different hormones, 95% of mineral corticoids are from: 3, aldosterone
- 8- Which of the following is most essential for life? (thyroid or epinephrine), some claim its aldosterone
- 9- Which of the following decrease ACTH secretion: Cortisol
- 10- Wrong about ACTH: A) Secreted when the median eminence is stimulated. **B) Its secretion is affected by Aldosterone.**
- 11- The most imp. hormone in keeping normal K⁺ conc. In the body : (Cacitriol - Vasopressin ADH – Aldosterone)? Aldosterone
- 12- Aldosteron stimulator: angiotensin II
- 13- Wrong about endocrine: adrenal medulla is modified parasympathetic ganglion
- 14- Main site of action for aldosterone? proximal tubule
- 15- Doesn't affect bone formation: aldoesterone
- 16- Choose the odd hormone (GH- PRL- Cortisol- Somatostatin- Calcitonin): Cortisol
- 17- In a comparison of cortisol and aldosterone, which of the following is not true? A) cortisol has minerolocorticoid activity.
B) Aldosterone some glucocorticoid activity.
- 18- Wrong about angiotensin: a maximal amount of aldosterone is needed for fluid balance (someone checked the slides and said it is minimal)
- 19- Hypotension = Angiotension

20- All of the following apply to glucocorticoid except: antidiuretic effect

21- Main action site for aldosterone: proximal tubules

22- Acne is a side effect of ACTH!

Sheet 4: (Thyroid Gland)

1- Has the least number of peptides: TRH

2- True about T3: promotes growth

3- Wrong about thyroid hormones: T3 produces rT3

4- Not made in the liver: calcitonin

5- Wrong about calcitonin: deficiency causes hypercalcemia but hypersecretion doesn't cause hypocalcaemia

6- True about thyroid hormone synthesis: thyroglobulin has DIT and MIT

7- Most abundant thyroid hormone produced is : T4 and most potent: T3

8- Which is false about the thyroid : Iodine deficiency doesn't cause goiter.

9- Which is false about T4 : It acts more rapidly than T3

10- True about Thyroxin synthesis: Iodide (I-) is oxidized to Iodine (I₂)

11- Calcitonin function: helps regulate homeostasis of Ca and P

12- Which does not take place during thyroid hormone synthesis?
One tyrosine combines with 4 iodine

13- False about t4? Binds directly to DNA in nucleus of target cells!

14- Which of the following when found in excess amounts causes protein catabolism : T3

15- What happens to most of T4 ? converted to T3

16- Most imp hormone for CNS growth: thyroid

17- Not correctly linked to its function: thyroid hormone

18-

one of the following hormones is not correctly linked to its actions
(x = effective - = not effective)

	Process → Hormone ↓	glycogenolysis	lipolysis	gluconeogenesis	Inhibition of Glu intake
a-	Glucagon	x	-	x	-
b-	GH	x	x	-	x
c-	Cortisol	x	x	-	x
d-	Thyroid H	x	-	-	x
e-	epinephrine	x	-	x	x

answer: (d)

19- One of these hormones when present in excessive amounts results in protein catabolism (PRL- Insulin- GH- T3- IGF-1): T3

20- Which one is not true about Goiter?

A) hypothyroidism Goiter, in some cases TSH could be increased

B) Lack of iodine may cause hypothyroidism

(The answer is not mentioned)

21- Which disease will not cause Goiter? the answer contains something like "secreting thyroid tumor"

Sheet 5&6: (Parathyroid Gland + Vitamin D)

1- True about PTH: vitamin D deficiency can cause hyperparathyroidism

2- Not a symptom of hyperparathyroidism: Tetany

3- Parathyroid: regulates blood calcium-

4- Wrong about Vitamin D: making ergocalciferol is sufficient for humans (most likely)

5- Wrong about osteoporosis: only occurs in women (occurs in females only)

6- Which is true: PTH coupled in cells or calcitonin is a physiologic regulator of calcium

7- Wrong about endocrine: anterior pituitary hormone directly inhibits parathyroid

- 8- Decrease PTH: high 1,25 (OH)₂ vit D
- 9- Doesn't increase 1,25(OH)₂ vit D: calcitonin-
- 10-1,25(OH)₂ vit D is synthesized in: Kidney
- 11-About PTH, incorrect: hypercalcemia stimulates it
- 12-Which of the following enhances formation of active Vitamin D: PTH
- 13- False about Ca metabolism: **A) PTH and VIT D have same effect.**
 B) PTH and vit D has a synergistic effect.
 C) Calcitonine reduces Ca level.
- 14- Most potent activator for synthesis of vit d3: PTH and low P
- 15- Which hormone of the following has effect on the bone and Ca⁺⁺ metabolism? (PTH- Calcitonin- Vitamin D3- Aldosterone- insulin)?
 Aldosterone

Sheet 7: (Pancreas)

- 1- Opposite hormone in metabolic function to all other's: insulin (most likely)
- 2- Regulates potassium within normal range: insulin (most likely)
- 3- True about insulin – requirement increases in obesity
- 4- Low insulin level is required for: inhibiting hepatic gluconeogenesis
- 5- Doesn't use cAMP as second messenger: insulin
- 6- If you eat 4 sugar-glazed donuts which hormone would you expect to rise? insulin
- 7- Which of the following doesn't stimulate cAMP? insulin
- 8- Insulin is stimulated by all of the following except : starving
- 9- Which of these Hormones has a function that antagonize the others: (Glucagon- GH- cortisol - Insulin - Epinephrine)? insulin
- 10- Hormone which doesn't play any role in growth: glucagon, it is also the major hyperglycemic hormone
- 11- Concentration of glucose in diabetic patients: 300, What is the threshold in the plasma? 225

- 12-** Increase both GH and insulin release? protein intake
- 13-** The following hormones act by activating tyrosine kinase: insulin + GH

Sheet 8: (Diabetes Mellitus)

- 1-** True about DM: Type 2 patients are usually obese and have a family history of the disease.
- 2-** Wrong about DM: type 2 has peripheral resistance which involves decreased glucose uptake by skeletal muscles and brain tissue
- 3-** The leading cause of death in DM is associated with what complication coronary artery atherosclerosis
- 4-** Is not raised in severely uncontrolled DM: blood volume
- 5-** Wrong about Comas: there are no types other than above
- 6-** The Tm of glucose for a diabetic patient is: increased
- 7-** Which of the following characterizes diabetes type 1 but not 2?
Lack of insulin
- 8-** Not true about the dehydration effects of insulin deficiency:
tubular reabsorption of fluid increases
- 9-** Renal threshold of glucose in plasma? 180mg/dl
- 10-** The similarities between type 1 and type 2 diabetes:
Concentration of Glu in the plasma
- 11-** difference between diabetes mellitus and insipidus
- 12-** Correct about NIDDM: insulin levels are normal or higher

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Questions from Costanzo :-

Each **numbered** question begins with an endocrine disorder or a disturbance to an endocrine system. The disorder or disturbance is followed by a list of parameters (e.g., blood level of various substances). For each parameter, predict whether it is **increased**, **decreased**, or **unchanged**.

1- Nephrogenic Diabetes Insipidus:

- A- ADH
- B- Urine osmolarity

Answers:

- A-ADH: Increased
- B-Urine osmolarity: Decreased, or dilute or hyposmotic.

2- Cushing Disease

- A-ACTH
- B- Cortisol
- C- Blood glucose

Answers:

- A- ACTH: Increased
- B- Cortisol: Increased
- C- Blood glucose: Increased

3- Surgical Hypoparathyroidism

- A- Serum Ca²⁺
- B- Serum phosphate
- C- Urinary cyclic AMP

Answers:

- A-Serum Ca²⁺: Decreased
- B- Serum phosphate: Increased
- C- Urinary cyclic AMP: Decreased

4- Car Accident That Severs the Hypothalamic-Pituitary Stalk:

- A-Prolactin
- B- ADH
- C- Serum osmolarity
- D- PTH

Answers:

- A- Prolactin: Increased
- B- ADH: Decreased
- C- Serum osmolarity: Increased (Hint: due to decreased ADH)
- D- PTH: No change.

5- Autoimmune Destruction of the Thyroid :

- A-T4
- B- TSH
- C- Basal metabolic rate
- D- T3 resin uptake

Answers:

- A- T4: Decreased
- B- TSH: Increased
- C- Basal metabolic rate: Decreased T3 resin uptake: Decreased (Hint: due to decreased T3 levels).

6- Administration of Synthetic Glucocorticoid (Dexamethasone) to a Normal Person:

- A- ACTH
- B- Cortisol

Answers:

- A- ACTH: Decreased.
- b- Cortisol: Decreased (Hint: decreased secretion of endogenous cortisol)

7- Lung Cancer Producing Parathyroid Hormone-Related Peptide (PTH-rp):

- A- Serum Ca²⁺
- B- PTH

Answers:

- A- Serum Ca²⁺: Increased
- B- PTH: Decreased (Hint: Increased serum Ca²⁺ inhibits endogenous PTH secretion.)

8-Addison Disease (Primary adrenal insufficiency):

- A-Cortisol
- B- ACTH
- C- Blood glucose

Answers

- A- Cortisol: Decreased
- B- ACTH: Increased
- C- Blood glucose: Decreased

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