

## **Case Study: Sarah's Respiratory Issues**

**Background:** Sarah, a 45-year-old woman, has recently noticed an increase in shortness of breath over the past few weeks. She is generally healthy, does not smoke, and has no significant medical history. She leads a sedentary lifestyle and works a desk job.

### **Presenting Symptoms:**

Shortness of breath, particularly during physical activities like climbing stairs or brisk walking.

Occasional coughing, especially in the morning.

No significant chest pain or wheezing reported.

Normal body weight.

### **Medical History:**

No known respiratory conditions.

No history of cardiovascular disease.

No allergies reported.

### **Lifestyle and Environmental Factors:**

Sedentary lifestyle with minimal physical activity.

Works in an office with no exposure to known respiratory irritants.

No recent travel or exposure to sick individuals.

### **Diagnostic Steps:**

#### Physical Examination:

Examination of the chest for any signs of respiratory distress or abnormalities.

Listening to lung sounds for wheezing, crackles, or other abnormalities.

#### **Pulmonary Function Tests (PFTs):**

Spirometry to measure lung function, including the amount and speed of air that can be inhaled and exhaled.

#### Imaging Studies:

Chest X-ray to check for any structural abnormalities or signs of infection.

CT scan of the chest for a more detailed view of the lungs.

Laboratory Tests:

Complete blood count (CBC) to rule out anemia or infection.

Arterial blood gas (ABG) test to assess the oxygen and carbon dioxide levels in the blood.

Diagnosis: Following the diagnostic tests, it is determined that Sarah has early-stage chronic obstructive pulmonary disease (COPD). The PFTs show a decreased airflow, and the chest CT reveals signs of mild emphysema.

**Treatment Plan:**

Lifestyle Modification:

Introduction of a regular exercise routine to improve lung function and overall cardiovascular health.

Medication:

Bronchodilators to help open the airways and improve airflow.

Inhaled corticosteroids to reduce inflammation.

Pulmonary Rehabilitation:

Enrollment in a pulmonary rehabilitation program to provide education on managing symptoms and improving physical endurance.

**Follow-Up:**

Regular follow-up appointments to monitor lung function and adjust treatment as needed.

Patient education on recognizing and managing exacerbations.