

HEALTHCARE TODAY :

CARE PLAN FOR A PATIENT WITH ASTHMA

Presented By :

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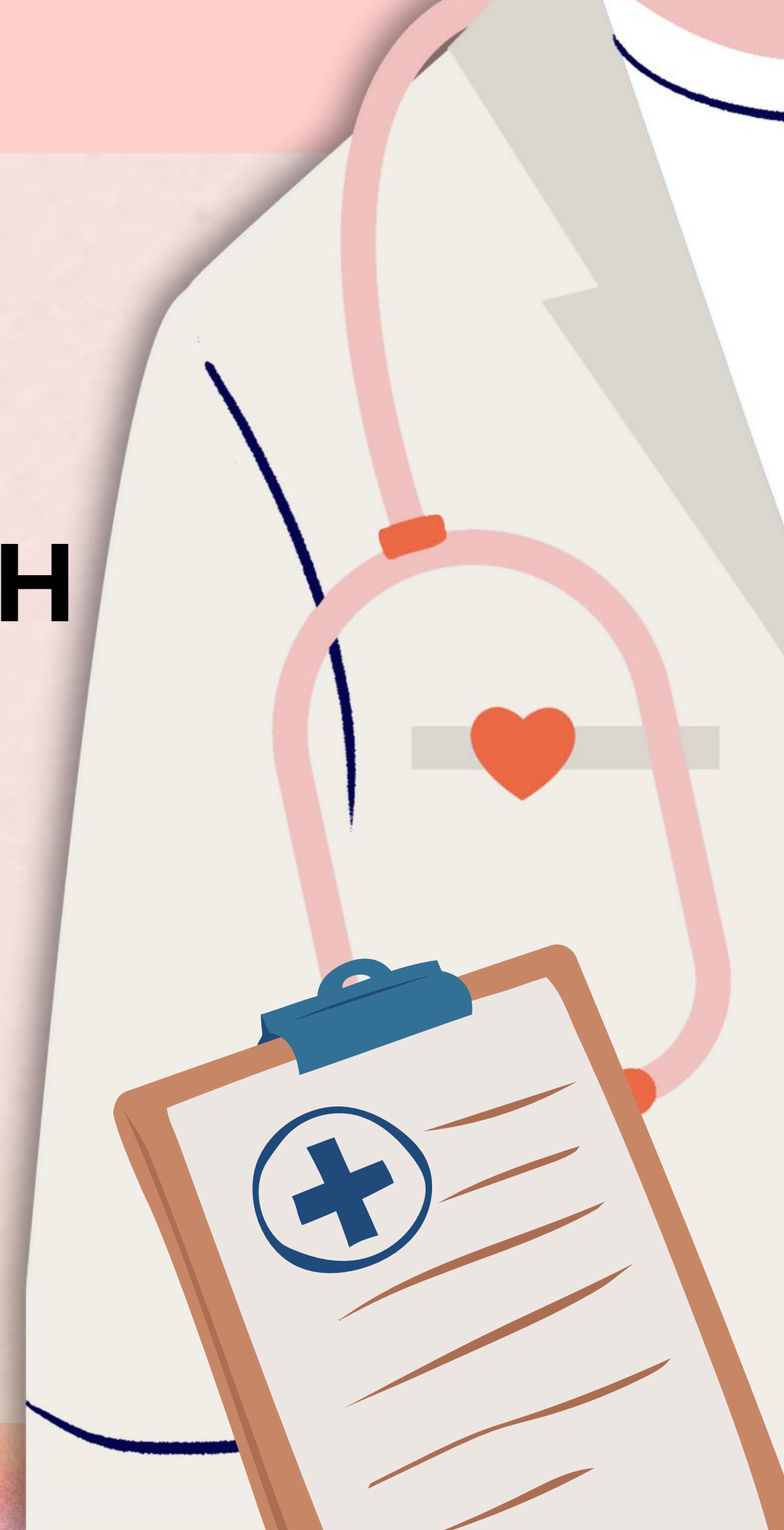


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INTRODUCTION

This is exemplified by introducing a patient, Mrs Sarah Thompson, who is 38 years of age, female, works as a hairdresser, and is from an urban setting. Her symptoms of wheeze, thoracic tightness, and dyspnea occur in response to chemicals found in hair spray products, as well as at nighttime. This patient meets the criteria for moderate persistent asthma, with the frequency of her symptoms occurring at least 3-4 times a week, in addition to nocturnal awakenings occurring due to dyspnea at least twice a week. She is sedentary, an occasional smoker, and overweight, with a body mass index of 29 kg/m².

Asthma is a chronic respiratory condition characterised by reversible airflow obstruction, airway reactivity, and airway inflammation (GINA, 2023). It remains one of the major chronic health conditions that affects adults in the United Kingdom.

ANATOMY OF THE RESPIRATORY SYSTEM

The respiratory system contains elements that make up respiration as well as gas exchange. Air passes through both nose and mouth, then into the pharynx before proceeding to the trachea, which divides into the right and left bronchi. These then divide into bronchioles with layers of smooth muscle that can narrow or widen the air passages.

Primary respiratory muscles such as the diaphragm and intercostal muscles trigger the respiratory mechanism.

During respiration, the diaphragm contracts to increase the thoracic cavity volume, causing air to enter the lungs (Tortora & Derrickson, 2021). Damage to these muscles or airways could interfere with respiration.





PHYSIOLOGY OF NORMAL BREATHING

Normal respiration requires adequate ventilation, functioning alveoli, and clear air passages. During inhalation, air enters the lungs through the creation of negative pressure by the diaphragm and intercostal muscles. Air passes through the open bronchi and bronchioles.

Gas exchange occurs through the diffusion of oxygen into the bloodstream through the alveolar membrane and the diffusion of Carbon dioxide out of the bloodstream for exhalation (Sherwood, 2016). A relaxed state of smooth muscle facilitates bronchodilation to ensure that airflow is optimised.

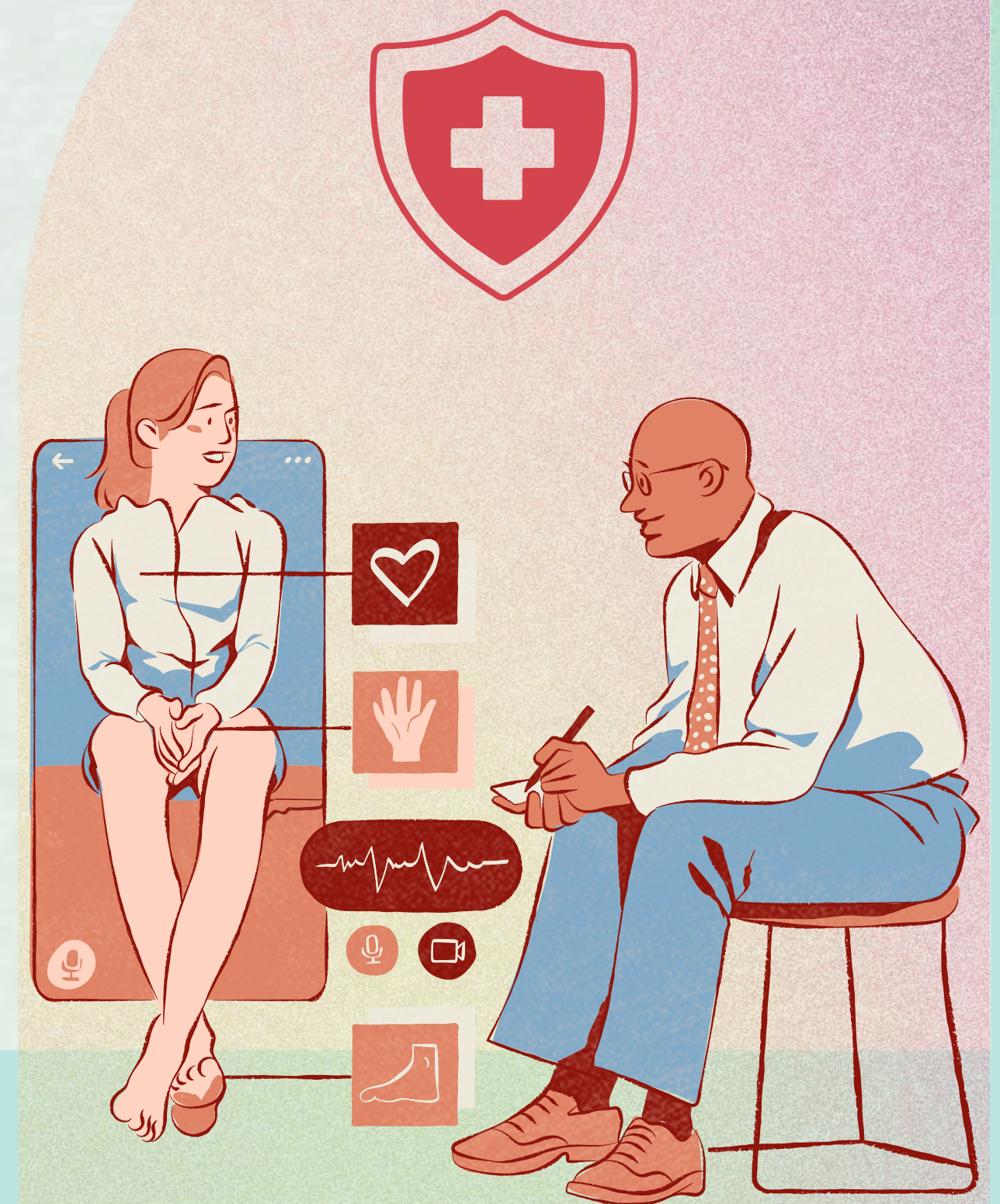


PATHOPHYSIOLOGY OF ASTHMA

In asthma, airway inflammation and reactivity disturb the normal process of respiration. Stimulation by allergens, irritants, or cold air triggers an exaggerated immune reaction. Principal immune factors released by mast cells, eosinophils, and T-lymphocytes include:

- Airway inflammation with wall swelling
- Bronchoconstriction resulting from smooth muscle contraction
- Excessive mucus-producing blockages, decreased mucus clearance.

These result in airway resistance, dyspnea, wheeze, chest tightening, and coughing (GINA, 2023). During acute attacks, airflow is severely compromised, significantly reducing oxygen exchange, thus potentially increasing respiratory distress (NICE, 2022).





HOW ASTHMA AFFECTS THE RESPIRATORY SYSTEM

Inhaling and exhaling become difficult for the patient with asthma as airway obstruction results in air entrapment with subsequent hyperinflation of the lungs. Airflow reduction leads to poor oxygenation with decreased elimination of CO₂, potentially causing respiratory acidosis. Spirometry would reveal reduced FEV₁ and an FEV₁/FVC ratio, both of which are signs of obstructive disease. Variability of symptoms is characteristic of asthma too (NICE, 2022).

PATIENT DEMOGRAPHICS & RISK FACTORS

Several things increase Sarah's chances of having poorly controlled asthma:

Demographic

- **Female gender:** Women experience more exacerbations as adults.
- **Urban setting:** more pollutants and allergens.
- **Genetic factors:** family history of atopy.

Lifestyle

Occupational exposure: Hairdresser exposed to sprays and dyes, which can irritate the air passages.

Smoking: even occasional use can increase inflammation and reduce the effectiveness of inhaled corticosteroids (NHS, 2023). -

Sedentary/overweight: associated with increased inflammation levels and limited lung capability. These elements mean that individual lifestyle adjustments are crucial for effective asthma management.



MONITORING ASTHMA

Successful asthma care depends on monitoring to evaluate levels of control to guide management. Types of monitoring:

- **PEFR:** daily measurement to look for signs of reduction.
- **Spirometry:** Objective lung function measurement by using parameters such as FEV1.
- **Asthma Control Test (ACT)** Assessment of a validated symptom/control questionnaire.
- **Symptom Diary:** keeping a record of triggers, nighttime symptoms, and inhaler use.

NICE (2022) recommends that care should be reviewed at least every 3 months for patients with uncontrolled asthma.



PHARMACOLOGICAL CARE PLAN

- **Reliever: Short-acting β_2 -agonist (SABA) – Salbutamol.**
- **Preventer: Inhaled Corticosteroid (ICS) – Reduces airway inflammation. Dosage: Medium because the patient experiences symptoms frequently.**
- **Add-on therapy: Long-acting β_2 -agonist (LABA) – Patients with persistent symptoms despite ICS treatment can benefit from ICS & LABA combination therapy.**



NON-PHARMACOLOGICAL CARE PLAN

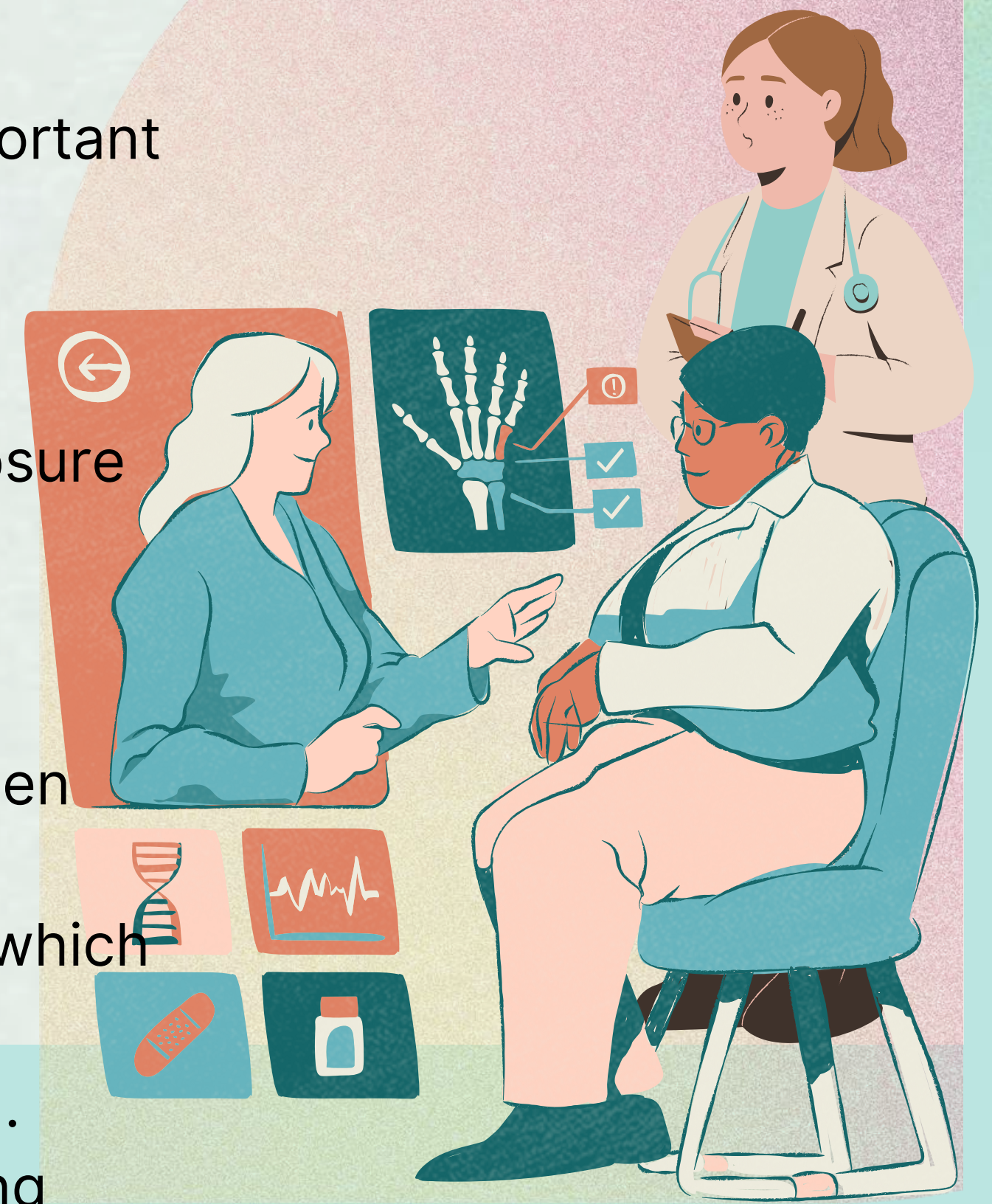
NHS and NICE promote holistic asthma treatment. Important non-medication steps:

Smoking cessation support (Referral to stop-smoking services)

- Working environment modifications to reduce exposure to irritants or wearing masks
- Weight control: a reduction in weight can increase respiratory function and alleviate symptoms
- Exercise, such as walking or swimming, to strengthen the respiratory muscles
- Influenza vaccination to protect against infections which can aggravate asthma attacks

Trigger avoidance (dust, chemicals, cold air, allergens).

Such lifestyle modifications are very helpful in managing



ETHICAL CONSIDERATIONS

Patient-centred, ethics-driven, and asthma-focused considerations in asthma care include the following:

- Protect the confidentiality of patient information according to NHS guidelines.
- Autonomy: assist in making decisions for treatment, inhalers, and lifestyle modifications for Sarah.
- Beneficence and Non-maleficence: Do good and do not harm patients, such as minimising exposure to irritating substances.
- Justice: promote equal access to resources such as inhalers, spirometry, and smoking cessation treatment.

They promote safe, respectful, and professional practice in caregiving.

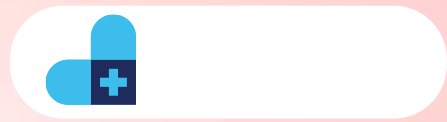




CONCLUSION

Asthma is a chronic illness which significantly impacts respiratory physiology because of airway inflammation, bronchial constriction, and excess mucus production. For patients with asthma, such as in this case with Sarah, asthma can effectively be controlled with a combination of an in-depth knowledge of physiology, pharmacologic treatment, and patient education.

Complying with NHS and NICE guidelines is critical to ensuring a safe and efficient service delivery in managing asthma. Working in conjunction with guidelines pertaining to ethics and patient-centred communication, these strategies will go a long way in ensuring a reduction in symptoms and prevention of attacks.



THANK YOU

ANY QUESTIONS

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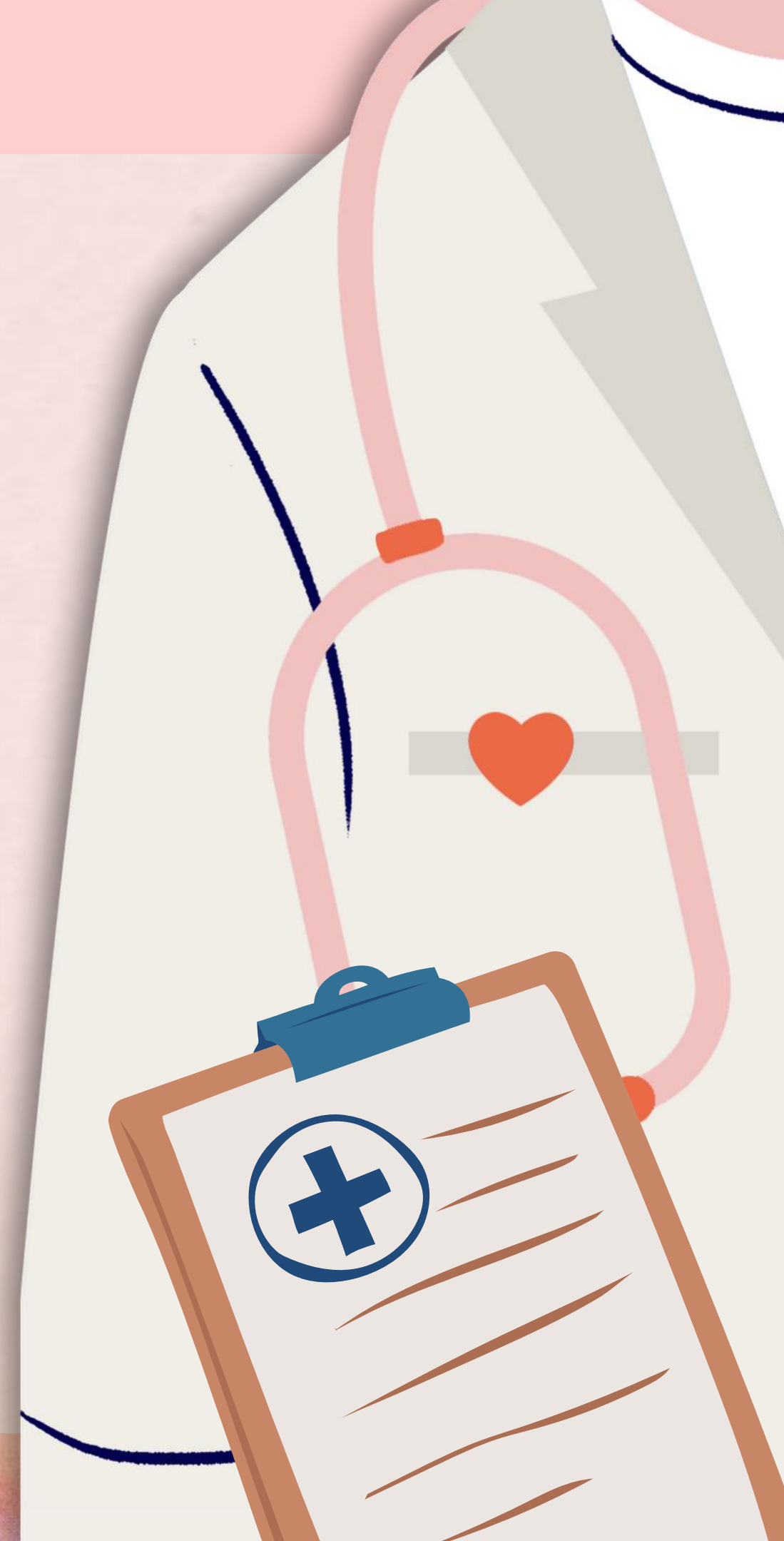
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RECORDING OF POWERPOINT

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