

Health Science

End of term revision

G12 Advance

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2023-2024

Term 2

Modifiable risk factors include the following:



Obesity



Smoking



Diet

- Sedentary lifestyle (lack of exercise)
- Being overweight or obese
- Type 2 diabetes
- Smoking
- High blood pressure (hypertension)
- High blood cholesterol
- High stress levels



Diabetes



Hypertension



Non-modifiable risk factors include:

- **Gender:** You are at higher risk of developing certain diseases depending on whether you are male or female.
- **Age:** As you get older, your risk for developing certain diseases can increase.
- **Family history:** If a family member has a certain disease it could mean you are more likely to develop the same disease. This is also known as genetics.
- **Ethnicity:** Some ethnic groups are more likely to develop certain diseases compared to others.

Look at the list of risk factors. Decide if they are modifiable (M) or non-modifiable (NM). Put a tick in the correct column.

Risk factor	M	NM
Gender (male or female)		★
Sedentary lifestyle (lack of exercise)	★	
Type 2 diabetes	★	
Age		★
Family history (genetics)		★
High blood pressure (hypertension)	★	
Smoking	★	
Being overweight or obese	★	
Ethnicity		★

3. From the list below, write yes if they are positive health behaviours or no if not.

	Yes or no?
Being physically active	yes
Having good personal hygiene	yes
Being overweight	no
Getting regular medical check-ups	yes
Smoking	no
Having a healthy diet	yes
Not exercising	no
Getting enough sleep	yes

Answer the questions below about how a healthy diet can reduce the risk of certain diseases.

Identify two diseases that you have a higher risk of developing if you are overweight.

Hypertension

Diabetes / Obesity

Which mineral helps in maintaining healthy bones?

calcium

Name two foods that are a good source of this mineral.

Milk and dairy products

What can happen if you have too much cholesterol in the body?

Can cause a plaque in the arteries which lead to atherosclerosis

What nutrients can have a negative effect on heart health? **Fat**

Answer the questions about screening results.

1. If someone gets a 'negative' result from a screening test does it mean that they are at high or low risk for the condition they were screened for?

Low risk

2. If a person has a negative result from a screening test, does it mean they will never develop the condition they were tested for?

no they can develop a disease

3. If a person gets a 'positive' result from a screening, does it mean that they might have, or that they do not have, the condition they were screened for?

they might have the condition they were screened for

4. What further tests does a person need if they have a positive screening result?

Diagnostic test

6. Answer the questions about screening or diagnostic tests.

Which type of test checks for early signs of disease?

Screening test

Which type of test is done when signs of a disease have been identified?

Diagnostic test

Which type of test is low cost?

Screening test


Read the description and then name the type of test.

This is done when a person has signs or symptoms of a disease or has had a positive screening test.

Diagnostic test

This is done when people who do not have any signs or symptoms of a disease.

Screening test

10 YEARS ١٠ سنوات	MANTOUX TEST, IF NEGATIVE GIVE BCG + Td & OPV (3RD BOOSTER) اختبار التدرن اذا كانت النتيجة سلبية يعطى طعم التدرن + الثنائي وشلل الاطفال (الجرعة المنشطة الثالثة)
12 YEARS ١٢ سنة	MMR النكاف والحصبة والحصبة الالمانية
15 YEARS ١٥ سنة	Td الكزاز والسعال الديكي
OVER 18 YEARS فوق ١٨ سنة	TETANUS الكزاز
<p>BCG - Vaccine for protection against Tuberculosis. HBV - Hepatitis B Vaccine. DPT - Combined Diphtheria - Whooping Cough - Tetanus Vaccine. OPV - Oral Polio Vaccine, for protection against Poliomyelitis Td - Tetanus and Diphtheria vaccine. MMR - Measles, Mumps and Rubella Vaccine.</p> <p>طعم التدرن - طعم يحمي من مرض السل. التهاب الكبد البائي - يحمي من مرض التهاب الكبد البائي. الشلل - طعم يحمي من امراض السعال الديكي والحنان والكزاز. شلل الاطفال - يحمي من مرض شلل الاطفال.</p>  <p>I can receive more than one vaccine at a time, just as I am being exposed to different microbes in surrounding environment at a time</p> <p>بما انني قابل للتعرض الدائم الى العديد من الميكروبات المتواجده في البيئة، فانه بإمكانني اخذ اكثر من طعم واحد في كل مرة.</p>	

RECOMMENDED SCHEDULE OF IMMUNIZATION	جدول التطعيمات
AGE	العمر
TYPE OF IMMUNIZATION & TEST	نوع التطعيم
BIRTH	BCG + HBV (1ST DOSE) التدرن + التهاب الكبد البائي (الجرعة الاولى)
6 WEEKS	DPT & OPV (1ST DOSE) + HBV (2ND DOSE) الثلاثي وشلل الاطفال (الجرعة الاولى) + التهاب الكبد البائي (الجرعة الثانية)
12 WEEKS	DPT & OPV (2ND DOSE) الثلاثي وشلل الاطفال (الجرعة الثانية)
18 WEEKS	MANTOUX TEST, IF NEGATIVE GIVE BCG + DPT & OPV (3RD DOSE) اختبار التدرن اذا كانت النتيجة سلبية يعاد طعم التدرن + الثلاثي وشلل الاطفال (الجرعة الثالثة)
6 MONTHS	HBV (3RD DOSE) التهاب الكبد البائي (الجرعة الثالثة)
9 MONTHS	MEASLES الحصبة
15 MONTHS	MMR النكاف والحصبة والحصبة الالمانية
18 MONTHS	DPT & OPV (1ST BOOSTER) الثلاثي وشلل الاطفال (الجرعة المنشطة الاولى)
4-6 YEARS (AT SCHOOL ENTRANCE)	MANTOUX TEST, IF NEGATIVE GIVE BCG + DPT & OPV (2ND BOOSTER) MMR, HBV (IF NOT GIVEN EARLIER) اختبار التدرن اذا كانت النتيجة سلبية يعاد طعم التدرن + الثلاثي وشلل الاطفال (الجرعة المنشطة الثانية) + النكاف والحصبة والحصبة الالمانية والتهاب الكبد البائي (اذا لم يعطى من قبل)
	٤ - ٦ سنوات (عند دخول المدرسة)

The UAE vaccinates children against diseases such as:

- Tuberculosis (**BCG**)
- Measles, mumps, rubella (**MMR**)
- Hepatitis B (**Hep B**)
- Varicella (**chickenpox**)
- Polio (**OPV/IPV**)
- Influenza (**Hib**)

Work in groups. Using the 'protect your health with vaccinations' chart in the textbook, write the age that children should have each of the following vaccinations. Remember that some vaccinations might have more than one answer.

Vaccination	Age
Polio (OPV/IPV)	
Hepatitis B (Hep B)	
Varicella (chickenpox)	
Measles, mumps, rubella (MMR)	
Tuberculosis (BCG)	
Influenza (Hib)	

List four diseases that are vaccinated against as part of the UAE National Immunization Programme.

Write your own definition of malnutrition and undernutrition.

Malnutrition	describe someone who has poor nutritional status have a deficiency in nutrients such as vitamins and minerals
Undernutrition	describe the result of a person who does not eat enough food or get enough energy from the food they consume.

Read the descriptions below and decide which type of undernutrition they are describing.

Someone who is not getting enough of certain vitamins or minerals	Malnutrition
Someone who is a low weight for their height	wasting
A child who is a low height for their age	stunting
A child who is a low weight for their age	underweight

Identify the ABCDE methods for assessing nutritional status.

- A **Anthropometric**
- B **Biochemical method**
- C **Clinical method**
- D **Dietary method**
- E **Environmental factor**



Identify at least three reasons why nutritional assessment is important.

- Identify malnutrition or people at risk of malnourishment,
- Identify diseases, develop health care program, measure the healthcare programs

Using the WHO growth charts provided in your textbook, identify the correct percentile for each of the following people.

Age	Height	Gender	Percentile
11 years 9 months	150cm	Boy	85
6 years 6 months	109cm	Girl	3
15 years 3 months	175cm	Girl	97
17 years 9 months	168cm	Boy	3
10 years	150cm	Boy	97

$$\text{BMI} = \text{weight (kg)} \div \text{height}^2 (\text{m}^2)$$



Activity 13

Calculate BMI

Calculate each person's BMI and decide their BMI classification.

Hind

Height: 1.62m Weight: 68kg

BMI

25.9 = 26

BMI classification **overweight**

Shouq

Height 1.58m Weight 60kg

BMI

24

BMI classification **normal**

Mohammed

Height 1.79m Weight 55kg

BMI

17.1

BMI classification **underweight**

Rashid

Height 1.77m Weight 85kg

BMI

27

BMI classification **Overweight - obese**



Activity 18

Measuring body fat

Circle the methods of measuring body fat.

Bioelectrical impedance	Weighing scales	Tape measure
BMI	DEXA scanner	Skinfold thickness

Body fat

TBW

x100

Mansoor

Body fat: 12kg

TBW: 84kg

Age: 25 years

14%

Colour group **green**

Mouza

Body fat: 18kg

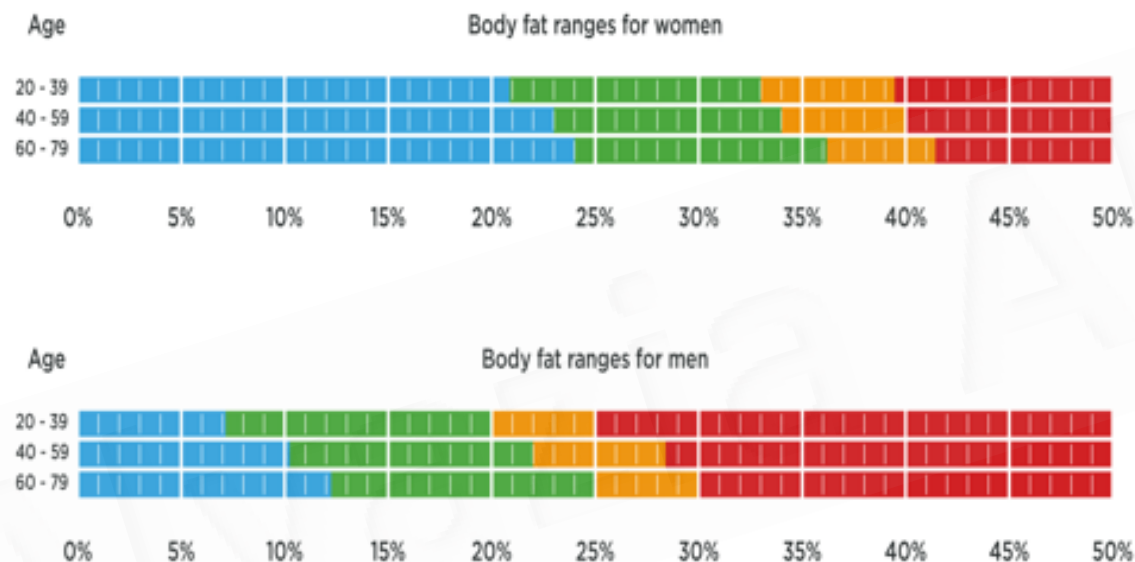
TBW: 75kg

Age: 58 years

24%

Colour group **green**

Healthy body fat ranges for adults



Once you calculate the results of the body fat percentage, you need to interpret the results.

There are four possible ranges that a person can fit into:

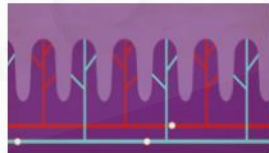
- **Blue** too little body fat for their age.
- **Green** healthy amount of body fat for their age.
- **Amber** above the healthy body fat for their age and they should try to reduce it.
- **Red** too much body fat for their age and they should try to reduce it urgently.

4. List the three types of dietary assessment.

- twenty-four-hour diet recall.
- three-day food diary.
- food frequency questionnaire.

Explain what is meant by biochemical methods of nutritional assessment.

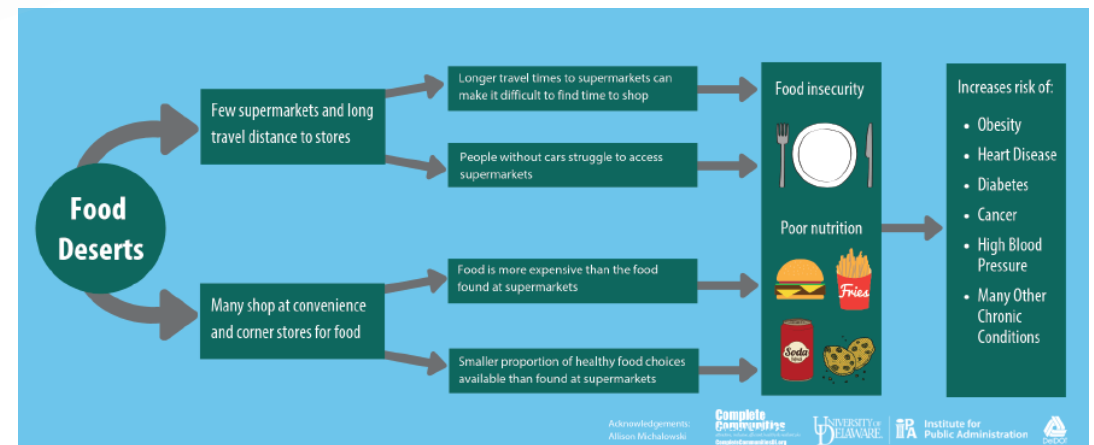
- known as laboratory measurements of nutritional status.
- involves testing a sample of blood or urine in a lab facility.
- Food you eat releases chemicals into the blood stream, which travels around your body and exits through your urine.
- This is a great way to indicate which nutrients are present in the body.



Test	Result	Reference Range
WBC	11.00	4.00 - 10.00
RBC	4.10	4.00 - 5.00
Hb	11.00	12.00 - 16.00
Hct	33.00	37.00 - 47.00
MCV	80.00	80.00 - 100.00
MCH	26.80	27.00 - 32.00
MCHC	33.50	32.00 - 36.00
RDW	11.50	11.50 - 14.00
Platelets	200.00	150.00 - 400.00
Prothrombin	11.00	11.00 - 13.00
INR	1.00	0.80 - 1.20
PT	11.00	11.00 - 13.00
PTT	28.00	25.00 - 35.00
APTT	35.00	25.00 - 35.00
Fibrinogen	2.50	2.00 - 4.00
D-Dimer	0.50	0.00 - 0.50
Urea Nitrogen	10.00	8.00 - 12.00
Creatinine	1.00	0.60 - 1.20
BUN/Cr	10.00	10.00 - 20.00
Glucose	100.00	70.00 - 100.00
Hemoglobin A1c	5.60	4.00 - 5.60
Lipid Panel		
Total Cholesterol	200.00	125.00 - 200.00
LDL Cholesterol	130.00	70.00 - 130.00
HDL Cholesterol	50.00	40.00 - 60.00
Triglycerides	150.00	0.00 - 150.00
VLDL	30.00	0.00 - 60.00
Non-HDL	150.00	70.00 - 130.00

Explain in your own words what a food desert is and why it could have an impact on nutritional status.

People's choice about what they eat is therefore limited by the options available to them and what they can afford. Food deserts may not have a grocery store to buy healthy options but could have a large number of fast-food restaurants and convenience stores selling unhealthy processed foods



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Complete
Consequences

UNIVERSITY OF
DELAWARE

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UD

Biochemical methods can be used to check for vitamin and mineral levels in the blood. Name some vitamins and minerals that can be checked using biochemical methods.

Vitamin D , Vitamin B12
Iron, calcium, zinc, sodium , potassium






As a vegan diet does not contain meat vegans need to make sure they consume enough protein and iron from other sources. List some vegan sources of iron and protein.

Vegans can find non-heme iron in dried beans and legumes, dark green leafy vegetables, dried fruits, nuts and seeds, and wholegrain cereals and breads. Hemoglobin is a protein in red blood cells that carries oxygen from your lungs to all parts of the body. 22 Nov 2022

What is the estimated percentage of deaths due to non-communicable disease in the UAE? %

Worldwide 7 of the 10 leading causes of deaths in 2019 were due to non-communicable diseases. In total non-communicable diseases were the cause of 74% of deaths globally in 2019.

Choose three ways that having positive health behaviours can improve someone's life.

	Yes or No?
They can increase the risk of getting a disease.	
They can help to increase life expectancy.	
They can increase wellbeing.	
They don't make a difference to people's health.	
They can reduce the risk factors for disease.	

list some positive and negative health behaviours.

Positive



Explain in your own words why behaviour change is important. How could it reduce the number of preventable deaths?

If people change their habits of physical activity and do more exercise they will be less likely to have obesity which can prevent diabetes and heart diseases

Which two sentences best describe the natural environment? Circle your answers.

The natural environment is made up of buildings, cars, and roads.

The natural environment includes the air, land and water.

The natural environment includes the weather.

The natural environment is man-made.

An escalator is something that was made to make people's lives easier. But it can also stop people from making a healthy choice since they use the escalator instead of walking up the stairs.

How does it make people's lives easier?

For people who is having chronic diseases such as heart diseases it makes them less tired and help them in their daily life for example going to work in a building.

Amna wants to be a doctor in the future. She sets out a plan to study more so that she will get better grades in school.

What personal factor is this?

Goal

Salim thinks that if he starts to exercise now, and keeps it up for three months, then he will be more fit and strong.

What personal factor is this?

Outcome expectation

What is the social environment?

The social environment

The social environment includes all the social things that surround a person. This includes their relationships with other people, the society they live in and their culture.



Keyword

culture

the beliefs and customs of a group of people

The social environment can affect people's behaviour because many things that people do are influenced by the people that they know such as family and friends.

We learn many things from the people around us. This could be how we do something, or how we act. For example:

- ⦿ learning communication skills such as talking and listening
- ⦿ learning practical skills such as cooking
- ⦿ learning how to behave in different situations
- ⦿ learning what is right and what is wrong

This means that the way that we behave could be because we watched our parents behave that way, or we have been taught a particular behaviour.

Personal factors

Personal factors are individual things that influence a person's behaviour.

Some personal factors that can explain why people behave the way that they do include:

Self-efficacy. This is a person's belief in themselves and their ability to do something.

Example: If you believe that you can run for 30 minutes, then you are more likely to be able to do it.



Outcome expectations. This is what people expect to happen if they do something.

Example: If you change to a healthier diet and exercise more you would expect to lose weight.

Goals. These are things that a person wants to do in their life.

Example: If you have a goal that you want to achieve, then you might change your behaviour so that you can reach the goal.

You will learn more about goals and goal setting later in this unit.



Write a short paragraph about what physical changes happen to a foetus during each trimester.

The following changes happen during the first trimester:

- Early in the pregnancy, the nervous system (brain and spinal cord) begins to develop.
- The umbilical cord forms.
- The heart, eyes, ears, mouth, nose, hands and feet take shape.
- By the end of the first trimester, the organs have formed and are developing.

During the second trimester, the following changes happen to the foetus:

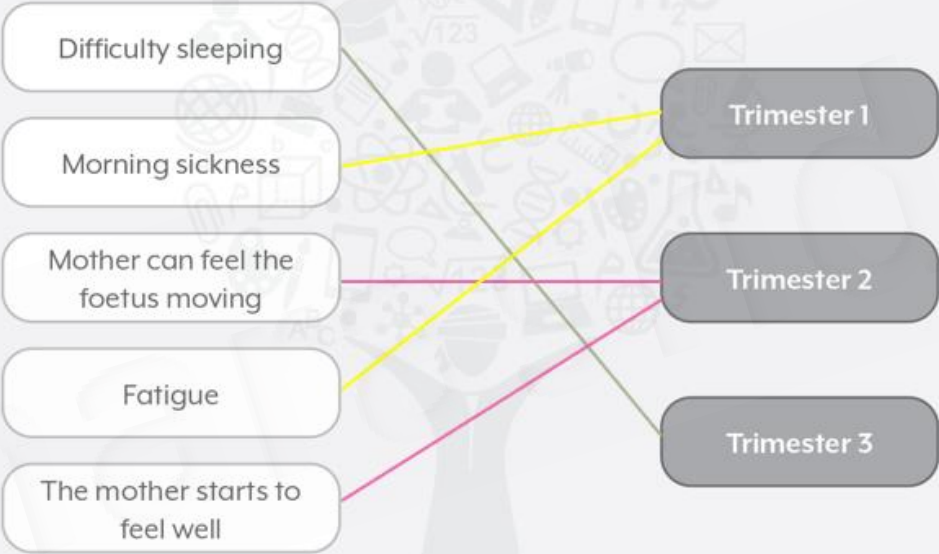
- The foetus begins to make urine.
- They develop meconium. This is the first bowel movement.
- The gender will become apparent.
- The musculoskeletal system is developing, and the bones begin to harden.
- The skin is translucent (almost see-through).
- The foetus can suck their thumb, and their fingerprints form.
- By the end of this trimester, they are gaining some body fat.

By this stage, the foetus' bones are fully formed, and the eyes can open and close. At 37 weeks, they are classed as full-term. At this stage, the organs are functioning.

What are the three stages of pregnancy?



A woman experiences physical changes during each trimester. Match the changes described on the left to the correct trimester.



Activity 10

Foods to limit or avoid

Look at the following foods. Some of them are recommended for women to eat during pregnancy, and others are not recommended or should be limited. Circle the foods that are not recommended or that should be limited for women during pregnancy.

orange	blue cheese	coffee	orange juice	sprouting vegetables
yoghurt	potato	raw meat	banana	rice
salmon	carrot	tuna	low-fat milk	raw eggs

Think of some suggestions that you would give a pregnant woman about how she can get more folic acid/folate in her diet.

Certain foods **contain folate** and should be eaten daily. These include:

- **Green leafy vegetables**
- **Oranges**
- **Seeds and nuts**



Activity 12

Foods and nutrients

Look at the following foods and nutrients. Match the nutrient with the food it is found in.

calcium	oranges
iron	milk
vitamin C	spinach
folic acid	red meat

2. Noora has a BMI of 32 before pregnancy. How much weight is she expected to gain during pregnancy? **5 - 9 kg**

3. Reem has a BMI of 22 before pregnancy. How much weight is she expected to gain during pregnancy? **11.5 - 16 kg**

If before pregnancy she is:

Her recommended weight gain during pregnancy is:

Underweight
(BMI < 18.5)

12.5 - 18 kg
(28-40 lb)

Healthy weight
(BMI 18.5 – 24.9)

11.5 - 16 kg
(25-35 lb)

Overweight
(BMI 25.0 – 29.9)

7 - 11.5 kg
(15-25 lb)

Obese
(BMI ≥ 30.0)

5 - 9 kg
(11-20 lb)

Give one reason why each of the following nutrients is important during pregnancy.

Nutrient	Importance
iron	the demand for iron increases as the foetus grows
calcium	Help to build healthy bones for the feotus
folic acid	can help prevent the development of defects in the brain, spine, or spinal cord

Breastmilk is the milk that is produced by the mother and fed to her baby. Breastmilk contains all of the **nutrient** and antibodies that the baby needs to grow, develop and to fight infection.

The World **Health** Organization recommends that babies should be **Exclusively** breastfed for the first **six** months.

Breastfeeding should continue until the child is **two** years of age.

Babies should be breastfed within **first** hour of birth.

The first form of milk that is produced is called **Colostrum**

It is a **Sticky** yellowish substance and it contains the best nutrients for the baby.

What recommendations about breastfeeding would you give to a woman who has just given birth to a baby? Give the baby first milk “Colostrum” by the first hour of birth it contain all the nutrient

Read the following statements about physical activity during pregnancy. Write 'A' if you agree and 'D' if you disagree with the statements in the space provided.

Taking part in regular physical activity when pregnant has many health benefits. A

If a pregnant woman has fluid loss when exercising, she should stop exercising and get medical attention. A

If a pregnant woman feels contractions during exercise, she should finish her workout as planned before getting medical attention. D

A woman should do physical activity while pregnant to lose weight. D

Doing physical activity during pregnancy can help to maintain cardiovascular and muscular fitness. A

If a woman is feeling very tired, she could try to do some physical activity. It helps to improve energy levels. A

A woman should push herself to run as fast as she can when pregnant. D

Physical activity during pregnancy can help improve a woman's self-esteem and mood. A

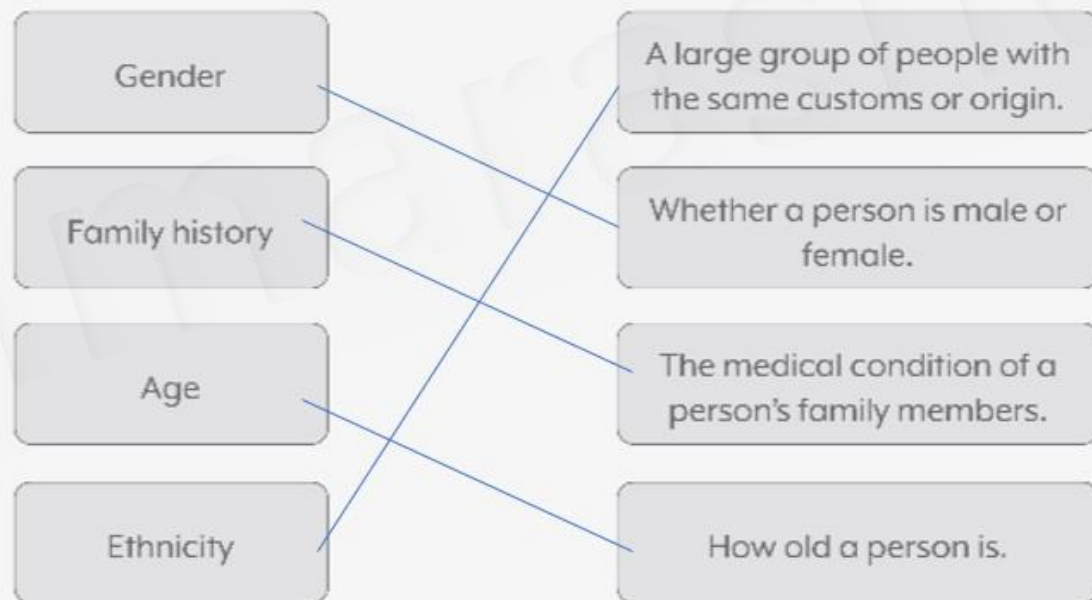
Match the description with the correct stage of labour.

lasts for approximately two hours	Stage 1
contractions around five minutes apart	
placenta is delivered	
contractions start	Stage 2
umbilical cord is clamped	Stage 3
urge to push	

There are two types of risk factors:

- Modifiable risk factors are risk factors that you can change.
- Non-modifiable risk factors are ones that you cannot change.

Match the non-modifiable risk factor to the description.



General screening tests for adults

For	To screen for	Type of test	Screening frequency
People over 20 years old	Obesity	Body mass index (BMI) and waist circumference	Once a year
People over 20 years old	Hypertension (high blood pressure)	Blood pressure measurement	Every 2 years (more if high risk)
People over 20 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

Write a short paragraph describing some of the best ways to prevent disease.

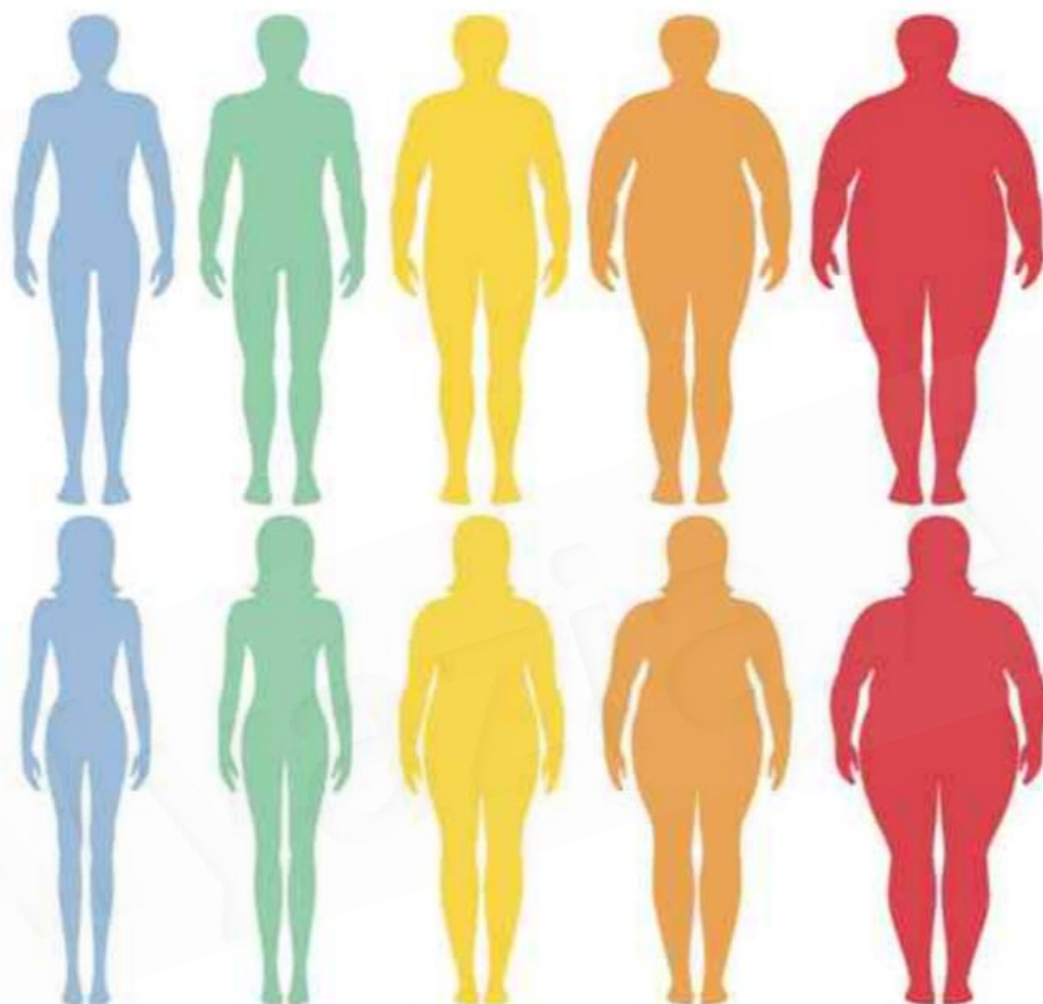
Get vaccinated, Do Medical Check ups screening for diseases

2. What are two reasons why a person might develop a disease or illness?

Not vaccinated, not screened

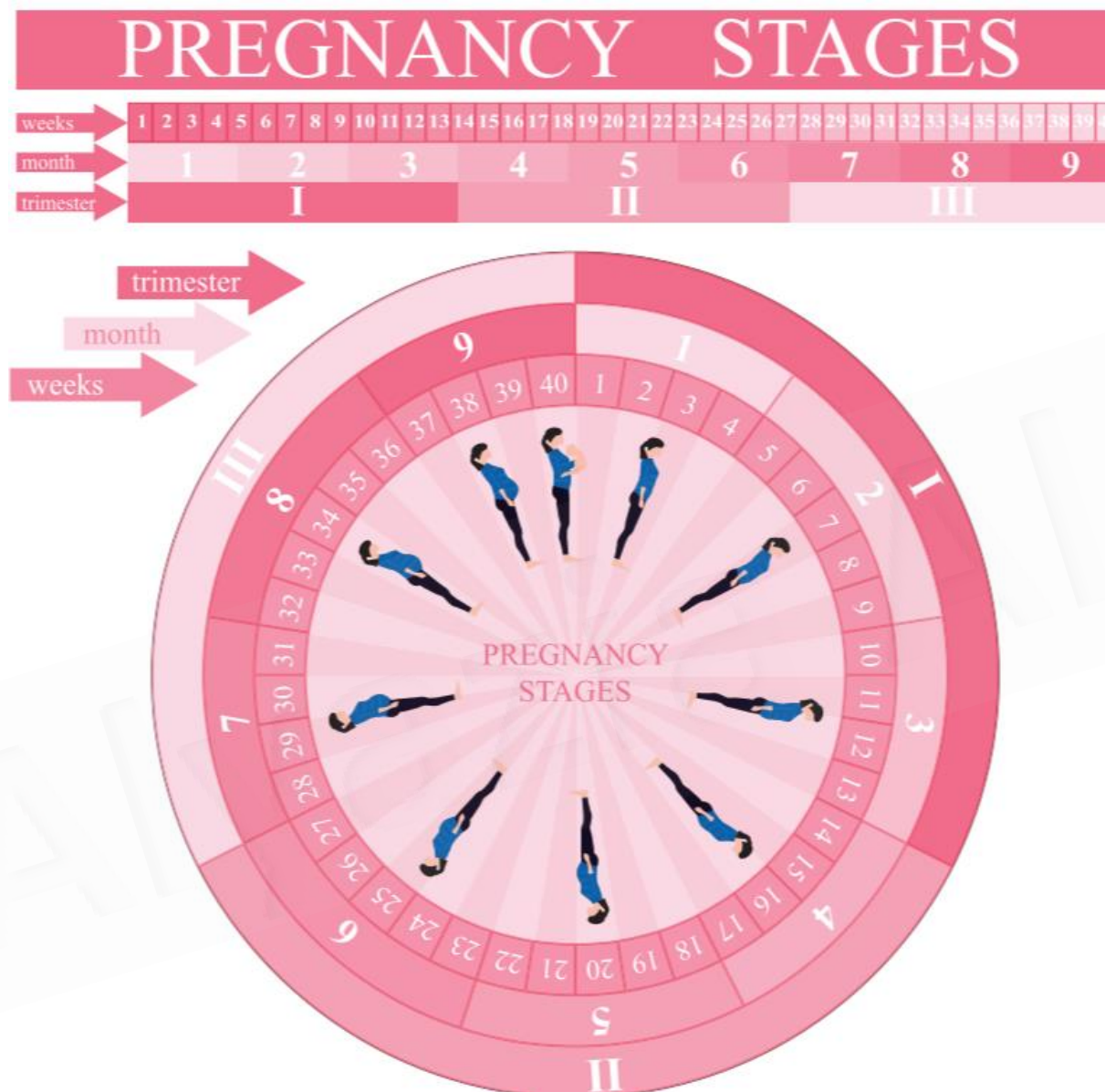
3. What is preventing or lowering the chance of getting a disease called?

Disease prevention



Write the correct BMI range (numbers) beside each classification of BMI.

BMI classification	BMI
Underweight	<18.5 UNDERWEIGHT
Normal	18.5-24.9 NORMAL
Overweight	25-29.9 OVERWEIGHT
Obese	30-34.9 OBESE



Trimester 1

A pregnant woman will miss her period, she may feel fatigued (tired) and could have morning sickness.

these changes happen to the foetus:

- The nervous system (brain and spinal cord) begins to develop.
- The umbilical cord forms.
- The heart, eyes, ears, mouth, nose, hands and feet take shape.
- The organs are forming and developing.

Trimester 2

MONTH
(WEEK 14)

changes happen to the foetus:

- The foetus begins to make urine.
- They develop meconium (the first bowel movement).
- The gender will become apparent.
- The musculoskeletal system is developing.
- The skin is translucent (almost see-through).
- They can suck their thumb and fingerprints form.
- They are gaining some body fat.

Trimester 3

the final stage of pregnancy before childbirth.

By this stage:

- The foetus' bones are fully formed, and the eyes can open and close.
- At 37 weeks, they are classed as full-term.
- The foetus will turn and be in position for childbirth towards the end of the pregnancy.
- Most women go into labour and give birth between 40 and 42 weeks of pregnancy.

Read the following statements about physical activity during pregnancy. Write 'A' if you agree and 'D' if you disagree with the statements in the space provided.

Taking part in regular physical activity when pregnant has many health benefits. A

If a pregnant woman has fluid loss when exercising, she should stop exercising and get medical attention. A

If a pregnant woman feels contractions during exercise, she should finish her workout as planned before getting medical attention. D

A woman should do physical activity while pregnant to lose weight. D

Doing physical activity during pregnancy can help to maintain cardiovascular and muscular fitness. A

If a woman is feeling very tired, she could try to do some physical activity. It helps to improve energy levels. A

A woman should push herself to run as fast as she can when pregnant. D

Physical activity during pregnancy can help improve a woman's self-esteem and mood. A

Benefits of physical activity during pregnancy

Taking part in regular physical activity during pregnancy can:

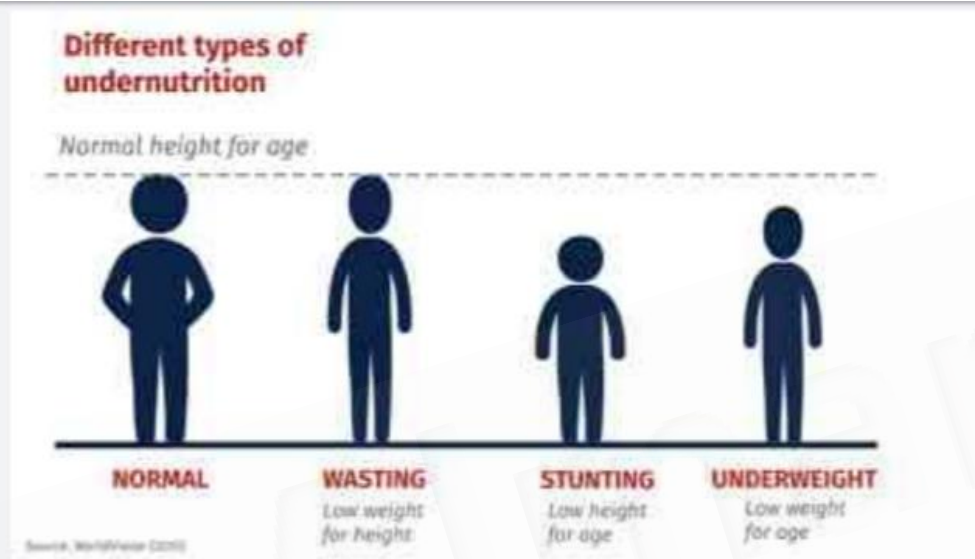
- ⊙ improve self-esteem and mood.
- ⊙ help a woman to gain only a healthy amount of weight during pregnancy.
- ⊙ help to improve energy levels.
- ⊙ help to reduce stress and anxiety.
- ⊙ help to maintain cardiovascular and muscular fitness. This helps to prepare the mother's body for childbirth.
- ⊙ reduce the risk of developing gestational diabetes; a form of diabetes that only develops during pregnancy.
- ⊙ help the woman to recover faster and remain healthy after giving birth.

Recommended exercises during pregnancy

The most recommended exercises to do when pregnant are ones which increase blood circulation and tone the body. For example:

- ⊙ Walking
- ⊙ Swimming
- ⊙ Low impact aerobics (with a qualified instructor)

Pelvic floor exercises which strengthen the muscles of the pelvis are also recommended as they can help during labour and after the birth of the baby.



Wasting is when someone is a low weight for their height. This is usually due to severe weight loss, through lack of food or they have had an infectious disease, such as diarrhoea, which has caused them to lose weight. A young child who is wasted has an increased risk of death.

Stunting is when a child is a low height for their age. It is the result of undernutrition over time and is more common in low-income countries. It is also linked to poor nutrition of the mother during pregnancy and poor feeding during infancy.

Underweight is when a child is a low weight for their age. A child who is underweight may also be stunted or wasted, or both.

When to get emergency medical care

If a pregnant woman experiences any of the following, she should get immediate medical attention.

- No movement from the foetus
- Excessive fatigue
- Excessive thirst
- Feeling of anxiety
- Heavy bleeding
- More than three contractions per hour
- Sudden loss of fluid
- Unexplained pains



Breastfeeding is important for many reasons:

- ⊙ It encourages bonding between the mother and the baby.
- ⊙ It contains all the nutrients the baby needs.
- ⊙ It is free, safe and readily available.
- ⊙ It helps to develop the baby's immune system.
- ⊙ It is environmentally friendly.

Colostrum

Colostrum is the first form of milk that is produced by the mother straight after the baby is born. This is what the baby feeds on for their first few days during breastfeeding. It is a sticky yellowish substance. It is concentrated and provides the best nutrients for the baby, including protein, vitamins and minerals.

Colostrum helps the baby to get rid of meconium. This is the baby's first stool after birth. During the first week, the amount of colostrum produced reduces and more mature milk is produced. Mature milk may look thin at the beginning. During the feed, mature milk becomes creamy and rich. This combination of thin at the beginning and rich during the feed will satisfy the hunger and thirst needs of the baby.



How much?

The baby's needs will determine how much milk is produced by the mother. The more often the baby feeds from the breast, the more milk will be produced to meet the demand. During the first few days, the baby can feed up to 15 times a day.

Babies will feed when they are hungry and stop when they are full. A baby should be breastfed as often as they want it. They will take enough milk to help them to grow and develop at a healthy rate.

Nutrients in breastmilk

Breastmilk contains all of the nutrients that babies need. The amount of nutrients in breast milk depends on the quality of the mother's diet. This is why a healthy diet is important during pregnancy as well as during the time when a mother is breastfeeding her baby.

Breastmilk contains the following:

- ⊙ Antimicrobial factors
- ⊙ Carbohydrate
- ⊙ Digestive enzymes
- ⊙ Fat
- ⊙ Protein
- ⊙ Vitamins and minerals

What is the estimated percentage of deaths due to non-communicable disease in the UAE?

 %

Worldwide 7 of the 10 leading causes of deaths in 2019 were due to non-communicable diseases. In total non-communicable diseases were the cause of 74% of deaths globally in 2019.

Planning a behaviour change intervention

Behaviour change interventions can be planned using the steps below.

Identify the problem

What is the risk to health?

Does it affect an individual, a community or the whole population?

Find the cause

Is the problem caused by individual behavior?

Is it influenced by society?

Is it influenced by the natural or man-made environment?

Take action

Decide which intervention is most suitable:

An individual, community or population approach?

At an educational, resources or policy level?

General screening tests for adults

For	To screen for	Type of test	Screening frequency
People over 20 years old	Obesity	Body mass index (BMI) and waist circumference	Once a year
People over 20 years old	Hypertension (high blood pressure)	Blood pressure measurement	Every 2 years (more if high risk)
People over 20 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

Three types of interventions:

1. **Education and communication** - This is when health advice is given to one or more people.

This could be advice from a doctor given to one person about how to have a healthy diet. It could also be a TV advert about the dangers of smoking which many people would see.

2. **Resources** - This is when things are provided for people to use to help them to make positive health changes.

For example, if people have access to a park or a gym near where they live it makes it easier for them to choose to exercise.

3. **Policy** - This is when governments write regulations to change something that affects the health of many people.

The aims of a behaviour change intervention are to:

- ⊙ promote health.
- ⊙ prevent illness and disease.
- ⊙ reduce healthcare costs.



Environmental influences on behaviour

The natural and man-made environment

The natural environment is everything that makes up the natural world around us including the air, land, water, and the weather. The man-made environment includes things that people have created including cars, buildings and roads.

The environment can have a big effect on the way that people behave. It can encourage them to make healthy or unhealthy choices.



Example

The UAE has very hot summers. During the summer, people are more likely to stay indoors and be less active, than go outside and exercise. When the weather is cooler, a lot of people can be seen outside running, walking and cycling. This is how the natural environment can influence peoples' choice to exercise.

Man-made things are usually created to make our lives easier and more comfortable. But these can also affect people's decisions to make healthy choices.

Often, people do not even know that their behaviour is being influenced by the man-made things around them.



Use the options below to answer the questions about disease and illness.

being physically active	stops a person's body from working properly
lifestyle	having a healthy diet
disease prevention	genetics

1. What does a disease or illness do?

Stops a person's body from working properly

2. What are two reasons why a person might develop a disease or illness?

Genetics, Lifestyle

3. What is preventing or lowering the chance of getting a disease called?

Having a healthy diet, being physically active

Write your own definition of malnutrition and undernutrition.

Malnutrition

describe someone who has poor
nutritional status have a **deficiency in
nutrients such as vitamins and
minerals**

Undernutrition

describe the result of a person who does not
eat enough food or get enough energy from
the food they consume.

Read the descriptions below and decide which type of undernutrition they are describing.

Someone who is not getting enough of certain
vitamins or minerals

.....**Malnutrition**.....

Someone who is a low weight for their height

.....**wasting**.....

A child who is a low height for their age

.....**stunting**.....

A child who is a low weight for their age

.....**underweight**.....

Healthy Diet

Having a healthy balanced diet is important, It can help prevent diseases.

Here are some ways that having a healthy balanced diet can reduce the risk of certain diseases:

- It helps to maintain a healthy weight
- It ensures you consume enough nutrients
- It helps to control cholesterol
- It can benefit mental health and lower stress



Folic acid

It is recommended that women take a supplement of 400µg of folic acid before and up to 12 weeks of pregnancy.

Taking folic acid **can help prevent the development of defects in the brain, spine, or spinal cord.**

Certain foods **contain folate** and should be eaten daily. These include:

- **Green leafy vegetables**
- **Oranges**
- **Seeds and nuts**



UAE National Immunisation program



- In UAE there is an immunisation schedule to vaccinate children against many different diseases.
- The vaccination schedule starts when a child is born and usually continues until the child is in grade 11.
- If you miss some injections when you are a child, you can still have them as an adult.



Timing of vaccination	Name of Vaccine	No. of Doses	مكان التطعيم	تاريخ التطعيم	عدد الجرعات	اسم اللقاح	موقع اللقاح
			Part of Vaccination	Date of Vaccination	جرعة		
After Birth	BCG Hepatitis B	One Dose 1st Dose	٢ ١	١٠٠ ١	١ ١	جرعة واحدة جرعة أولى	السرور التهاب الكبد الفيروسي البائي
End of 1st Month	Hepatitis B	2nd Dose	٢ ١	١٠٠ ١	١ ١	جرعة ثانية	التهاب الكبد الفيروسي البائي
End of 2nd Month	Polio & DPT Haemophilus Influenza B	1st Dose 1st Dose	٢ ١	١٠٠ ١	١ ١	جرعة أولى جرعة أولى	شلل الأطفال والتطاني هيموفيلوس انفلونزا ب
End of 4th Month	Polio & DPT Haemophilus Influenza B	2nd Dose 2nd Dose	٢ ١	١٠٠ ١	١ ١	جرعة ثانية جرعة ثانية	شلل الأطفال والتطاني هيموفيلوس انفلونزا ب
End of 6th Month	Polio & DPT Haemophilus Influenza B	3rd Dose 3rd Dose	٢ ١	١٠٠ ١	١ ١	جرعة ثالثة جرعة ثالثة	شلل الأطفال والتطاني هيموفيلوس انفلونزا ب
End of 9th Month	Meningitis Hepatitis B	One Dose 1st Dose	٢ ١	١٠٠ ١	١ ١	جرعة واحدة جرعة ثانية	حمى السحايا التهاب الكبد الفيروسي البائي
End of 15th Month	Measles, Mumps, Rubella (MMR) Haemophilus Influenza B	One Dose Booster Dose	٢ ١	١٠٠ ١	١ ١	جرعة واحدة جرعة معززة	حصبة / جدري الماء / الحصبة الألمانية (MMR) هيموفيلوس انفلونزا ب
End of 18th Month	Polio & DPT	Booster Dose	٢ ١	١٠٠ ١	١ ١	جرعة معززة	شلل الأطفال والتطاني



High fat, salt and sugary foods

Intake of foods that are high in fat, salt and sugar should be limited during pregnancy.



Saturated and trans fat

Limit saturated fats which are found in foods such as butter, crisps, chips, mayonnaise and the fat on meat. Avoid trans fats which are common in fast food.



Processed meat

Processed meats are high in salt and saturated fat. Intake should be limited during pregnancy.



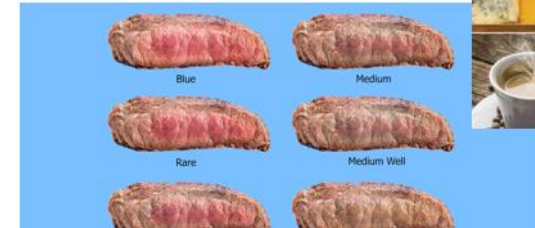
Other foods


Bacteria and parasites are present in many foods.

These can reach the foetus and can be harmful.

Pregnant women should practice good food hygiene and **avoid eating the following foods:**

- **Raw vegetables, fish, eggs and meat**
- **Undercooked meat, fish or eggs**
- **Processed meat**
- **Unpasteurised milk and dairy products**
- **Unwashed fruit and vegetables**





Activity 18

Measuring body fat

Circle the methods of measuring body fat.

Bioelectrical impedance	Weighing scales	Tape measure
BMI	DEXA scanner	Skinfold thickness

Modifiable risk factors include the following:



Obesity



Smoking



Diet

- Sedentary lifestyle (lack of exercise)
- Being overweight or obese
- Type 2 diabetes
- Smoking
- High blood pressure (hypertension)
- High blood cholesterol
- High stress levels



Diabetes



Hypertension



Non-modifiable risk factors include:

- **Gender:** You are at higher risk of developing certain diseases depending on whether you are male or female.
- **Age:** As you get older, your risk for developing certain diseases can increase.
- **Family history:** If a family member has a certain disease it could mean you are more likely to develop the same disease. This is also known as genetics.
- **Ethnicity:** Some ethnic groups are more likely to develop certain diseases compared to others.

Look at the list of risk factors. Decide if they are modifiable (M) or non-modifiable (NM). Put a tick in the correct column.

Risk factor	M	NM
Gender (male or female)		★
Sedentary lifestyle (lack of exercise)	★	
Type 2 diabetes	★	
Age		★
Family history (genetics)		★
High blood pressure (hypertension)	★	
Smoking	★	
Being overweight or obese	★	
Ethnicity		★

Growth charts

The WHO provide growth charts for all children up to the age of nineteen. These charts are used:

1. compare height and weight against people of the same age and gender.
2. follow a child's growth and identify medical problems at an early age.

The WHO growth charts are divided up into age groups. There are chart for:

- babies aged 0-2 years
- 2-5 years
- 5-19 years

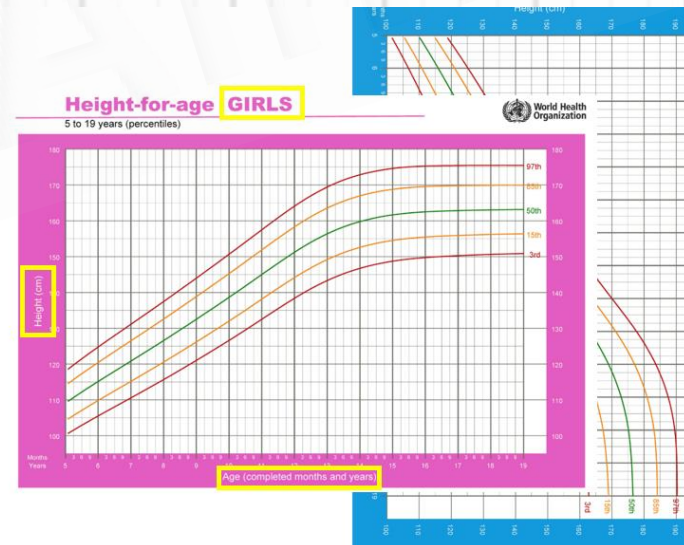
Growth generally stops after the age of 19.



What you will need

To figure out where somebody fits on a birth chart there are a few things you need to know.

- gender (male or female)
- age (usually in years)
- height (in centimetres)



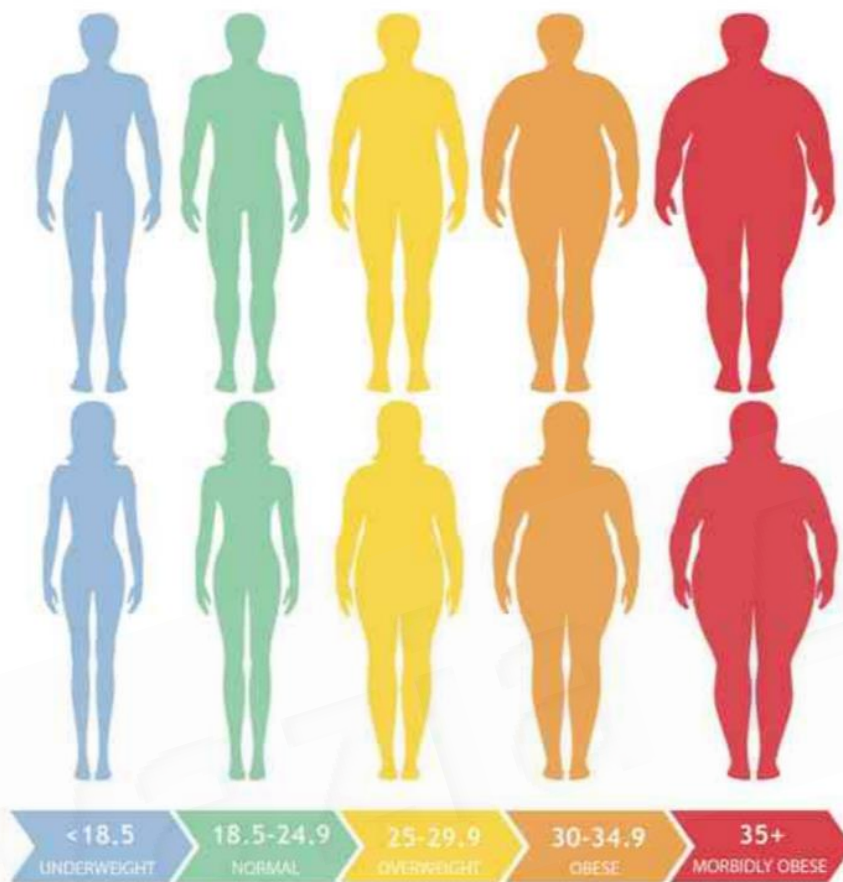


Activity 12

Foods and nutrients

Look at the following foods and nutrients. Match the nutrient with the food it is found in.

calcium	oranges
iron	milk
vitamin C	spinach
folic acid	red meat



BMI is calculated using the following equation:

$$\text{BMI} = \frac{\text{weight in kg}}{(\text{height in m})^2}$$

What is body mass index (BMI)?

Body mass index (BMI) is a measurement of a person's weight for their height, which is used to identify weight status.



Activity 13

Calculate BMI

Calculate each person's BMI and decide their BMI classification.

Hind

Height: 1.62m Weight: 68kg

BMI

25.9 = 26

BMI classification **overweight**

Shouq

Height 1.58m Weight 60kg

BMI

24

BMI classification **normal**

Mohammed

Height 1.79m Weight 55kg

BMI

17.1

BMI classification **underweight**

Rashid

Height 1.77m Weight 85kg

BMI

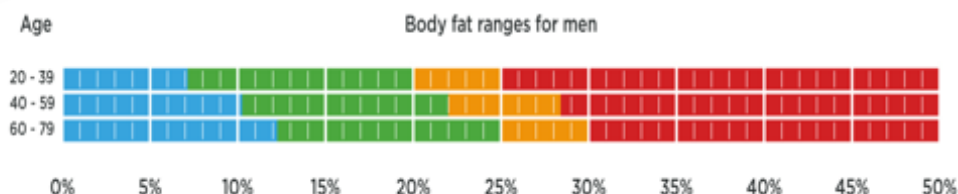
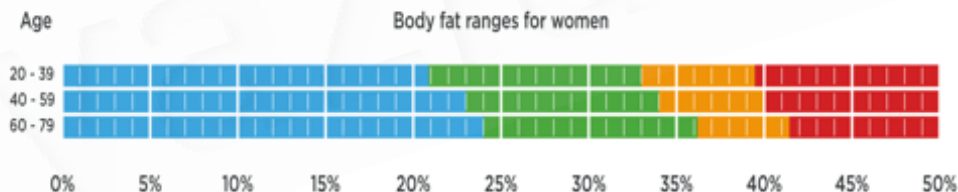
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BMI classification **Overweight - obese**

The formula for calculating body fat percentage:

$$\frac{\text{Body fat}}{\text{TBW}} \times 100$$

Healthy body fat ranges for adults



Calculate the body fat percentage of each person below, then write the colour group they fit into based on your answer.

Khalifa
Body fat: 28kg TBW: 87kg Age: 38 years

32%

Colour group **red**

Mansoor
Body fat: 12kg TBW: 84kg Age: 25 years

14%

Colour group **green**

Mouza
Body fat: 18kg TBW: 75kg Age: 58 years

24%

Colour group **green**

Amal
Body fat: 29kg TBW: 72kg Age: 67 years

40%

Colour group **Amber**

There are four possible ranges that a person can fit into:

- **Blue** too little body fat for their age.
- **Green** healthy amount of body fat for their age.
- **Amber** above the healthy body fat for their age and they should try to reduce it.
- **Red** too much body fat for their age and they should try to reduce it urgently.

The image features several heart-shaped graphics scattered across the left side. These include solid pink hearts, hearts with a pink-to-orange gradient, and hearts with a dotted pattern. Some hearts are larger and more prominent, while others are smaller and more subtle. A faint, diagonal watermark reading 'Alm3rghda' is visible across the background.

Best Wishes

Stretch the alert to the maximum