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## Unit 5 – Disease Prevention

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### Definitions

**Disease:** an illness or condition that prevents the body from working properly, can cause pain, and sometimes lead to death.

**Infection:** a disease caused by germs.

**Infectious:** infection that is capable of spreading to other people.

**Immunization:** the process whereby a person is made resistant to an infectious disease.

**Screening:** a test to identify a disease before a person has any signs or symptoms.

**Vaccine:** something injected into a person that lead to immunization against a specific disease.

**Modifiable:** can be changed vs **Non-Modifiable**

**Communicable:** can be passed from person to person, Ex: Covid-19, Gastroenteritis, Malaria.

**Non-communicable:** cannot be passed from person to person, Ex: Parkinson's, Cancer, Diabetes.

### The causes of disease and illness

❖ Diseases can be prevented (stopped from happening) or reduced by multiple ways:

- Living a healthy lifestyle and eating healthy food
- Having a good personal hygiene
- Having regular medical checkups
- Getting vaccines
- Others

❖ Diseases can be classified according to their communicability: **\*\*Remember\*\***

- Communicable: caused by bacteria, viruses, parasites.
- Non-Communicable: caused by environmental factors, lifestyle, family history.

❖ Communicable disease can spread through multiple ways, which are:

- The air, ex: Influenza
- Contact with an infected person, ex: Headlice
- Contaminated food or drinks, ex: Salmonella, Hepatitis A
- Insect bites, ex: Malaria

1) Which of the following is a Non-modifiable cause of disease?

- Genetics
- Environmental factors
- Person's lifestyle like smoking
- High body weight

2) Which of the following is Non-communicable disease?

- Malaria
- HIV
- Diabetes mellitus
- Hepatitis

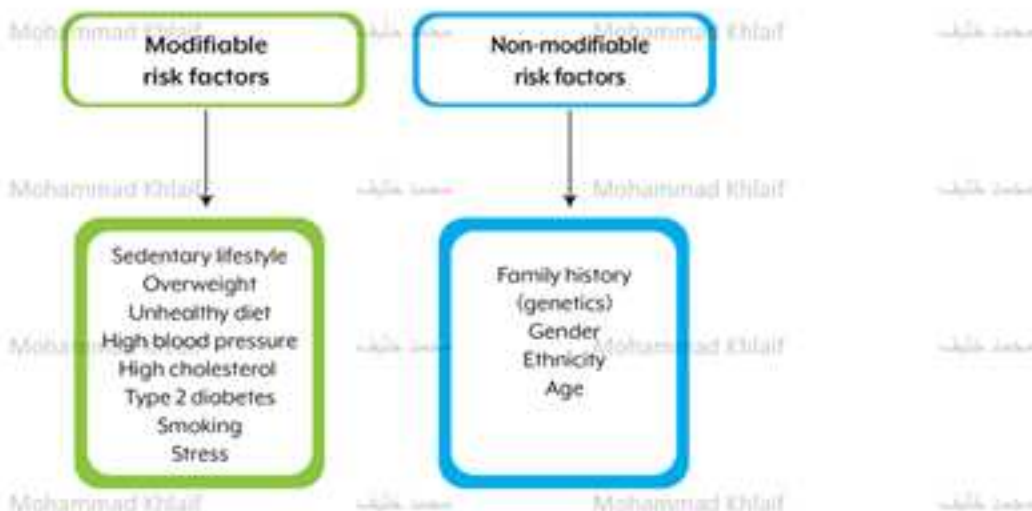
3) Which of the following is False about prevention of communicable diseases?

- Practicing good hygiene
- Cleaning areas shared with other people
- Staying a safe distance away from sick people
- Most of the risk factors are non-modifiable

## Risk Factors

Something that increases the person's chances of getting a disease. The more risk factors you have, the greater the chance of developing a disease.

❖ Risk factors are classified into:



4) Which of the following is a modifiable risk factor for heart diseases?

- Old age
- Being a male
- Smoking
- Family history of cardiac disease

## Personal health behavior

Personal health behavior are lifestyle habits that can affect a person's health. They can be either positive or negative health behaviors.

❖ Having a healthy diet helps the body and prevents diseases in several ways, which include:

- Getting all of the nutrients the body need (ex: proteins, healthy fats, carbohydrates, vitamins, minerals).
- Maintaining a healthy weight, thus reducing the risk of many diseases (ex: cardiovascular, atherosclerosis, diabetes).
- Controlling cholesterol, because cholesterol can block blood vessels and cause heart diseases if it wasn't controlled.
- Benefits mental health and lowers stress, thus reducing the risk of depression and anxiety.

5) Which of the following minerals is important to protect against osteoporosis?

- Zinc
- Iron
- Sodium
- Calcium

6) Layla doesn't like drinking milk, what other product would you suggest for her to prevent getting osteoporosis?

- Mc a) Hot chocolate  
b) Cheese  
c) Burgers  
d) French fries

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7) Which of the following is True about cholesterol

- a) Small amounts of cholesterol is good for the body  
b) Cholesterol helps in opening blocked blood vessels  
c) Eating a lot of processed food prevents having high cholesterol levels  
d) Unhealthy fast food rich with cholesterol has no effect on the heart

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❖ Getting enough sleep is an important positive health behavior that maintains well-being and helps the body repair itself.

❖ Inadequate sleeping patterns can lead to feeling tired, sleepy and unwell the day after.

❖ Long-term effects of bad sleeping patterns include: increased risk of developing type 2 diabetes, obesity, high blood pressure, heart diseases and poor mental health.

❖ The ideal amount of sleeping at night is from 7 to 9 hours.



8) Ahmad brushes his teeth, takes a shower and heads to bed at 10 pm every day. He checks all his social media accounts for 2 hours without drinking any coffee and then sleeps for 8 hours. What negative health behaviors does Ahmad do ?

- a) Staying awake without drinking coffee  
b) Taking a shower before sleeping  
c) Exposing his eyes to a lot of blue light before sleeping  
d) Sleeping only for 8 hours

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❖ Good personal hygiene is important to stop bacteria and viruses from spreading, this includes: keeping your teeth, hand, body, and clothes clean.

❖ Washing hands with soap and water or with alcohol based hand sanitizer, before or after eating, after using the bathroom, after touching animals, and most importantly after touching sick people are all important positive health behaviors.

9) Which of the following is a healthy (positive health) behavior?

- a) Eating fast food every day before sleeping  
b) Sleeping for 5 hours every night  
c) Sharing towels with a sick patient  
d) Showering every morning after waking up.

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## Physical activity

The World Health Organization defined it as any skeletal muscle induced movements that requires energy expenditure. Anything that gets you moving and increases your heart rate is also classified as physical activity.

❖ Physical activity reduce the risk of developing disease by:

- Helping to control body weight; physical activity burns calories.
- Reducing the levels of cholesterol and fat in blood >> reduce risk of heart and artery disease.
- Increase bone density >> reduce risk of osteoporosis and fracture.
- Improves muscular strength >> support your joints and prevent injuries.
- Improves lung function.
- Improves mental function
- Relieves stress and improve emotional wellbeing.
- Improves immune function.
- Regulates blood pressure.



❖ Exercising improves energy levels, as well as raises brain function by improving motor skills, problem-solving and increases attention span,

❖ Social health is improved specially while doing team sports, and that can improve immunity function. Taking part in group sports can lead to :

- Increase in confidence
- Learning leadership skills
- Making new friends
- Increase in motivation to exercise

10) Which of the following is True about physical activity?

- It only benefits physical health
- It affects emotions and social health
- Increase the risk of bone fracture
- Make you sleepy and more tired throughout the day

❖ The intensity of physical activity can be classified into moderate and high.

Moderate-intensity activity

- 1) Uses 70-80% of maximum heart rate (MHR).
- 2) Makes you sweat lightly.
- 3) You can still talk comfortably.
- 4) Includes: walking (5 km/h), cycling (< 16 km/h), swimming slowly, golf, gardening, housework.



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- High-intensity activity:

- 1) Gives the Heart rate and Respiratory rate a big push
- 2) Uses 80-85% of maximum heart rate (MHR)
- 3) Makes you sweat a lot.
- 4) You can only speak a few words but not hold a conversation.
- 5) Includes: running, cycling (> 16 km/h), swimming fast laps, football, hiking, high-intensity aerobics.



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11) Which of the following is a moderate-intensity activity?

- a) Mountain hiking
- b) Cycling > 16 km/h
- c) An exercise that uses 76% of Maximum heart rate
- d) An exercise that can makes you speak only few words

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12) A person who doesn't practice regular physical activity is at increased risk of cardiovascular disease. This kind of lifestyle is called:

- a) Lazy lifestyle
- b) Healthy lifestyle
- c) Moderate lifestyle
- d) Sedentary lifestyle

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❖ WHO guidelines for exercise were put based on age:

- Up to 17 years old:

- 1) exercise 60 mins each day
- 2) 3 times/week of muscle and bone strengthening exercises

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- 18-64 years old:

- 1) exercise 150 mins of moderate intensity or 75 mins of high intensity exercises each week.
- 2) 2 times/week of muscle strengthening exercises like weight bearing.

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### Medical care for disease prevention

It involves Medical procedures and care done in regular pattern to prevent disease from happening or progressing. Immunization and Screening are effective ways of disease prevention.

❖ Medical care can be in the form of:

- Lab tests
- Blood tests
- Vaccines
- Medications

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13) What type of prevention are vaccines considered?

- a) Primordial
- b) Primary
- c) Secondary
- d) Tertiary

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❖ The UAE has an immunization program to protect the health of the population. Vaccines are made up of small amounts of the virus or bacteria, and can lead to immunity BUT not disease when injected into a person.

❖ After injecting the vaccine, the body's immunity will create antibodies specific to fight that disease. When the real disease enters the body again, the immunity will recognize the disease and will already have antibodies for it.

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❖ Vaccines are so important for humanity. They save lives each year, help people of all ages live longer and have a healthier life.

14) Which of the following is True about vaccines?

- a) They are made to develop a disease when injected
- b) They are not used in cases of outbreak control
- c) They don't induce a disease, but increase the risk of getting a disease
- d) They work with the body's natural defenses to build protection

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15) The UAE immunization program starts from birth till the 11<sup>th</sup> grade, but some vaccines are given for adults as well ex: flu vaccine. People who travel to countries which have a high risk of certain disease are given some additional vaccines.

16) The UAE vaccinates children against:

- Tuberculosis (BCG) after birth
- Hepatitis B (Hep B) after birth
- Polio (OPV/IPV)
- Measles, Mumps, Rubella (MMR)
- Varicella (chickenpox)
- Influenza (HIB)

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17) Which of the following vaccines is given immediately after birth?

- a) Vaccine against tuberculosis
- b) MMR
- c) Pertussis vaccine
- d) Chickenpox vaccine

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18) Poliovirus can cause muscle weakness and paralysis, identify the vaccine given to protect against poliovirus.

- a) Polv
- b) PCV
- c) BCG
- d) OPV

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❖ Screening is extremely important and helpful in disease prevention, it helps in:

- Diagnosing disease early >> treating disease in its early stages.

❖ Keep track of your health >> have a healthier longer life.

- Give you peace of mind.

❖ Screening and health checks vary depending on age, gender, general health, lifestyle choices and family history

In 20s and 30s	In 40s	In 50s and 60s
Blood pressure	Same as 20s and 30s	Same as 40s
Cholesterol and glucose levels (Diabetes risk assessment)	Cardiovascular disease risk assessment	Osteoporosis risk assessment
Dental check and cleaning	Eye checks for glaucoma	Bowel cancer screening
Skin cancer checks	Breast screening (for females only)	Sight and hearing tests
BMI, waist, hip measurements	Prostate screening (for males only)	
Cervical screening (for females only)		

For	To screen for	Type of test	Screening frequency
People over 18 years old	Obesity	Body mass index (BMI) and waist circumference	Once a year
People over 18 years old	Hypertension (high blood pressure)	Blood pressure measurement	Every 2 years (more if high risk)
People over 30 years old	Diabetes High cholesterol	Fasting blood glucose/lipids test	Every 3 years (more if high risk)
People over 50 years old	Bowel cancer	Test to find blood in stools or colonoscopy	Once a year
Women 25-65 years old	Cervical cancer	Pap smear test	Every 3 years
Women 40-69 years old	Breast cancer	Mammogram	Every 2 years
Men over 45 years old	Prostate cancer	Blood test or physical examination	Every 2-3 years

19) Pap smear is the test done to screen for:

- a) Bowel Cancer
- b) Prostate Cancer
- c) Cervical Cancer
- d) Breast Cancer

20) Hypertension screening is done for:

- a) People above the age of 50
- b) People above the age of 35
- c) People above the age of 12
- d) People above the age of 18

21) Which of the following are done only for males?

- a) Obesity screening
- b) Prostate Cancer screening
- c) Cervical screening
- d) Diabetes screening

22) Which of the following disease Don't have a screening program?

- a) Pneumonia
- b) Hypertension
- c) Breast cancer
- d) Skin cancer

❖ Screening test results are interpreted as the following:

- Negative: means that there is low risk of developing the disease, but doesn't mean that you will never develop the condition in the future.
- Positive: means that they might be having the condition they were screened for, further diagnostic tests are needed to confirm the results.

Screening tests
To check for early signs of a disease
For large numbers of people
One simple test, such as a blood test
Low cost, to be able to afford testing for large numbers of people

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Diagnostic tests
To confirm the presence (or absence) of a disease
For one person who has signs or symptoms of a disease, or has had a positive screening result
More in-depth testing which may include lots of different tests
Higher costs, because of the need for more accurate testing