# IM 1 Pharm Immersion Lab – Scenario 1 Pathophysiology Sheets

**1. Disease Process & Brief Pathophysiology**

• **Heart failure (HF)** is an abnormal clinical syndrome that involves inadequate pumping and/or filling of the heart. This results in the inability of the heart to provide enough blood to meet the oxygen needs of the tissues.

**2. Factors for the Development of the Disease/Acute Illness (Heart Failure)**

Risk factors include CAD, HTN, and advancing age. Diabetes, tobacco use, obesity, and high serum cholesterol also contribute to the development of HF

**3. Signs and Symptoms (Heart Failure)**

fatigue, cough, dyspnea, tachycardia, edema, and limitations of usual activities of daily living (ADLs)

HF usually begins with signs of fluid retention, such as weight gain, exertional dyspnea, or orthopnea

Heart failure

**4. Diagnostic Tests pertinent or confirming of diagnosis (Heart Failure)**

chest x-ray, electrocardiogram (ECG), sleep studies, echocardiogram, stress testing, and cardiac catheterization.

**5. Lab Values that may be affected (Heart Failure)**

Cardiac markers (troponin, CK, myoglobin)

b-type natriuretic peptide

liver function

thyroid function

basic metabolic panel (electrolytes)

complete blood count

**6. Current Treatment (Heart Failure)**

Diuretics (ex: furosemide)

Antihypertensives

Oxygen

Antiarrhythmics

Thyroid medications

**1. Disease Process & Brief Pathophysiology**

• **Chronic obstructive pulmonary disease (COPD)** is

**2. Factors for the Development of the Disease/Acute Illness (COPD)**

**3. Signs and Symptoms (COPD)**

cough, sputum production, or dyspnea, and/or a

a preventable and treatable disease state characterized by airflow limitation that is not fully reversible. It is usually progressive and associated with an abnormal inflammatory response of the lungs to noxious particles or gases, primarily caused by cigarette smoking.

In addition to cigarette smoke, occupational chemicals, air pollution, severe recurring respiratory infections, and α1-antitrypsin deficiency (an autosomal recessive disorder) are risk factors for developing COPD

history of exposure to risk factors for the disease

Exacerbations of COPD are signaled by a change in the patient's usual dyspnea, cough, and/or sputum that is different than the usual daily patterns.

**4. Diagnostic Tests pertinent or confirming of diagnosis (COPD)**

Complete blood count

Arterial blood gases (ABGs)

Chest X-ray

Pulmonary Function Tests

**5. Lab Values that may be affected (COPD)**

Complete blood count

Arterial blood gases (ABGs)

**6. Current Treatment (COPD)**

Oxygen Therapy

Anticholinergic medications

Long-acting beta agonist inhalers

**1. Disease Process & Brief Pathophysiology**

● **Hypothyroidism** is a deficiency of thyroid hormone that causes a general slowing of the

**2. Factors for the Development of the Disease/Acute Illness (Hypothyroidism)**

It may be primary (related to destruction of thyroid

**3. Signs and Symptoms (Hypothyroidism)**

fatigue, lethargy, personality and mental changes,

metabolic rate

tissue or defective hormone synthesis) or secondary (related to pituitary disease with decreased TSH secretion or hypothalamic dysfunction with decreased thyrotropin-releasing hormone secretion)

decreased cardiac output, anemia, and constipation

**4. Diagnostic Tests pertinent or confirming of diagnosis (Hypothyroidism)**

Thyroid function tests

Thyroid X-ray

Thyroid Ultrasound

**5. Lab Values that may be affected (Hypothyroidism)**

Thyroid stimulating hormone (TSH)

T3 & T4 thyroxine levels

**6. Current Treatment (Hypothyroidism)**

Levothyroxine thyroid replacement

**1. Disease Process & Brief Pathophysiology**

**2. Factors for the Development of the**

**3. Signs and Symptoms (Glaucoma)**

● **Glaucoma** is a group of disorders characterized by increased intraocular pressure (IOP), optic nerve atrophy, and peripheral visual field loss

**Disease/Acute Illness (Glaucoma)**

Glaucoma is due to consequences of increased IOP (intraocular pressure) from decreased outflow of aqueous humor. Two types of glaucoma include primary angle-closure glaucoma (PACG) and primary openangle glaucoma (POAG), which is the more common

Compromised peripheral vision (PAOG)

Sudden, severe eye pain, nausea and vomiting (PACG)

**4. Diagnostic Tests pertinent or confirming of diagnosis (Glaucoma)**

Measurement of intraocular pressure

Dilated eye examination and imaging to check for optic nerve damage

Visual field test

**5. Lab Values that may be affected (Glaucoma)**

none

**6. Current Treatment (Glaucoma)**

Eye drops of the following categories:

- Prostaglandins
- Beta blockers
- Alpha-adrenergic agonists
- Carbonic anhydrase inhibitors
- Cholinergic agents