NATIONAL PRIMARY HEALTH CARE DEVELOPMENT AGENCY

MODULE 9: NON-COMMUNICABLE DISEASES (NCDs) IN PRIMARY HEALTH CARE

Overview of Non-Communicable Diseases (NCDs) in Primary Health Care

Sessions	Components
9.1	Hypertension
9.2	Diabetes
9.3	Asthma and COPD
9.4	Stroke
9.5	Cancer
9.6	Sickle Cell Disease

Introduction

Non-Communicable diseases	Non-Communicable Diseases refer to a group of diseases that cannot be transferred from one person to another
Examples	The common NCDs are hypertension, diabetes, cancers, stroke, Chronic Obstructive Pulmonary Disease (COPD), asthma, mental health , Sickle Cell Diseases (SCDs)
Risk factors	The common things that can lead to the development of NCDs include tobacco use, alcohol use, physical in-activity, poor diet, obesity, and increasing age

Selection criteria for NCDs patients to be managed in the PHCs

The NCDs patients that would be managed in the PHCs are:

1. Those who are clinically stable
2. Not pregnant
3. Those who do not have uncontrolled complications like heart or kidney failure or stroke in hypertensive patients

SESSION 9.1:HYPERTENSION

Learning objectives

At the end of this session, Participants will be able to;

1. Define hypertension and its risk factors
2. Mention the signs and symptoms of hypertension
3. Know how to accurately measure blood pressure and diagnosis
4. Know the treatment and medication of Hypertension
5. Know the pharmacological and non-pharmacological treatment
6. Know when to refer patients
7. Know prevention of Hypertension

Session overview

- Introduction to Hypertension and risk factors
- Signs and symptoms of Hypertension
- Diagnosis of Hypertension
- Treatment of Hypertension
- Pharmacological and non-pharmacological treatment
- When to refer patients
- Prevention of Hypertension

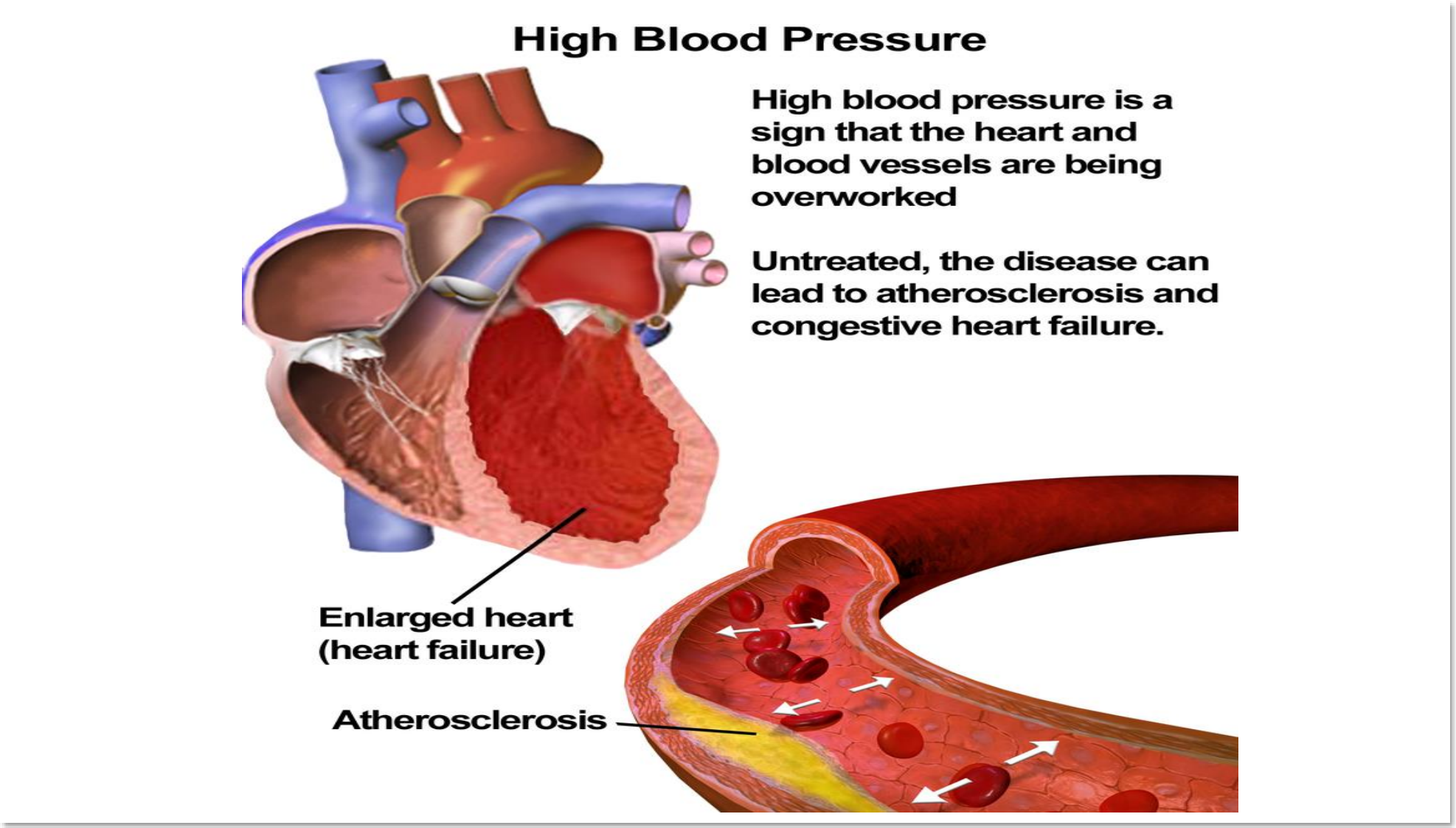
Introduction

Hypertension, also known as high or raised blood pressure, is a condition in which the blood vessels have persistently raised pressure

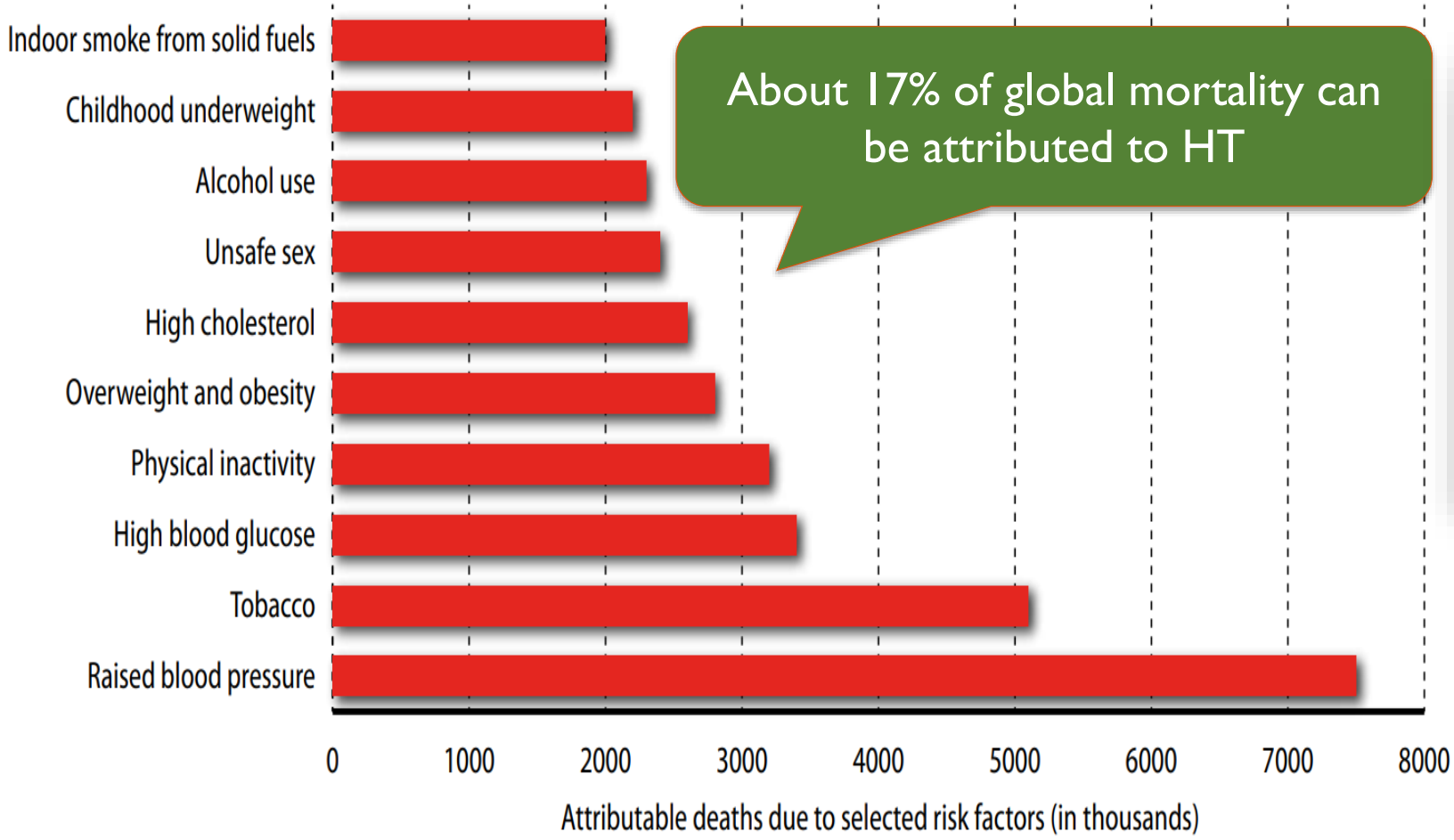
Risk factors

1. Increasing age
2. Tobacco use
3. Family history of hypertension (Genetic)
4. Sedentary life-style

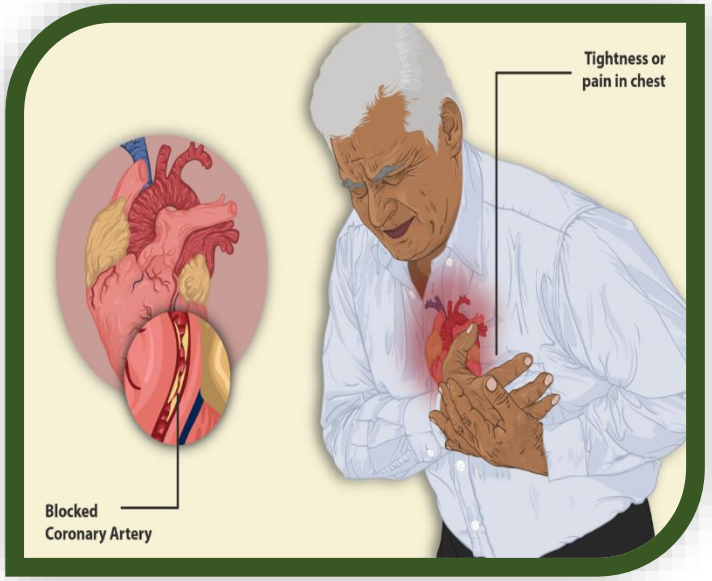
High blood pressure



Hypertension (raised blood pressure) is the leading risk factor for cardio vascular diseases globally



About 17% of global mortality can be attributed to HT



Source: World Health Organisation. Global atlas on cardiovascular disease prevention and control. 2011
Available at: http://www.who.int/cardiovascular_diseases/publications/atlas_cvd/en/index.html

Signs and symptoms

- Hypertension is described as a silent killer because it typically shows no sign or symptoms.
- However, some patients may complain of the following:

1. Headache
2. Poor sleep
3. Leg swelling
4. Chest pain
5. Cough
6. Nose bleeding in severe cases

Diagnosis

Hypertension is diagnosed if, **on two occasions:**

1. Systolic blood pressure on both occasions is ≥ 140 mmHg



2. Diastolic Blood Pressure is ≥ 90mmHg



Brainstorm

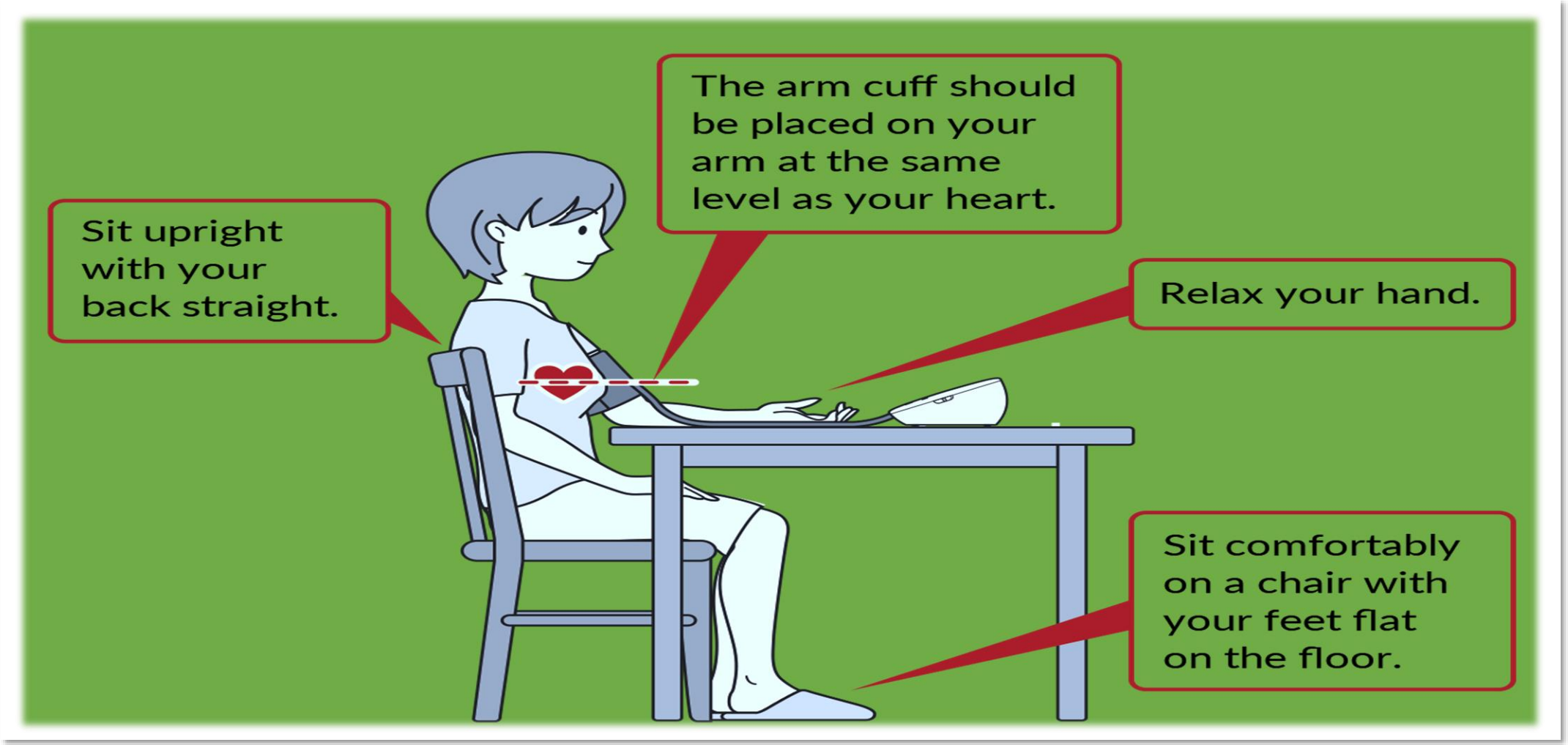
Mention steps to get an accurate measurement of blood pressure

Practical session: Measurement of blood pressure

To get an accurate measurement of blood pressure, the following must be observed:

1	There should be no talking or movement during the BP measurement
2	Ensure that the urinary bladder is emptied
3	The person must have rested for at least five minutes before the blood pressure is checked
4	The back should be rested on a seat
5	Three measurements should be taken at an interval of 3-5 minutes.
6	The cuff should be located at a level that is the same as the heart.
7	Relax your hand with the palm facing upwards.

Practical session: How to accurately measure blood pressure



Treatment (1/2)

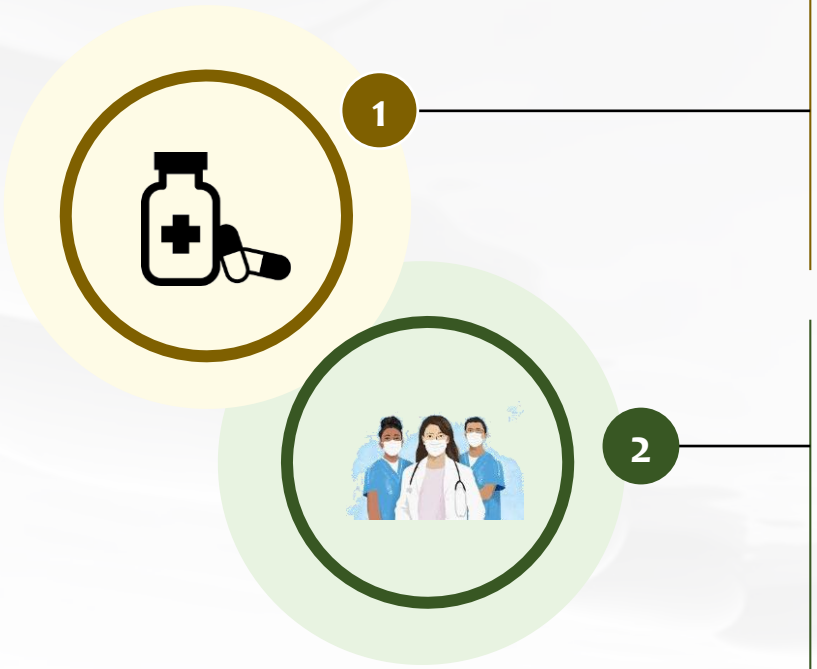


Non-pharmacological

Provide counselling on the following:

- **Salt reduction**
- **Encourage physical activity**
- **Stop tobacco use**
- **Encourage healthy diet**
  - **At least 5 portions of fruits and vegetables everyday**

Treatment (2/2)



- The medications used for the management of hypertension in the PHCs include:
  - Amlodipine
  - Losartan
  - Hydrochlorothiazide

- The following categories of health workers can prescribe antihypertensives in the PHCs:
  - Community Health Extension Workers (CHEWs)
  - Community Health Officer (CHO)
  - Registered Nurse (RN)
  - Registered Public Health Nurse
  - Medical Officers

Treatment-Pharmacological

NIGERIA

Hypertension Treatment Protocol for Primary Health Care level

Federal Ministry of Health

Measure blood pressure of **all adults** ≥ 18 years of age.

High blood pressure: SBP ≥ 140 mmHg or DBP ≥ 90 mmHg.

Step 1 If BP ≥140/90 mmHg,*
Start amlodipine 5 mg.

Step 2 After 1 month, measure BP again. If still high,
Treat with amlodipine 5 mg + losartan 50 mg.

Step 3 After 1 month, measure BP again. If still high,
Treat with amlodipine 10 mg + losartan 100 mg.

Step 4 After 1 month, measure BP again. If still high,
Treat with amlodipine 10 mg + losartan 100 mg + HCTZ 25 mg.

Step 5 After 1 month, measure BP again. If still high,
Refer for specialist hypertension management.

*If initial BP ≥ 160/100 mg, but <180/110 mmHg, start at STEP 2.

*If initial BP ≥ 180/110 mg, give step 3 drugs and refer to the emergency unit of the nearest general hospital within 1 hour.

Notes:

- **Single pill combination of amlodipine plus losartan is preferred to free combination.**
- HCTZ= Hydrochlorothiazide.
- Telmisartan 40mg and 80mg if available is preferable to losartan.
- May substitute HCTZ 25mg with amiloride 2.5mg/HCTZ 25mg if HCTZ is unavailable.

Special populations

Pregnant women and women who may become pregnant

DO NOT GIVE losartan to pregnant women nor to women of childbearing age who are not on effective contraception.

If pregnant, refer to obstetric specialist

Stop tobacco use and harmful use of alcohol

Increase regular physical activity to at least 30 minutes daily.

If overweight, lose weight.

Eat a heart-healthy diet low in salt, trans fats and added sugar:

- Eat 5 servings of fruits and vegetables per day.
- Eat nuts, legumes, whole grains and foods rich in potassium.
- Eat fish at least twice per week.
- Use healthy oils like sunflower, flax seed, soybean, peanut and olive.
- Limit red meat to once or twice per week.
- Limit consumption of ultra-processed, canned and 'fast' foods.
- Avoid donuts, cookies, sweets, fizzy drinks and juice with added sugar.

When to refer

1. Severe high blood pressure ≥ 180/110 mmHg 
2. Pregnant patients 
3. Evidence of organ damage – kidney failure, heart disease, stroke 

Prevention

Major steps:

1. Salt reduction
2. Avoid tobacco use
3. Regular exercise
4. Ensure regular BP checks

Exercises

Case 1

- A 55-year-old man has been found to have a BP reading of 172/104

  How should he be managed based on the Nigerian Hypertension protocol?

- He was started on Amlodipine 5mg plus Losartan 50mg, but during the monthly follow-up visit, his BP was found to be 152/94.

  How would you manage him further?



Case 1 response

Double the dose of Amlodipine and Losartan to Amlodipine 10mg and Losartan 50mg od



Case 2

- A 70 year old previously diagnosed patient of hypertension comes to the primary health care centre for consultation.
- He is on tab Lisinopril 5mg which is not on the drug protocol of the country.
- What should be your advice if patient's BP is 132/84 mmHg?
- And what should be your advice if the BP is 162/102mmHg ?



Case 2 (BP-132/84mmHg)- response

- Check for side effects and check serum creatinine and potassium
- If no side effects, advise the patient to continue with his treatment plan



Case 2 (BP-162/108mmHg)- response

Change medication according to Nigerian Treatment protocol to Amlodipine 5mg plus Losartan 50mmHg and advise the patient to come back after a month



Case 3C

- A previously diagnosed patient with hypertension comes to the primary health care centre to see the doctor
- She is 60 years old, a non-smoker and her blood pressure is 152/86
- She is on atenolol 50 mg od. She does not have any history of heart attack



Case 3- response

- Since the patient's BP is currently not under control, revise her medication according to the treatment protocol to Amlodipine 5mg plus Losartan 50mg
- As she has not had a heart attack no need for Atenolol



Case 4

- A 40 year old patient known to have DM comes to the doctor and is found to have a BP of 152/96
- She has an old record from four months ago that shows a BP of 144/92
- She is not on any treatment
- What is your line of management?



Case 4- response

- Commence amlodipine 5 mg once daily as recommended.
- If available, consider increased lab monitoring (especially FBS lipid profile, serum creatinine electrocardiogram) minimum 2x a year



Case 5

- A 65-year-old woman who is on 10 mg of amlodipine comes to see you for the first time in your PHC.
- Her BP is 136/87
- She complains of ankle oedema which you confirmed on examination
- How would you manage her?



Case 5- response

- Ask her how the oedema is affecting her. If it is not bothering her, reassure her.
- If it is bothering her commence reduce Amlodipine to 5mg od and add Tab Losartan 50 mg od



Key messages

1. Hypertension is the leading risk factor for Cardio-Vascular Diseases (CVDs) and poor health worldwide
2. The main aim of hypertension treatment is to reduce BP values in order to reduce cardiovascular and renal complications
3. The Nigerian hypertension protocol includes medication used in the contemporary management of hypertension
4. Contemporary anti-hypertensive medications have minimal side effect profile with the angiotensin receptor blockers e.g Losartan having the best tolerability profile
5. Contemporary anti-antihypertensive medications also require minimal laboratory monitoring




DON'T TAKE HYPERTENSION
FOR GRANTED

SESSION 9.2: DIABETES

Learning objectives



At the end of the session, participants are expected to:

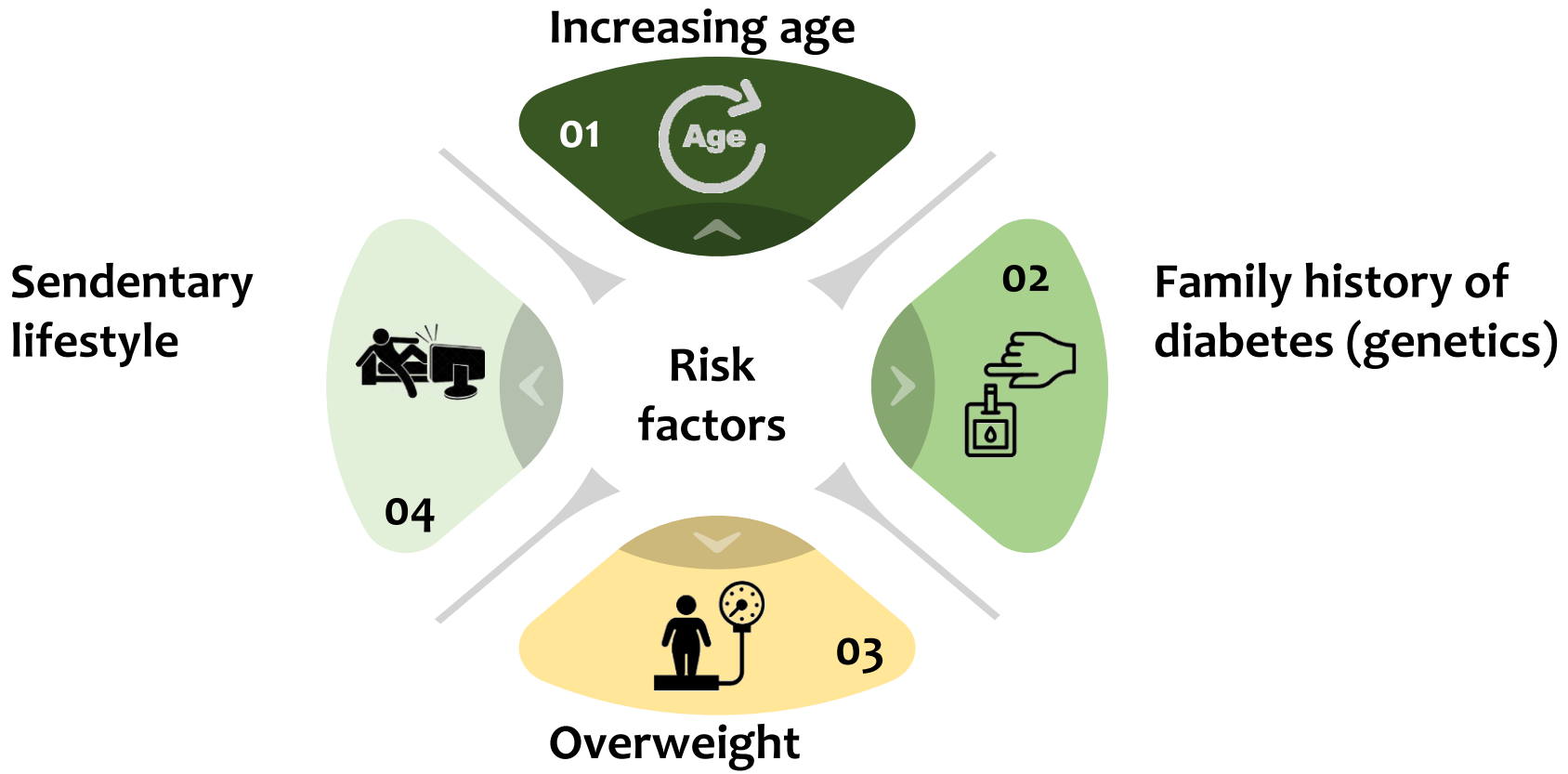
1. Define diabetes
2. List risk factors
3. Know if someone has diabetes symptoms and signs
4. Know who should be tested for high blood sugar
5. Participant should be able to diagnose patients
6. Know management of diabetes

Session overview

- Introduction to Diabetes and risk factors
- Symptoms and signs of diabetes
- Diagnosis of diabetes
- Who should be tested for high blood sugar
- Management of diabetes

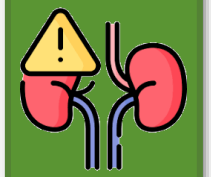
Session overview

Definition	Diabetes commonly known as sugar disease is a chronic disease characterized by elevated levels of blood glucose (or blood sugar), which over time leads to serious damage to the heart, blood vessels, eyes, kidneys, and nerves



How to know if someone has diabetes: symptoms and signs

Symptoms	
Polyuria (excessive passing of urine)	
Polydipsia (excessive thirst)	
Unexplained weight loss	
Polyphagia (excessive hunger)	
Vision changes	
Fatigue	

Signs	
Severe dehydration (lack of fluid in the body)	
Altered level of consciousness	
Complications (acute coronary disease, stroke, kidney disease, vision loss, diabetic foot)	

Diagnosis

01

Fasting plasma glucose (FPG) ≥ 7.0mmol/l) or 126mg/dl

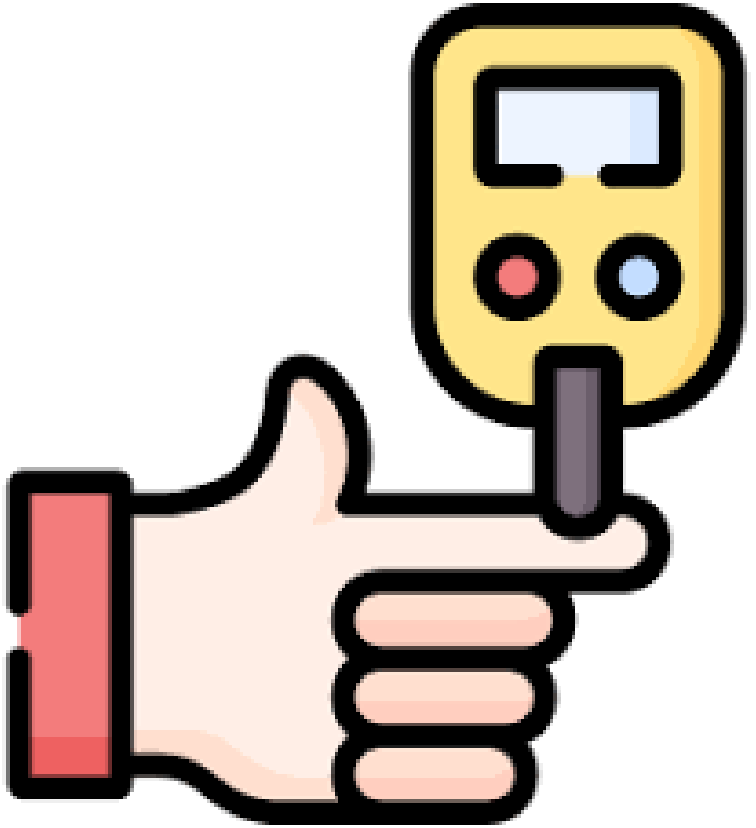
(Fasting: no food and only water for 8–14 hours before the test)

02

Random plasma glucose (RPG) ≥ 11.1mmol/l or 200mg/dl

Let's Brainstorm





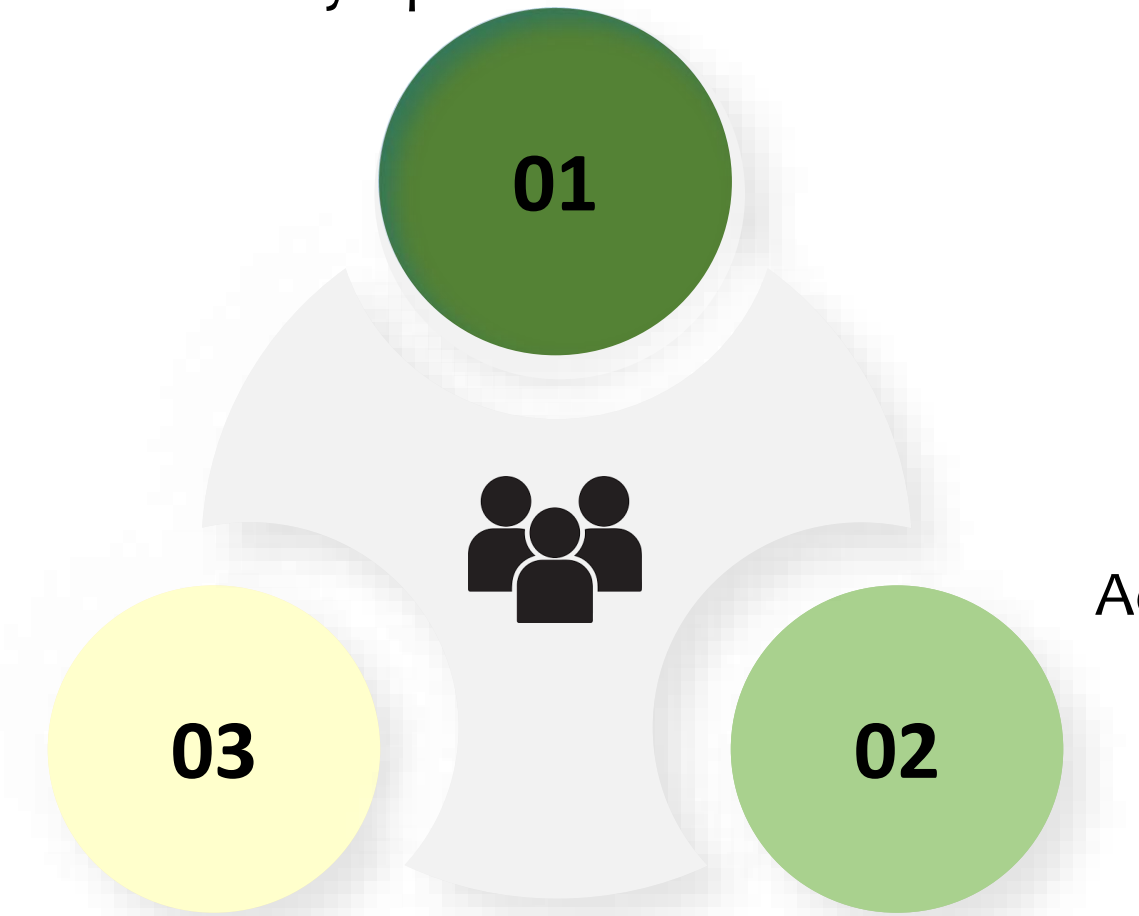
Who should be tested for high blood sugar?

Who should be tested for high blood sugar

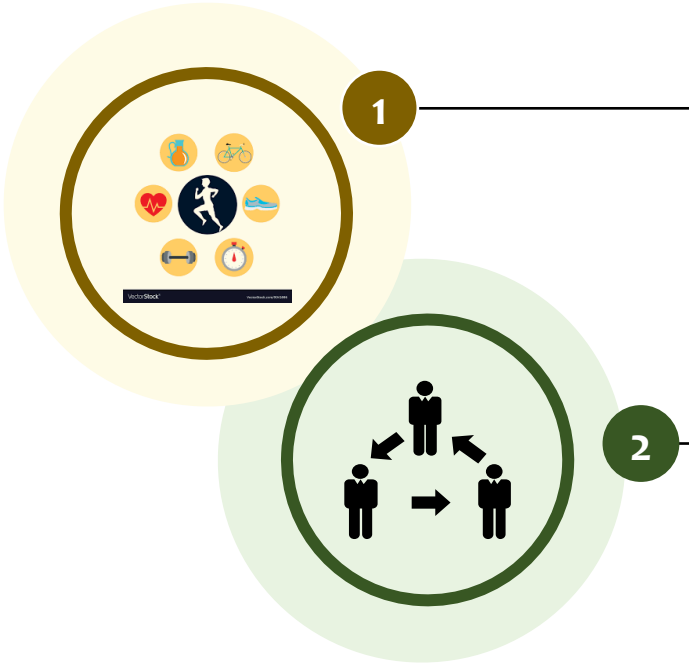
01 Adults who are symptomatic

02 Adults >40 years old

03 Those who are overweight (BMI > 25), or obese (BMI > 30)



Management



- **Lifestyle modification:** Patients should receive counseling and support on lifestyle change including diet, physical activity and smoking cessation at the time of diagnosis, then annually and whenever changes in treatment occur

- **Medication:** Note that within the PHC, the only category of health workers allowed to prescribe oral antidiabetic agents are:
  - Community Health Officer (CHO)
  - Registered Nurse (RN)
  - Registered Public Health Nurse
  - Medical Officers

Key messages

Key messages

- Diabetes commonly known as sugar disease is a chronic disease characterized by elevated levels of blood glucose (or blood sugar), which leads over time to serious damage to the heart, blood vessels, eyes, kidneys, and nerves
- Risk factors are;
  - Increasing age
  - Family history of diabetes (Genetic)
  - Sedentary life-style
  - Overweight
- Patients should receive counseling and support on lifestyle change including diet, physical activity



SESSION 9.3: ASTHMA & CHRONIC OBSTRUCTIVE PULMONARY DISEASE (COPD)

Learning objectives

At the end of this session, Participants will be able to;

1. Understand the definition of ASTHMA AND COPD
2. Understand the Risk factors that triggers Asthma
3. Explain the major symptoms

46

Session overview



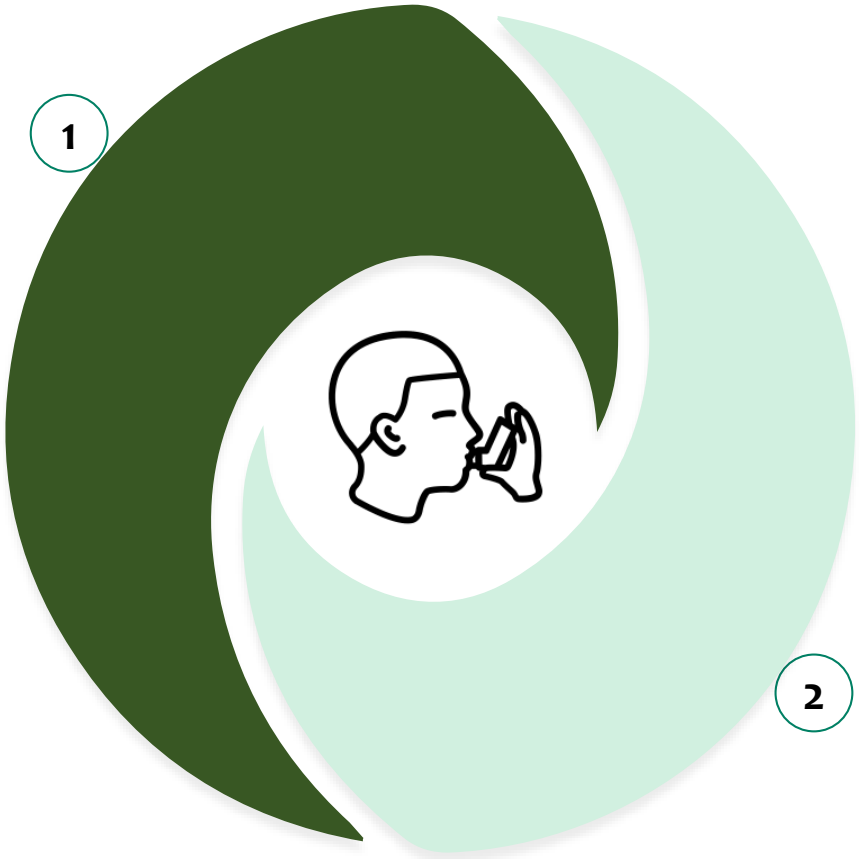
- Introduction to ASTHMA and Chronic obstructive pulmonary disease (COPD)
- Signs and symptoms of Asthma
- Signs and symptoms of COPD
- Diagnosis of Asthma and COPD
- Prevention and Management of Asthma and COPD
- When to refer

Introduction

Asthma

- Asthma is a condition in which your airways narrow and swell and may produce extra mucus
- This can make breathing difficult and trigger coughing, a whistling sound (wheezing) when you breathe out and shortness of breath
- For some people, asthma is a minor nuisance

1



2

COPD

Chronic obstructive pulmonary disease (COPD) is a preventable and treatable condition characterized by persistent respiratory symptoms and airflow limitation

These diseases are major public health diseases that causes significant suffering and death

Asthma: Signs and Symptoms

Signs & symptoms



01 Previous diagnosis of asthma Symptoms since childhood or early adulthood

02 History of eczema and/or allergies

03 Intermittent symptoms worse at night or early morning

04 Symptoms triggered by respiratory infection, exercise, weather changes or stress

05 Symptoms respond to salbutamol

COPD: Signs and Symptoms

Signs & symptoms



01 Previous diagnosis of COPD

02 History of heavy smoking, i.e. > 20 cigarettes per day for > 15 years

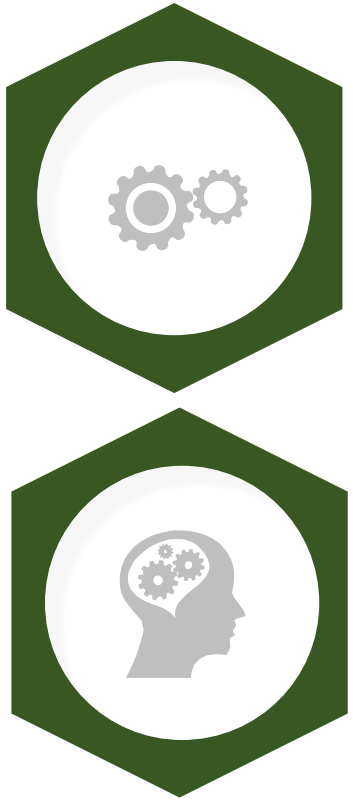
03 History of heavy and prolonged exposure to burning fossil fuels in an enclosed space, or high exposure to dust in an occupational setting

04 Symptoms started in middle age or later (after age 40) Symptoms worsened slowly over a long period of time

05 Long history of daily or frequent cough and sputum production starting before shortness of breath

06 Symptoms that are persistent with little day-to-day variation

Diagnosis of Asthma and COPD



- Asthma is primarily diagnosed through symptoms
- However, it is confirmed with a spirometry test at either a secondary or tertiary facility
- COPD is diagnosed primarily through symptoms and confirmed with a chest X-ray

Let's Brainstorm

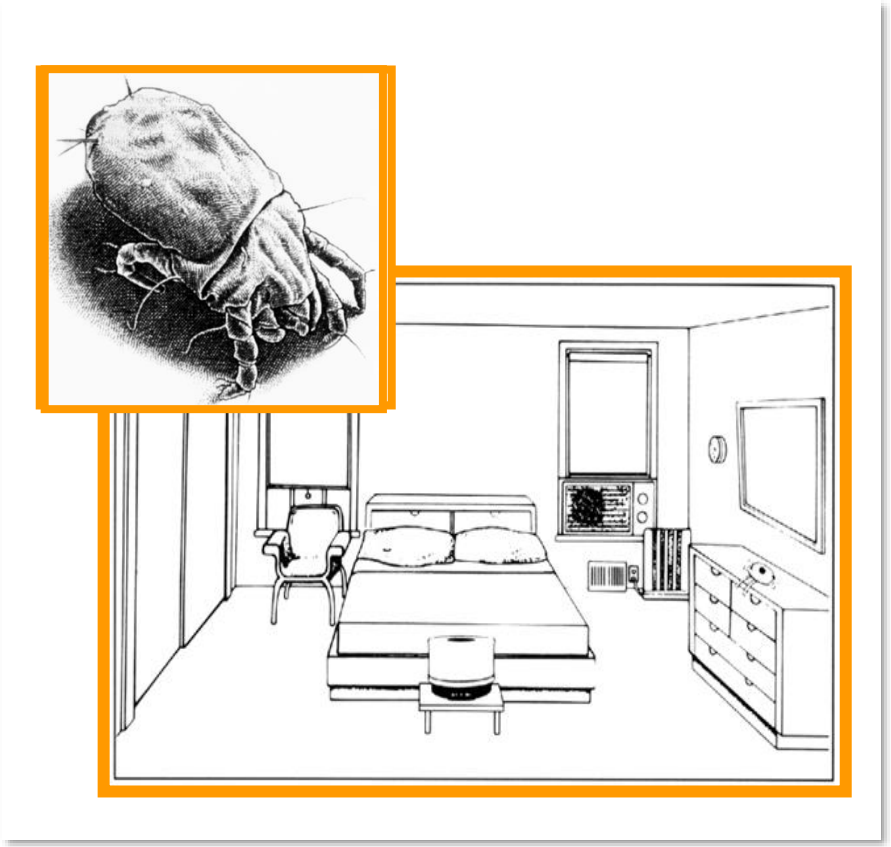




Explain the possible ways to prevent ASTHMA?

Reducing exposure to house dust mites

1. Use bedding encasements
2. Wash bed linens weekly
3. Avoid down fillings
4. Limit stuffed animals to those that can be washed
5. Reduce humidity level (between 30% and 50% relative humidity per EPR-3)



Source: "What You and Your Family Can Do About Asthma" by the Global Initiative For Asthma Created and funded by NIH/NHLBI, 1995.

Reducing exposure to environmental tobacco smoke



Evidence suggests an association between environmental tobacco smoke exposure and exacerbations of asthma among school-aged, older children, and adults

Evidence shows an association between environmental tobacco smoke exposure and asthma development among pre-school aged children.

Reducing exposure to cockroaches



Remove as many water and food sources as possible to avoid cockroaches

Reducing exposure to pets

01

People who are allergic to pets should *not* have them in the house

02

At a minimum, do not allow pets in the bedroom

Reducing exposure to mold





1. Eliminating mold and the moist conditions that permit mold growth may help prevent asthma exacerbations.

2. Reduce dust as far as possible by using damp cloths to sweeping, cleaning blades of fans regularly

Other Asthma triggers






- Air pollution
- Trees
- Grass
- Weed pollen

Discussion

Management of Asthma at the PHC level

Management: Counseling (1/2)

1	Avoid cigarette smoke and trigger factors for asthma, if known 
2	Avoid occupations that involve agents capable of causing occupational asthma 
3	Reduce dust as far as possible by using damp cloths to sweeping, cleaning blades of fans regularly and minimizing soft toys in the sleeping area 
4	It may help to eliminate cockroaches from the house (when the patient is away) and shake and expose mattresses, pillows, blankets, etc. to sunlight 

Management: Use of medication (2/2)

Step 1

Inhaled salbutamol prn (inhaler)

Step 2

Inhaled salbutamol prn plus low-dose inhaled beclometasone starting with 100ug twice daily, for adults or 100ug daily or twice daily for children

Step 3

- Same as step 2, but give higher doses of inhaled beclometasone 200ug or 400ug twice daily
- Refer to higher center for more care

When to refer

All severe cases of Asthma/COPD should be stabilized and referred

The following are symptoms/signs of severity:

1. High breathing rate (Respiratory rate more than 25 breaths/minute)
2. Inability to complete sentences in one breath
3. Altered consciousness
4. Oxygen saturation (SpO2) < 92%

SESSION 9.4: STROKE

Session overview



The following content will be discussed in this session:

- Introduction to Stroke
- Risk factors of Stroke
- Symptoms and signs of Stroke
- When to refer

Introduction

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts (or ruptures)

Risk factors include the following:

1. Uncontrolled hypertension
2. Diabetes
3. Tobacco use
4. Previous history of stroke
5. Heart diseases
6. Family history
7. Use of recreational drugs
8. Sickle cell

How to recognize stroke symptoms

A stroke occurs when a blood vessel that carries oxygen and nutrients to the brain is either blocked by a clot or bursts (or ruptures)

F	Facial deviation
A	Arm weakness
S	Slurred speech
T	Time to act fast by referring

All cases of suspected stroke should be immediately referred to higher centres

SESSION 9.5:CANCER

Learning objectives

At the end of this session, Participants will be able to;

1. Define cancer
2. Explain the signs and symptoms of cancer
3. Know what to do with a cancer patient

68

Session overview



The following content will be discussed in this session:

- Introduction to cancer
- Signs and symptoms of cancer
- Referral of cancer patient

Introduction

Cancer refers to an abnormal growth in any part of the body which is capable of spreading and damaging both close and distant body organs

Signs and symptoms

1. Lumps in any part of the body: such as breast or any part of the body
2. Unexplained weight loss
3. Unexplained bleeding such as vaginal bleeding in the case of cervical cancer
4. Long lasting bone pain such as low back pain seen in prostate cancer
5. Bleeding from rectum
6. Coughing out of blood (Heamoptysis)

What to do

All suspected cases of cancer should be immediately referred to higher centres for proper assessment and management

Don’t manage any of these cases in the PHCs



SESSION 9.6: SICKLE CELL DISEASE

Learning objectives



At the end of the session, participants are expected to:

1. Understand and define Sickle Cell
2. Explain the common symptoms of Sickle cell
3. Know what to do with sickle cell patients

Session overview



Introduction to Sickle Cell



Signs and symptoms of Sickle cell



Management of sickle cell patients

Introduction

Sickle Cell Disorder is an inherited disease of the red blood cells which usually presents in childhood

Signs and symptoms

1. Recurrent bone/joint pain
2. Recurrent low blood level (Anaemia)
3. Yellowness of the eyes
4. Painful swelling of the hand and feets
5. Frontal Bossing - an unusually prominent forehead

What to do:
Refer to higher centres for proper diagnosis and management

Key messages

1. Refer Sickle Cell Disorder patients to higher centers from the PHCs for proper diagnosis and management

2. Non-communicable diseases (NCDs) are a leading cause of global morbidity and mortality, primarily driven by modifiable lifestyle factors. Prevention and early intervention play a pivotal role in reducing the burden, emphasizing the importance of health promotion, awareness, and holistic healthcare approaches


Thank
you