Fisiologia Geral

1. Sistema nervoso

1.1. Estrutura do sistema nervoso
1.2. Neurónios e células de suporte
1.3. Atividade elétrica dos axónios
1.4. Sinapses elétricas e químicas
1.5. Neurotransmissores e transmissão sináptica
1.6. Integração sináptica

2. Sistema Cardiovascular

2.1. Funções e propriedades do sangue
2.2. Circulação sanguínea
2.3. Ciclo cardíaco
2.4. Regulação da função cardíaca.
2.5. Vasos sanguíneos
2.6. Pressão arterial, resistência e trocas capilares.
2.7. Retorno venoso

3. Sistema Respiratório

3.1. Funções do aparelho respiratório.
3.2. Mecanismos da ventilação
3.3. Propriedades físicas dos pulmões
3.4. Volumes e capacidades respiratórias
3.5. Trocas de gases nos pulmões
3.6. Controlo nervoso e químico da respiração.

4. Sistema Digestivo

4.1. Funções básicas do sistema digestivo.
4.2. Características da parede intestinal do tubo digestivo.
4.3. Stomatognathic system physiology. Mastication and deglutition
4.3. Fisiologia do aparelho estomatognático. Mastigação e deglutição.
4.4. Estômago.
4.5. Intestino delgado e Cólon.
4.6. Pâncreas.
4.7. Fígado e vesícula biliar.
4.8. Regulação neuroendócrina da motilidade e secreções gastrointestinais
4.9. Digestão, absorção intestinal.

5. Sistema Urinário

5.1 Estrutura e função dos rins.
5.2 Processo renal
5.3. Regulação da água e electrólitos. Equilíbrio acido-base.
5.4 Formação e eliminação da urina

6. Sistema Reprodutor

6.1 Anatomia e histologia do aparelho sexual masculino
    6.1.2. Espermatogénese e espermiogénese
    6.1.3. Maturação. Capacitação.
    6.1.4. Secreção, metabolismo e ação dos androgénios
6.2. Anatomia e histologia do aparelho sexual feminino.
    6.2.1. Ciclo ovárico. Oogénese e desenvolvimento folicular
    6.2.2. Ciclo uterino.
    6.2.3. Regulação hormonal

7. Sistema Endócrino

7.1 Glândulas endócrinas e hormonas.
7.2 Mecanismo de atuação hormonal.
7.3 Eixo hipotálamico-hipofisário.
7.4 Tiróide e paratiróides.
7.5 Glândulas supra-renais.
7.6 Pâncreas.

General Physiology

Program

1. **Nervous system**
   1.1. Struture of neuvous system
   1.2. Neurons and supportive cells
   1.3. Electrophysiology of neurons
   1.4. Chemical and electrical synapses
   1.5. Neurotransmitters and synaptic transmission
   1.6. Neural integration

2. Cardiovascular system

2.1. Functions and properties of blood
2.2. Blood circulation
2.3. Cardiac cycle
2.4. Regulation of cardiac function.
2.5. Blood vessels
2.6. Blood pressure, resistance and capillary exchange.
2.7. Venous return

3. Respiratory system

3.1. Functions of respiratory system
3.2. Mechanisms of ventilation
3.3. Physical properties of the lungs
3.4. Respiratory volumes and capacities
3.5. Gas exchange and transport
3.6. Nervous and chemical control of respiration

4. Digestive system

4.1. Basic functions of digestive system
4.2. Characteristics of the intestinal wall of the digestive tube
4.3. Stomatognathic system physiology. Mastication and deglutition
4.4. Stomach.
4.5. Small intestine and colon
4.6. The pancreas.
4.7. The liver and the gallbladder.
4.8. Neuroendocrine regulation of the motility and gastrointestinal secretions
4.9. Chemical digestion and absortion

5. Urinary system

5.1 Anatomy and function of the kidneys.
5.2 Renal process

5.3. Water, electrolyte, and acid-base balance.
5.4. Urine storage and elimination.

6. Reproductive system

6.1 The male reproductive system
6.1.1. Spermatgenesis.
6.1.2. Hormone regulation
6.2. The female reproductivesystem.
6.2.1. Oogenesis and the menstrual cycle

7. Endocrine system

7.1 Endocrine glands and hormones.
7.2 Hormonal acting mechanisms.
7.3 Hypothalam - pituitary axis
7.4 Thyroide and paratyroid glands.
7.5. Adrenal gland
7.6 Pancreas.

Bibliografia / Bibliography

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2. Boron WF, Boulpapep EL. (2003) Medical Physiology. 1st Edition. Saunders, 2003.
3. Fox SI (2006) Human Physiology. 9th Ed. New York: McGraw-Hill.
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