



Physiology Revision

Chapter 3: The Nervous System

Chapter 4: Circulatory System

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Function of the spinal cord

- 1- Transmit signals and sensations from body parts
- 2- Transmits commands from brain to body organs
- 3- It is center for reflex actions
- 4- Nourishing muscles and tissues

Define are flex action  it is an involuntary response, necessary for life

Are flex action requires the presence of:

- a- A sensory receptor unit
- b- A sensory nerve ascending to the CNS (brain or spinal cord)
- c- A nerve center in the brain or spinal cord to interpret incoming sensory signals and issue
- d- A motor or secretory nerve descending from the CNS
- e- An effector unit, such as muscles or glands.

Location the (CSF): brain cavities and subarachnoid space (CSF) not coagulable

Function of cerebrospinal fluid

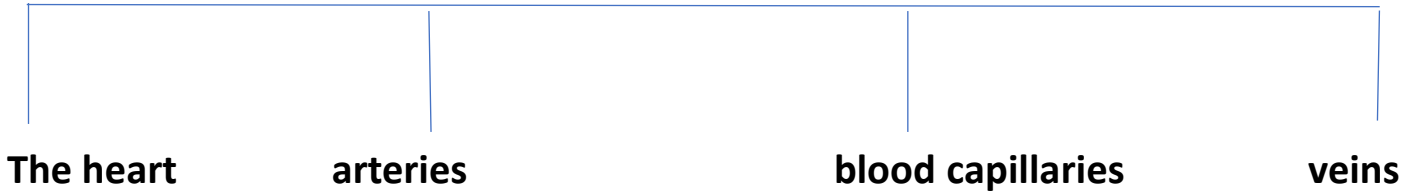
- 1- Protect the brain and spinal cord from impacts and violent movements
- 2- It has diagnostic value for some diseases.

sympathetic nervous system activity increases

During emotional excitement, physical exercise, hemorrhage exposure to extreme cold

The circulatory system it consists of

الجهاز الدوري يتكون من



Discuss nerves of the heart:

أعصاب القلب

- 1- Sympathetic nerves
- 2- Parasympathetic nerves

Function of the lymphatic circulation

- 1- Acts as a drain into which excess tissue fluid is poured
تعمل كمصرف تصب فيه سوائل الأنسجة الزائدة
- 2- Lymph nodes are collections of cells located along the course of lymphatic vessels
الغدد اللمفاوية عبارة عن تجمعات من خلايا لمفاوية توجد على مجرى الأوعية اللمفاوية

Function of the lymph nodes

- 1- These nodes filter microbes and harmful substances
تقوم هذه العقد بتصفية الميكروبات والمواد الضارة
Preventing their passage into the blood فتمنع مرورها
- 2- Produce white blood cells (lymphocytes) (الخلايا اللمفاوية) تنتج خلايا الدم البيضاء
- 3- Produce antibodies انتاج اجسام مضادة

Arterial blood pressure

ضغط الدم الشرياني

Definition it is lateral pressure exerted by blood on wall of the arteries

Systolic blood pressure 120mmhg and diastolic is 80mmhg

Subject: The Nervous System

Function of the Sympathetic Nervous System:

1. Dilates the pupil and raises the upper eyelid.
2. Increases heart rate and raises blood pressure.
3. Dilates the bronchi and reduces their secretions.
4. Relaxes the muscles of the stomach and intestine and contracts the sphincter muscles.
5. Decreases secretions of various digestive glands and breaks down liver glycogen.

Function of the Parasympathetic Nervous System:

1. Constricts the pupil and lowers the upper eyelid.
2. Decreases heart rate.
3. Constricts the bronchi and increases their secretions.
4. Contracts intestinal muscles and relaxes sphincter muscles.
5. Contracts bladder muscles and relaxes bladder sphincter muscles.

Parasympathetic nervous system activity increases during rest and sleep.

Complete the following:

1. Neuron is the functional unit of the nervous system characterized by having extensions called nerve fibers.
2. The nerve fibers that help with transmitting sensations and nerve commands to and from the central nervous system.
3. Cerebrospinal fluid is essential for the brain because it protects it from impacts.

#Definition of Edema:

Edema: is an abnormal increase in interstitial fluid.

(هي زيادة سوائل الأنسجة زيادة غير طبيعية)

Types of Edema:

1. Cardiac Edema: In heart failure.

(أو ديماء قلبية: تحدث في حالات هبوط القلب نتيجة تجمع الدم في الدورة الدموية)

2. Renal Edema: Loss of plasma proteins in the urine.

(أو ديماء كلوية: نتيجة فقد بروتينات البلازما في البول)

3. Nutritional Edema: Deficiency of protein in diet.

(أو ديماء غذائية: تنتج عن نقص المواد البروتينية في الغذاء)

4. Edema resulting from blockage of lymphatic vessels:

As in Elephantiasis, where worms enter and block the lymphatic vessels.

(أو ديماء ناتجة عن انسداد الأوعية الليمفاوية: كما في مرض الفيل، حيث تسد الديدان الأوعية الليمفاوية)

5. **Localized Edema:** Localized external pressure on veins in pregnancy, or vein blockage by a clot.

(أو ديماء موضعية: تنتج عن ضغط الأوردة من الخارج كما في الحمل، أو انسداد الوريد من الداخل بواسطة جلطة)

Choose the correct answer from the following:

1 -The Parasympathetic nerves that supply the heart:

a) Increase its rate

b) Decrease the heart's oxygen consumption

c) Dilate the coronary arteries

d) Increase the heart's contraction

2 -Arterial blood pressure decreases during:

- a) Physical exertion
- b) Emotional states
- c) After eating
- d) During sleep

3 -Edema that occurs in Elephantiasis results from:

- a) Malnutrition
- b) Loss of protein in urine
- c) Blockage of lymphatic vessels
- d) Heart failure

Complete:

1 -Arterial blood pressure is controlled by some factors like:

- 1. Cardiac output.
- 2. Peripheral resistance.
- 3. Elasticity of the arterial wall.
- 4. Blood volume relative to circulatory volume.

2 -Arterial blood pressure changes due to:

Age, sex, sleep, eating, body build, emotional states, and physical exertion.