

Biology 2201
Unit Three Checklist
Maintaining Dynamic Equilibrium 1

Be able to....

- define homeostasis, and give examples of body characteristics that must be controlled to maintain homeostasis, ex. Control of body temperature
- define a “feedback mechanism”, and explain how they are involved in homeostasis

Circulation System :

- explain why we need a circulatory system, and how it helps maintain homeostasis
- describe the structure of arteries, veins, and capillaries
- identify parts of the human heart, and how blood flows through the heart. Include Vena cava, Right Atrium, Tricuspid valve, Right ventricle, Pulmonary artery, Pulmonary vein, Left Atrium, Bicuspid Valve, Left Ventricle, Aorta and septum
- define pulmonary, cardiac, systemic, gastrointestinal, hepatic, and renal, circulation
- identify the main cell types found in blood (WBC, RBC, P) their function, and identify plasma solutes
- describe blood pressure, its origin, the difference between systolic and diastolic pressure, and factors that can increase or decrease blood pressure
- describe hypertension, atherosclerosis, arteriosclerosis, coronary blockages, blood clots, aneurism, heart attacks, and strokes
- describe angioplasty, bypass surgery, and clot busting drugs
- explain why we need a respiratory system to maintain homeostasis, and explain the function of its parts (including sinuses, trachea, glottis, epiglottis, bronchi, bronchioles, alveoli, and diaphragm)
- explain the mechanics of breathing in and out, tidal volume, reserve volume, and vital capacity
- describe pneumonia, bronchitis, asthma, emphysema, lung cancer

Digestive System :

- explain why we need a digestive system, and how it helps maintain homeostasis
- distinguish between mechanical (physical) and chemical digestion
- Identify the digestive organs and explain what they do, including salivary glands, stomach, liver, pancreas, gall bladder, small intestine, and large intestine
- Explain how each of the following are adaptations that aid digestion : teeth types, taste buds, tongue, mucous membranes, villi, sphincters, and peristalsis
- Identify the 6 nutrients, their roles, and their sources: carbohydrates, proteins, fats (lipids), vitamins, minerals, and water
- Identify the secretions (enzymes / juices) we make that aid in the digestion of nutrients
- Explain how hydrolysis and dehydration reactions help us digest nutrients
- Explain what the sub-units of carbs, proteins, and fats are - and what the body does with them
- Explain what a balanced diet is and how it helps maintain homeostasis

- Describe digestive disorders....ulcers, gall stones, and Ileitis/colitis, anorexia and bulimia

Excretory System :

- explain why we need an excretory system, and how it helps maintain homeostasis
- explain how lungs, skin, liver, and kidneys help in excretion of body wastes
- Identify the parts of the excretory system, including : kidneys, ureters, bladder, and urethra
- Describe the 3 layers of a kidney : cortex, medulla, pelvis
- Describe the role played by the parts of a kidney nephron : glomerulus, Bowmans capsule, proximal convoluted tubule, loop of Henle, and distal convoluted tubule
- Describe excretory disorders : kidney stones, kidney / bladder infections
- Explain what kidney dialysis is, how it works, and what kidney transplants are for

Immune System :

- Define allergy, allergen, antibody and explain how each fits into an allergic reaction story
- Identify the body's first, second, and third lines of defense against foreign invasions
- Identify the various types of white blood cells, and their roles in fighting disease (macrophages, lymphocytes, phagocytes)
- Distinguish between "active" and "passive" immunity
- define "autoimmune disorder", ex.....rheumatoid arthritis