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Student Name:

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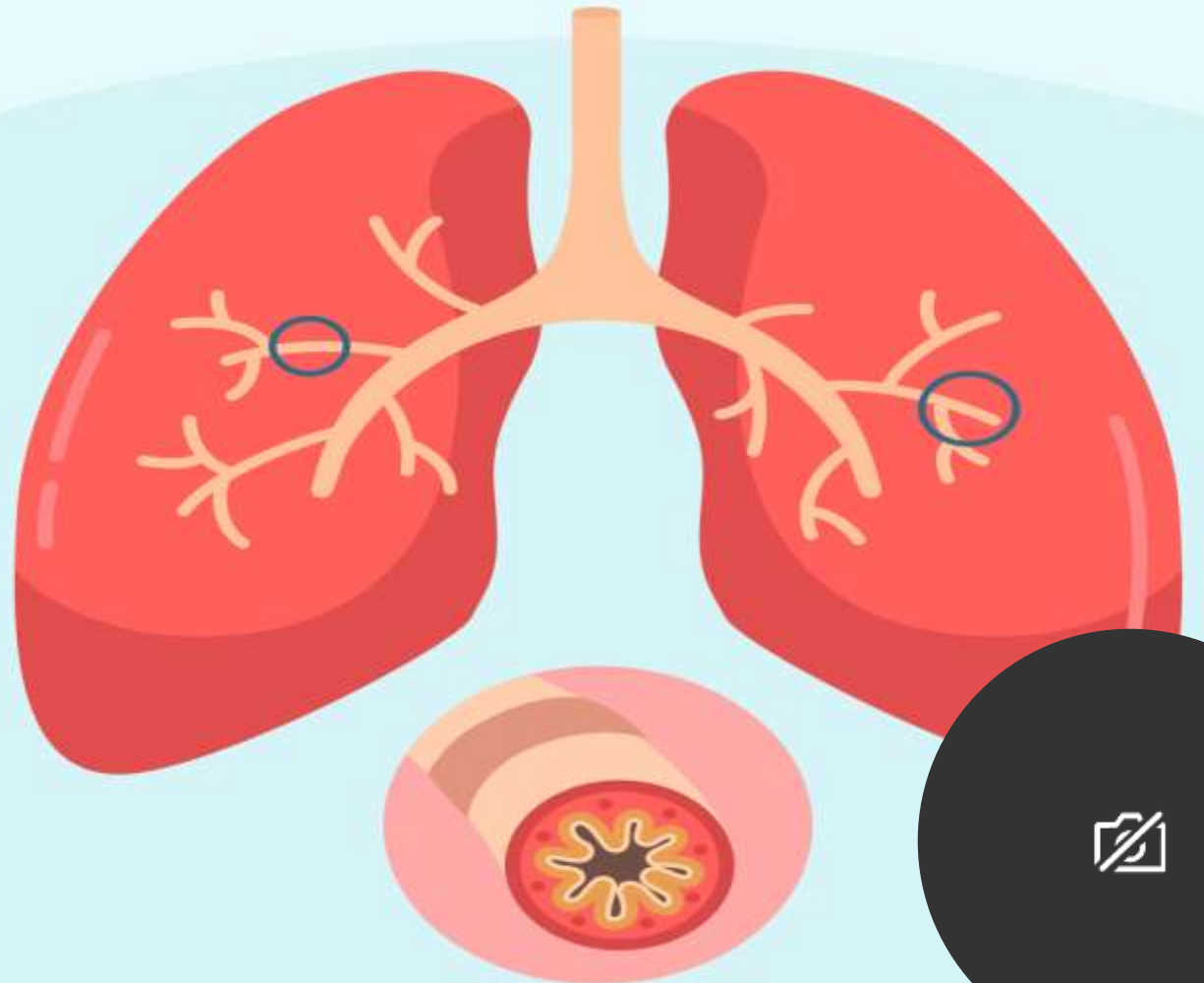
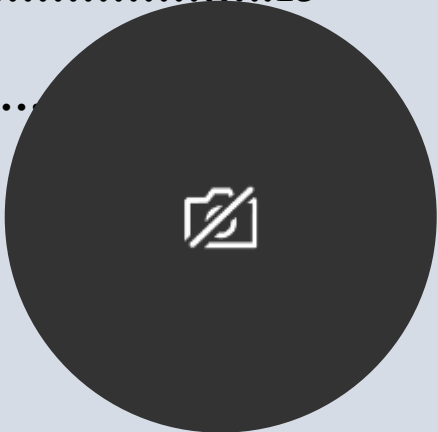


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Introduction

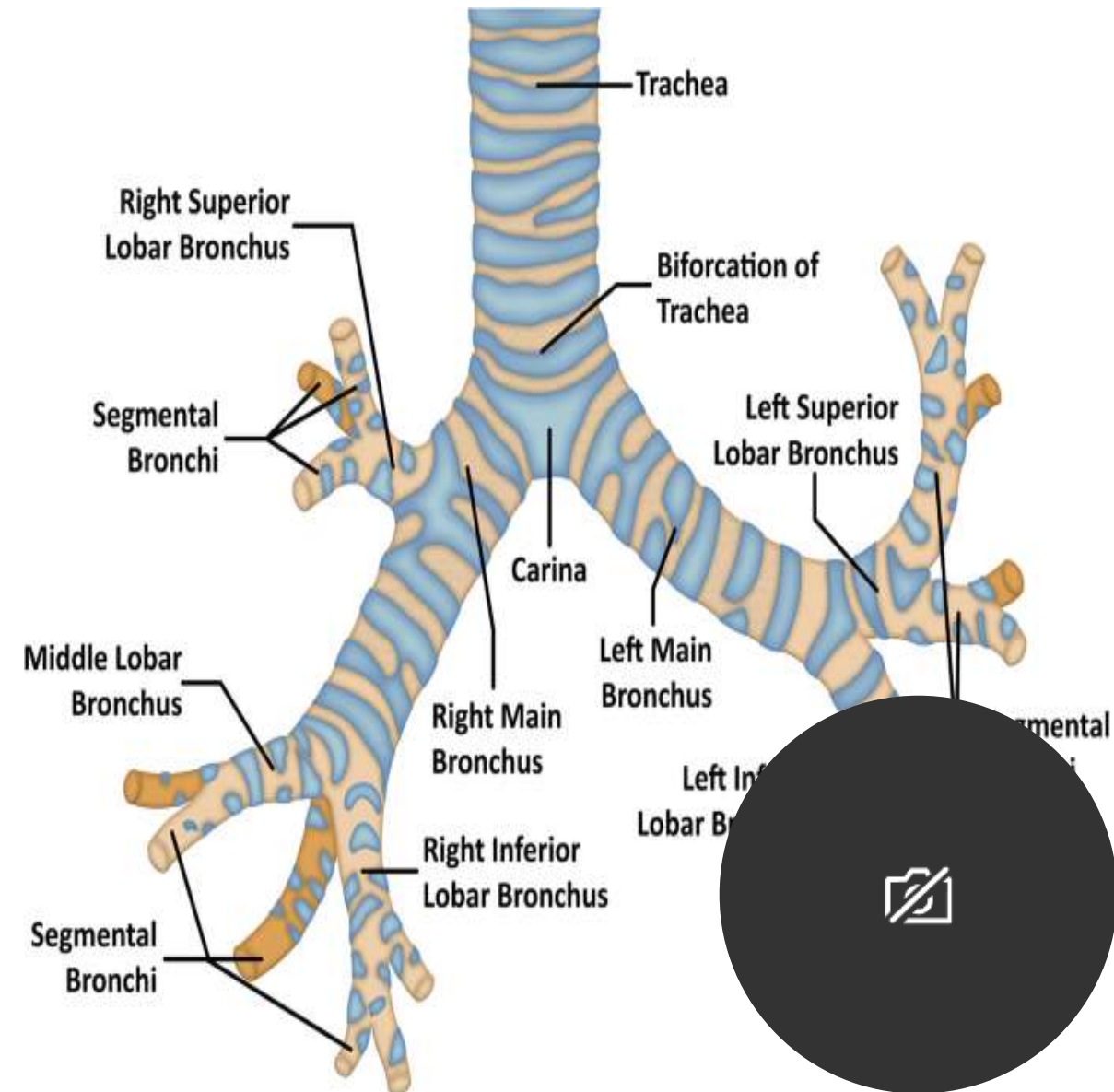


- Physiology is the study of the chemical and physical functions of living organisms and their parts (Peate and Evans, 2026).
- In relation to this, a personalised care management plan for a fictional patient with COPD, a prevalent chronic respiratory condition, will be discussed in the presentation.

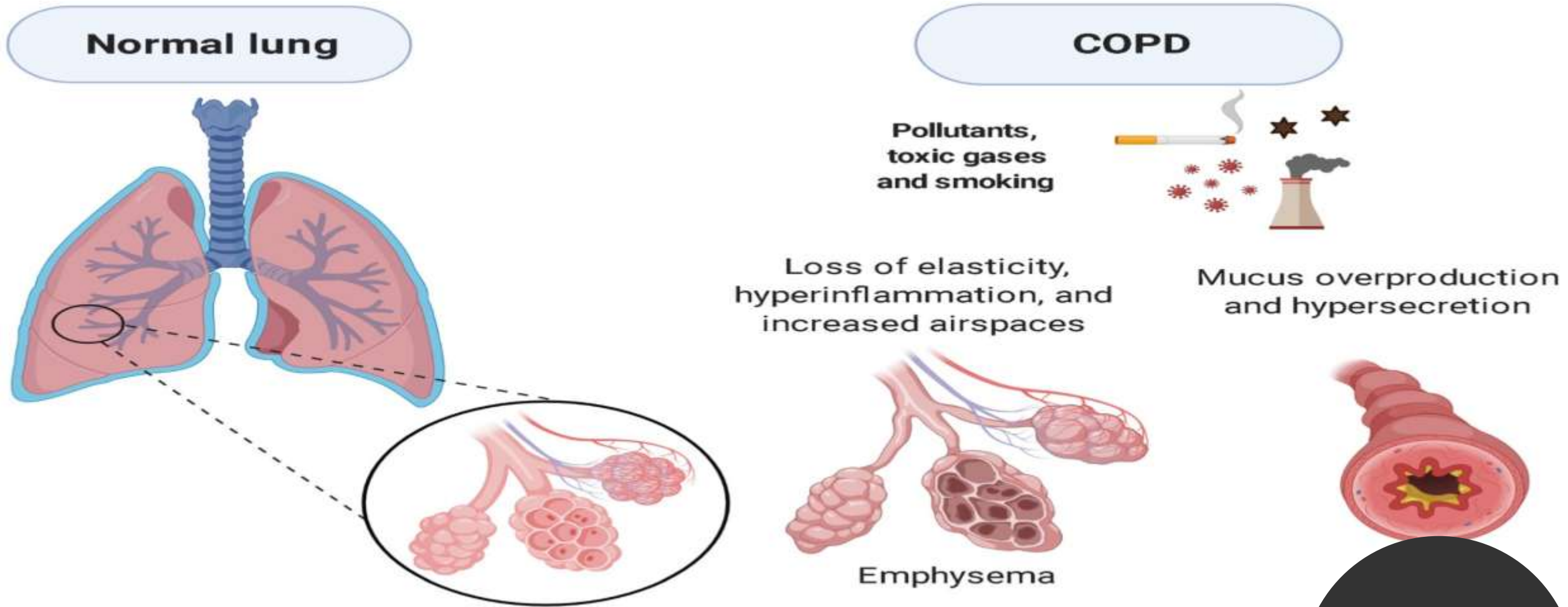


Analysis of the physiology and anatomy of the respiratory system affected by chronic respiratory diseases

- The trachea branches into bronchi and smaller bronchioles and alveoli, which are tiny, elastic-like air sacs present at the ends of the bronchioles (Corder and Henderson, 2025).
- These are responsible for exchanging oxygen and carbon dioxide with the blood, which are key parts which are affected by COPD.



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Physiology

- Chronic inflammation within COPD causes airway narrowing and mucus overproduction which is termed as chronic bronchitis (Wheeldon, 2023).
- The destruction of alveolar walls (Emphysema) reduces the surface area required for oxygen to enter the blood stream, leading to a dangerous drop in SpO₂.

Ways through which body functioning system affected by chronic respiratory diseases

Respiratory muscle dysfunction in acute and chronic respiratory failure: how to diagnose and how to treat?

[Diego Poddighe](#)^{1,9}, [Marine Van Hollebeke](#)^{1,9}, [Antenor Rodrigues](#)^{2,3}, [Greet Hermans](#)^{4,5}, [Dries Testelmans](#)⁶,
[Alexandros Kalkanis](#)⁶, [Beatrix Clerckx](#)^{4,5}, [Ghislaine Gayan-Ramirez](#)⁷, [Rik Gosselink](#)^{1,8}, [Daniel Langer](#)^{1,✉}

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(Poddighe *et al.*, 2024)

- Chronic respiratory diseases structurally degrade the lungs, which leads to poor gas exchange and low blood oxygen.
- This generally forces the heart and the respiratory muscles into dangerous overwork to maintain bodily functions creating a cascading cycle of systemic inflammation, pulmonary hypertension and heart failure (Poddighe *et al.*, 2024).



Care Plan for an Elderly Person



Demographic information

- A 65-year-old man, Andrew Boston, lives in social isolation and suffers from chronic obstructive pulmonary disease (COPD).
- Unemployment, an urban environment, and a lack of social support increase his vulnerability during and after the pandemic (Maroto and Pettinicchio, 2023).



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Risk factors based on lifestyle

- The lack of physical exercise and regular smoking make him more susceptible to breathlessness and diminish the effectiveness of his rehabilitation efforts (WHO, 2023).
- Without a supportive social network, he fails to recognise his symptoms earlier and seek help until an emergency occurs.

Smoking is the leading cause of
chronic obstructive pulmonary
disease

(WHO, 2023)



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Cough that won't go away? Persistent cough causes and when to see a doctor

(HealthPartners, 2026)

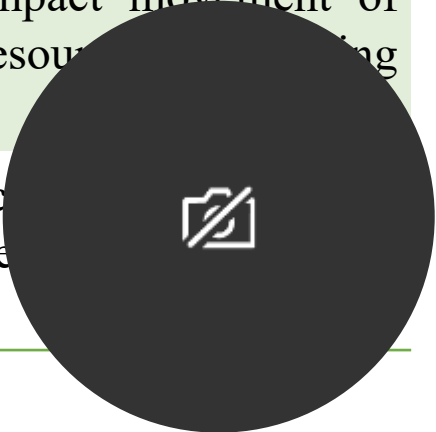
Risk factors based on the disease

- Continuous cough and fever in the old man, Andrew Boston, indicate ongoing infection and uncontrolled airway inflammation.
- Knee pain limits his mobility, and hearing loss causes communication difficulties as well as accelerates social isolation.
- A history of frequent respiratory infections and chronic bronchitis makes his lungs highly vulnerable to persistent tissue damage (HealthPartners, 2026).

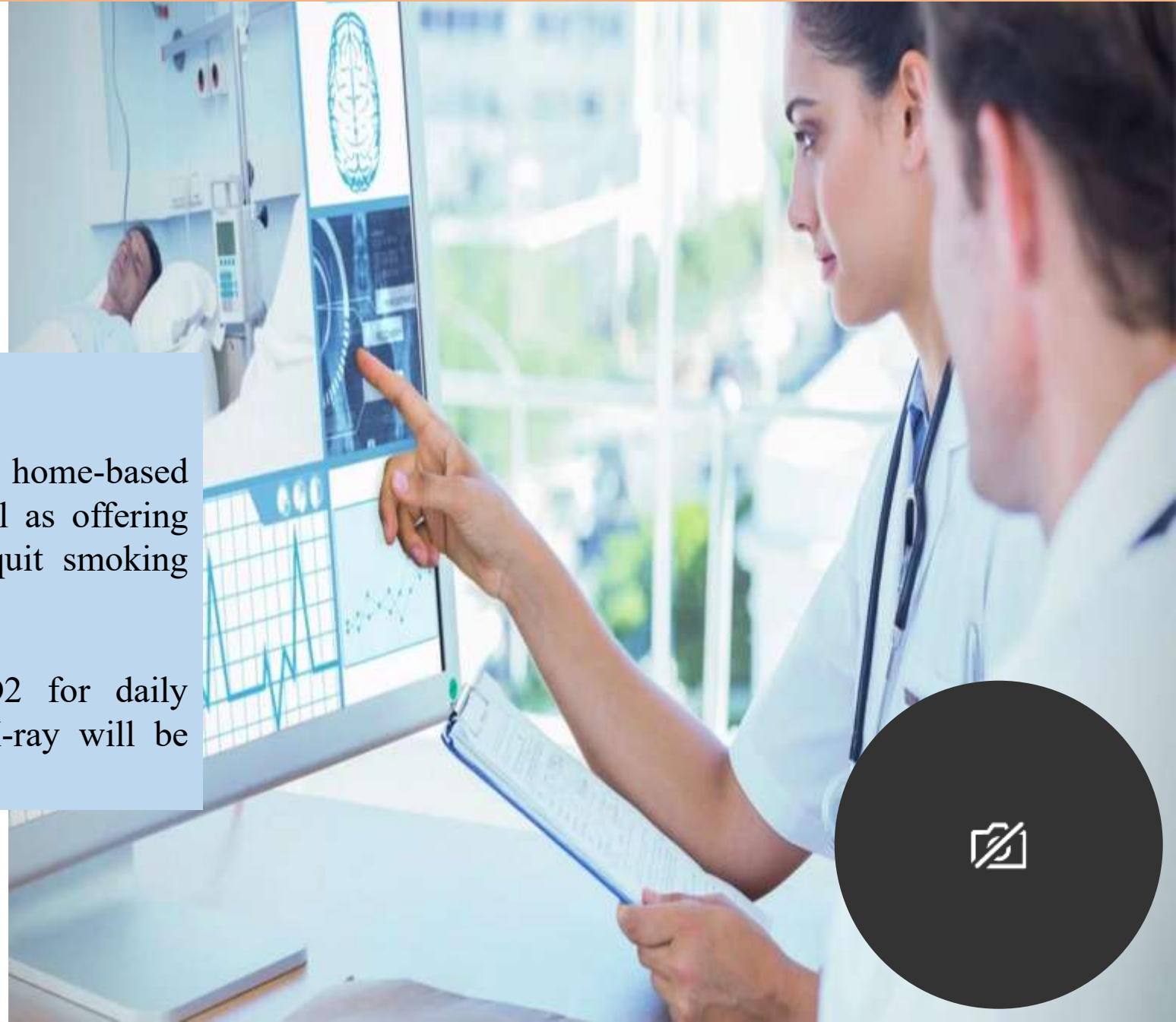


Care Plan

Assessment	Care practitioners will assess social isolation, mental health, sputum production, and cough of the patient (Des Jardins and Burton, 2023).
Diagnosis	Impaired gas exchange related to alveolar damage and ineffective airway clearance associated with chronic cough and inflammation will be diagnosed (Wayne, 2024).
Planning	A routine local support system needs to be established to ensure medication adherence and reduce his isolation (Kydonaki and Parke, 2023).
Implementation	Caregivers will encourage daily low-impact movement of Andrew and provide him with essential resources for smoking cessation (GOV.UK, 2025).
Evaluation	Professionals will evaluate the frequency of cough and confirm the ability of the patient to do breathing exercises (Medeiros, 2025).



Outlining recommendations



Care routine and clinical monitoring

- Implementing daily pursed lip breathing, a home-based exercise routine adapted for knee pain as well as offering nicotine replacement therapy to Andrew to quit smoking (NHS, 2026b).
- Moreover, utilising pulse oximetry for SpO₂ for daily measurement followed by a monthly chest X-ray will be helpful for reviewing the lung condition.

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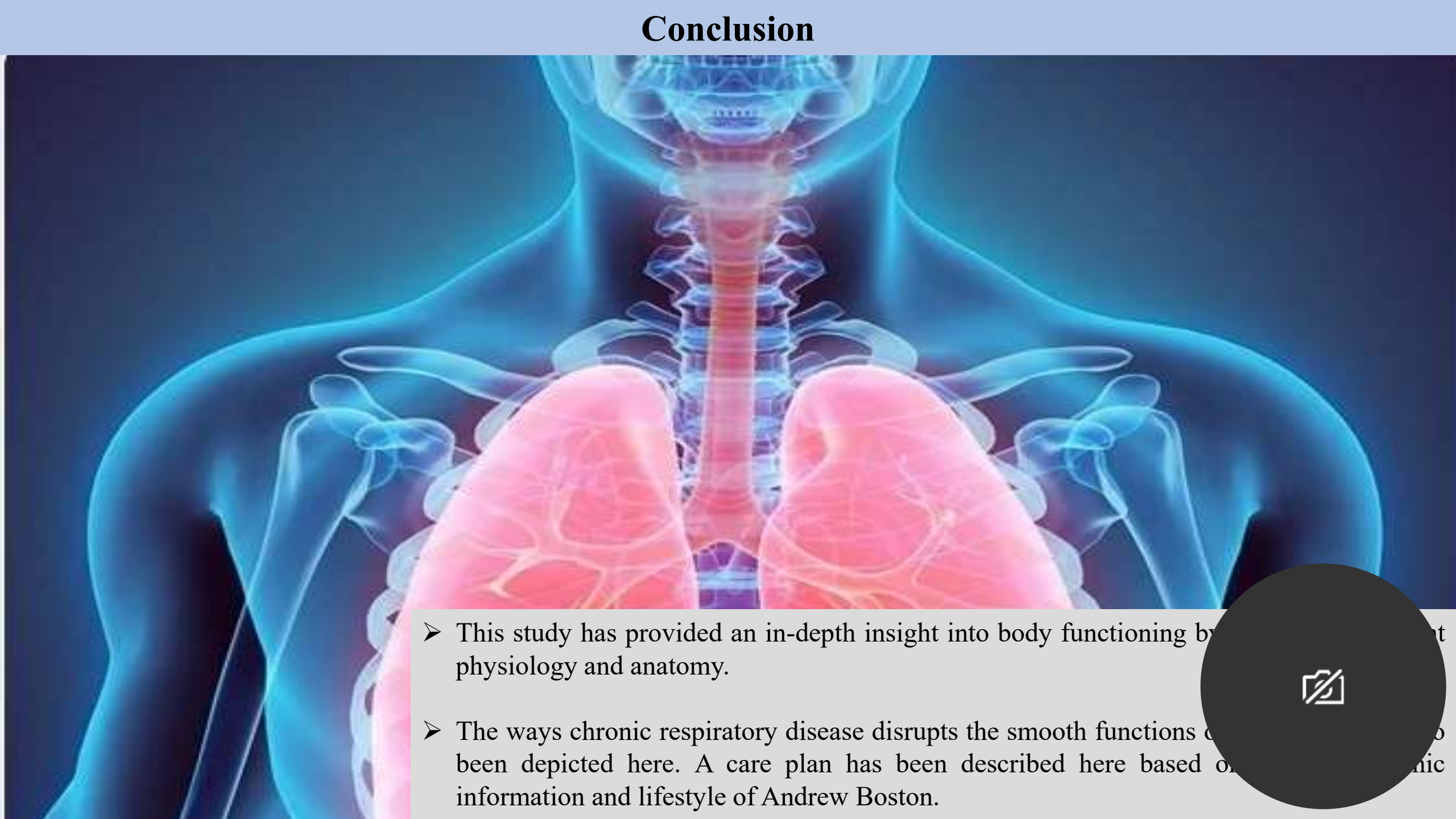


Care planning, communication and ethics

- Implementation of a traffic light exacerbation action plan with emergency rescue packs as well as considering weight-bearing exercises can be done to manage knee pain (Nottsapc.nhs.uk, 2026).
- Engaging primary care and local social services via telehealth, digital check-ins, honoring the patient autonomy regarding smoking while maximising clinical safety and maintaining ongoing contact with out-of-state family members.



Conclusion

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- This study has provided an in-depth insight into body functioning by understanding the different aspects of human physiology and anatomy.
 - The ways chronic respiratory disease disrupts the smooth functions of the respiratory system have been depicted here. A care plan has been described here based on the clinical information and lifestyle of Andrew Boston.



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