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TITLE

Case Study Care Plan: COPD

Introduction to Physiology

Module: BMHP5023

Fictional Patient: Lara Wyse

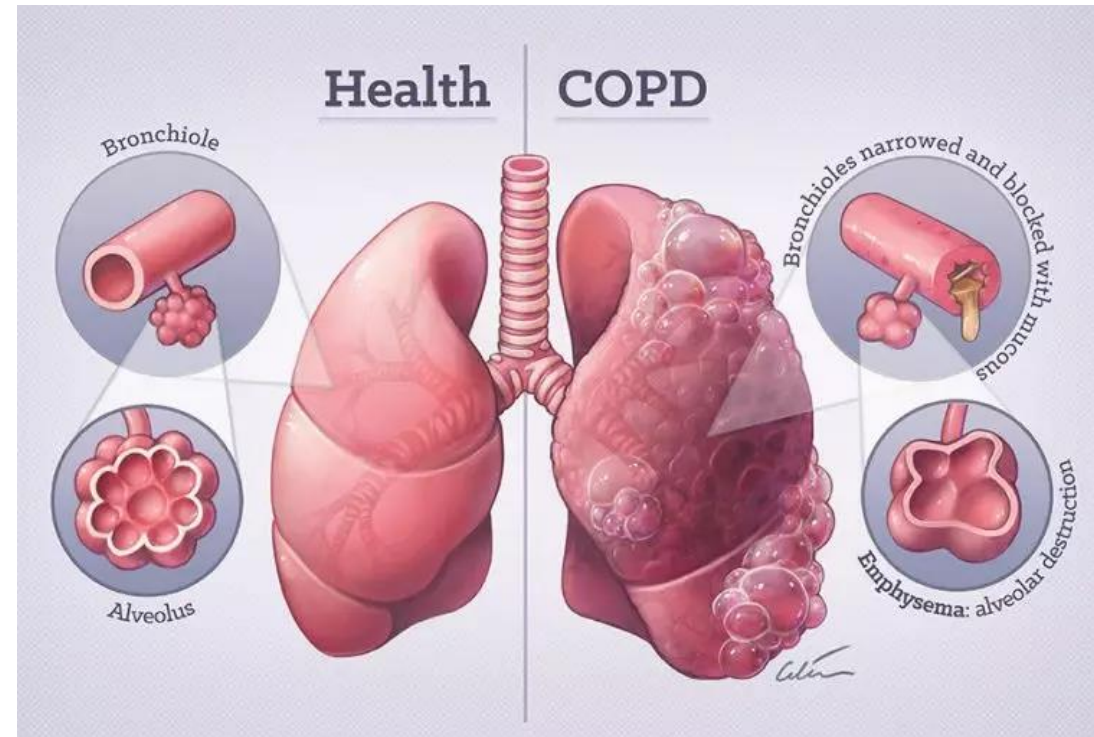
Student ID: 2423995

Voice-over Presentation 2026



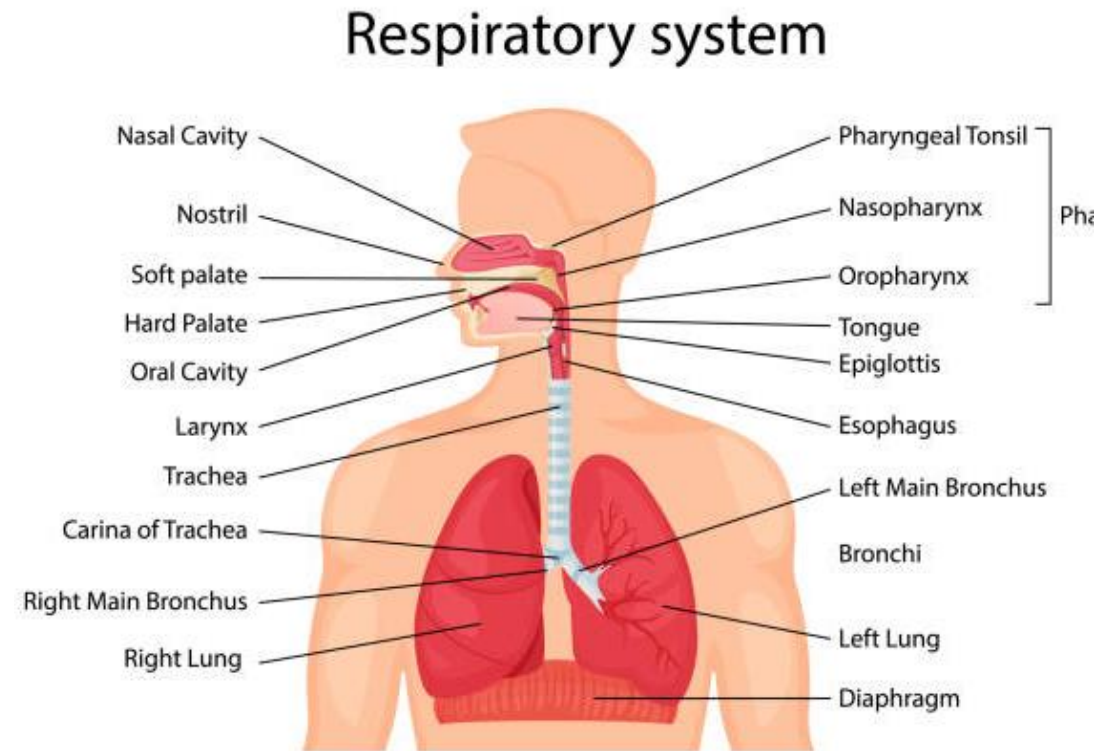
Introduction: Chronic Respiratory Disease

- Chronic respiratory diseases are a leading global health problem
- Chronic Obstructive Pulmonary Disease (COPD) affects airflow in the lungs
- Causes progressive breathing difficulty and reduced oxygen exchange
- Often linked to smoking and environmental exposure
- Understanding respiratory anatomy and physiology helps explain disease impact



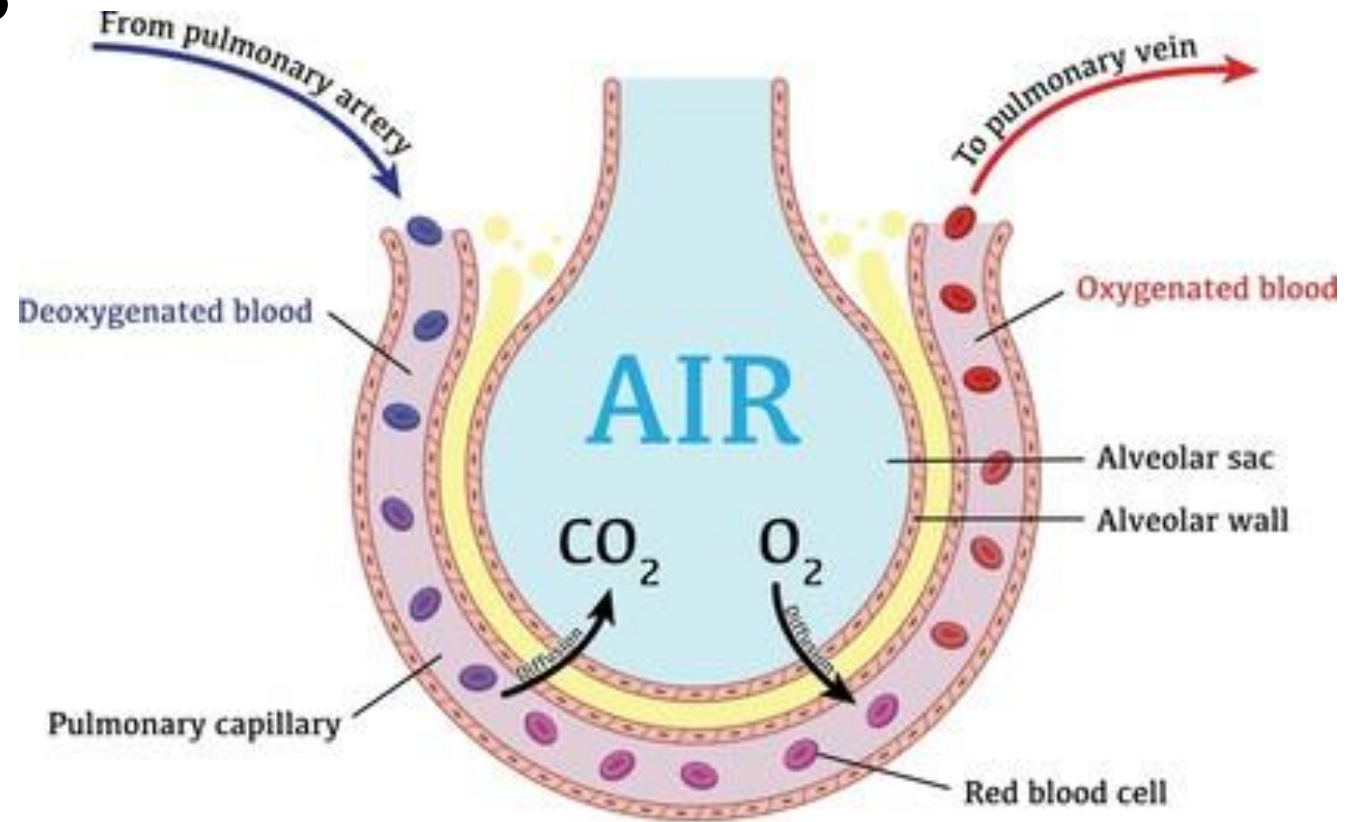
Anatomy of the Respiratory System

- Nasal cavity – filters and warms inhaled air
- Pharynx and larynx – air passage and voice production
- Trachea – airway conducting air to lungs
- Bronchi and bronchioles – branching airways inside lungs
- Alveoli – microscopic air sacs for gas exchange
- Diaphragm – primary muscle responsible for breathing



Physiology of Breathing and Gas Exchange

- Ventilation – movement of air into and out of the lungs
- Inhalation – diaphragm contracts and thoracic cavity expands
- Exhalation – diaphragm relaxes and air is expelled
- Gas exchange occurs in the alveoli
- Oxygen diffuses into the bloodstream through capillaries
- Carbon dioxide diffuses from blood into alveoli to be exhaled





Pathophysiology of Chronic Obstructive Pulmonary Disease

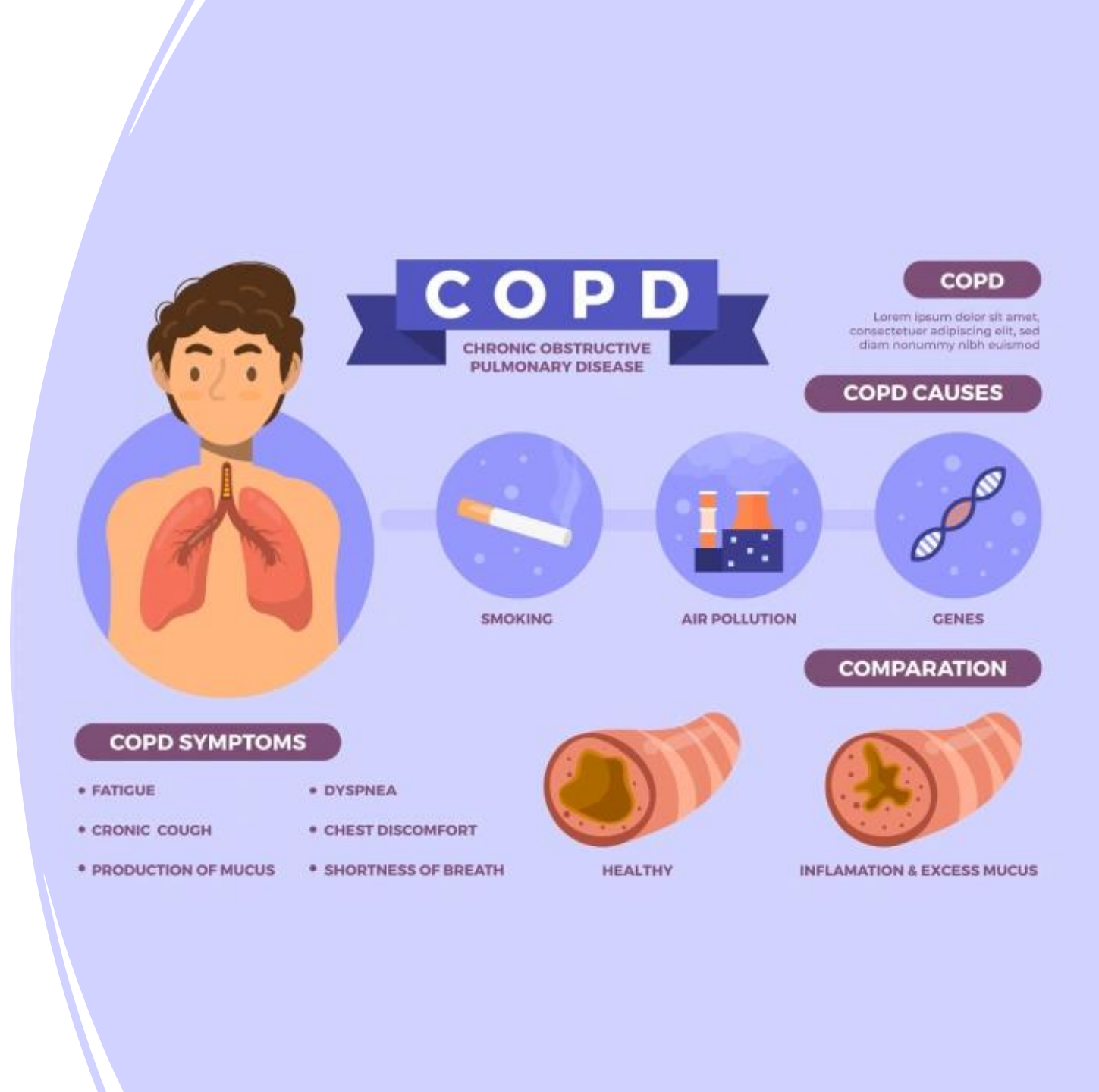
- Chronic inflammation of the airways
 - Narrowing of bronchi and bronchioles
 - Excess mucus production
 - Destruction of alveolar walls (emphysema)
 - Reduced surface area for gas exchange
 - Decreased oxygen delivery to body tissues
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Impact of COPD on Respiratory Function

- Airflow limitation due to narrowed airways
- Reduced oxygen absorption in alveoli
- Increased carbon dioxide retention
- Shortness of breath (dyspnoea)
- Persistent cough and mucus production
- Reduced exercise tolerance and fatigue

Case link:

Lara Wyse experiences breathlessness, chronic cough, and fatigue during daily activities.





Risk Factors and Lifestyle Influences

Patient Demographics

- Name: Lara Wyse
 - Age: 58 years
 - Gender: Female
 - Occupation: Former factory worker
 - Diagnosis: Chronic Obstructive Pulmonary Disease (COPD)

Lifestyle Risk Factors

- Long-term smoking history (25 years)
- Exposure to industrial dust and pollutants
- Physical inactivity
- Increasing age-related decline in lung function

Evidence-Based Care Plan for COPD

Lifestyle Interventions

- Smoking cessation support
 - Increased physical activity
 - Pulmonary rehabilitation programmes
 - Balanced nutritional support

Medical Management

- Bronchodilator inhalers to improve airflow
 - Inhaled corticosteroids to reduce inflammation
 - Vaccinations (influenza and pneumococcal)
 - Oxygen therapy for severe COPD cases

Monitoring and Routine Care for COPD



Clinical Monitoring

- Spirometry tests to measure lung function
- Oxygen saturation monitoring (pulse oximetry)
- Regular GP or respiratory specialist reviews



Patient Self-Management

- Tracking breathlessness and cough symptoms
- Correct use of inhaler medication
- Maintaining physical activity levels



Healthcare Support

- Pulmonary rehabilitation follow-ups
- Early treatment of COPD exacerbations
- Education on symptom management

Communication and Ethical Considerations

Communication Strategies

- Use clear, simple language tailored to the patient
 - Active listening to understand patient concerns
 - Encourage questions and participation in care planning
- Include family or carers if patient consents

Ethical Considerations

- Maintain confidentiality of patient information
- Obtain informed consent for interventions
- Respect autonomy and decision-making
- Provide care following NHS and NICE ethical guidelines

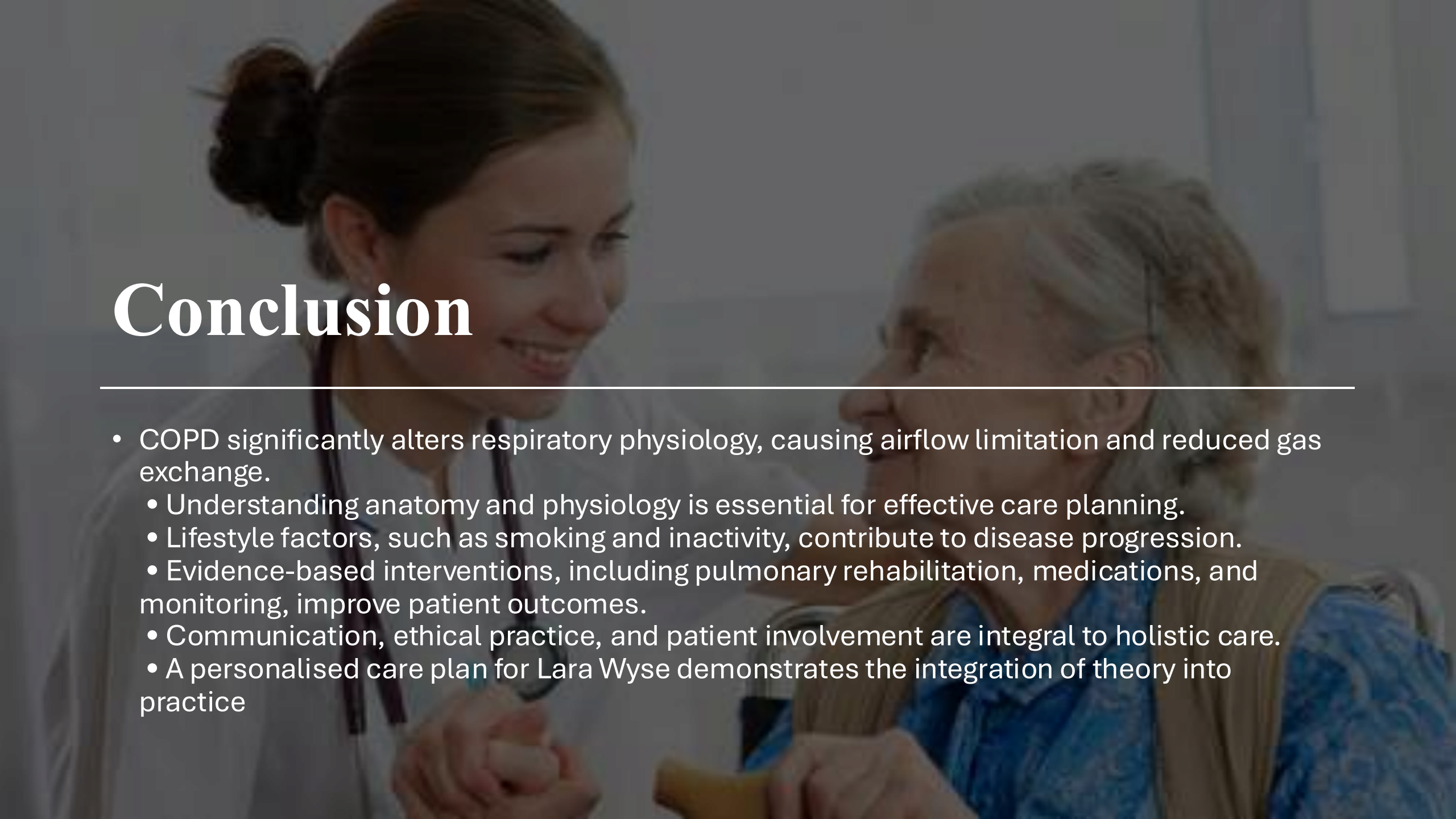
Final Recommendations: COPD Care for Lara Wyse

Lifestyle & Self-Management

- Smoking cessation support and counselling
- Participation in pulmonary rehabilitation
- Maintain regular physical activity
- Balanced nutrition to support lung function
- Monitor symptoms and daily breathlessness

Medical & Professional Care

- Correct use of bronchodilator and corticosteroid inhalers
- Regular spirometry and oxygen monitoring
- Annual vaccinations (influenza and pneumococcal)
- Education on exacerbation management
- Ongoing communication, follow-ups, and ethical care

A background image showing a young female doctor with a stethoscope around her neck, smiling and looking down at an elderly female patient. The patient is holding a small object, possibly a piece of fruit, and looking up at the doctor. The image is dimmed to allow text to be overlaid.

Conclusion

- COPD significantly alters respiratory physiology, causing airflow limitation and reduced gas exchange.
 - Understanding anatomy and physiology is essential for effective care planning.
 - Lifestyle factors, such as smoking and inactivity, contribute to disease progression.
 - Evidence-based interventions, including pulmonary rehabilitation, medications, and monitoring, improve patient outcomes.
 - Communication, ethical practice, and patient involvement are integral to holistic care.
 - A personalised care plan for Lara Wyse demonstrates the integration of theory into practice

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