

# Food Science and Nutrition WJEC

Summer Work 2022

## Task 1 - Research Task:- Nutritional need of children 5-12 years

Write a report which includes the following information.

1. Create a table which shows the recommended nutrients that children should consume on a daily basis. Include vitamins, minerals and macro nutrients. E.g.

Vitamin	RI range
Ascorbic acid Vitamin C	30-35 mg
Thiamine Vitamin B1	?

2. Once you have completed the nutrient table; identify the function of each nutrients and the effects of deficiencies with a focus on children. Eg.

Nutrient	Function	Symptoms of deficiency
Calciferol Vitamin D	Formation of bones and teeth. Helps to promote the absorption of minerals.	Rickets in children, bone growth is retarded due to reduced absorption of calcium and phosphorous.

3. Explain the government guidelines for healthy eating in children. Refer to Eatwell plate guidance and 8 tips for healthy eating.

4. Explain how children with medical needs might have to have their diets adapted. Think about lactose intolerance, coeliac and other conditions that affect children.

5. Plan a three-course meal that would be appeal to children it must be healthy, nutritional and meet the needs of a child's diet. Include recipes and pictures.

Sites to help with research include.

<https://www.nutrition.org.uk/healthyliving/lifestages/children>

<https://www.nhs.uk/live-well/eat-well/the-eatwell-guide/>

<https://www.gov.uk/government/publications/example-menus-for-early-years-settings-in-england>

<https://www.nidirect.gov.uk/articles/healthy-eating-children>

<http://www.foodincare.org.uk/special-diets/special-diets-and-medical-conditions>

## **Task 2 - Research Government guidelines**

Produce a leaflet include a diagram of the eatwell plate showing the percentages of each food group.

Explain at least 4 facts why meals should be based on starchy foods.

Give three suggestions for eating more fruit and vegetables and how we can eat a variety.

It explains why we are encouraged to eat more fish. How many portions should we eat a week.

Explain at least three facts on how we can reduce our fat intake. What are the guidelines from the food standards agency to classify how much fat is in food products?

How can we cut down on sugar? Why should we reduce our sugar content?

Give advice on how we can reduce our salt intake.

Finally discuss importance of eating breakfast, drinking plenty of water and being active.

**Make it colourful and eye-catching and easy to follow.**

### Task 3 - Research

#### Research:- Diabetes

What is Diabetes?

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What is Type 1 Diabetes? What are the symptoms and treatment given?

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What is Type 2 Diabetes? What are the symptoms and treatment given?

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What type of diet should a diabetic follow?

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# Research:- Coeliac Disease

What is Coeliac Disease?

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What two factors may be necessary for the disease to occur?

What are the possible symptoms of coeliac disease?

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What type of diet should a coeliac follow?

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What foods must they avoid?

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Why should coeliac's be careful when eating processed foods?

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Which nutrients could a coeliac be missing in their diet and where could they find them other than grains ?

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What foods could you recommend to a coeliac as being naturally gluten-free?

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Check your understanding of the following terms:-

Gluten:-

Villi:-

## Research:- Osteoporosis

What is osteoporosis?

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What part do hormones play in osteoporosis?

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What are the factors that can increase a person's risk of developing osteoporosis?

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Which nutrients are important in protecting against osteoporosis?

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Why is it important to have these nutrients early in life?

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What foods should be eaten to help protect bones ? (Explain why)

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What form of exercise can help prevent osteoporosis from developing? (give examples)

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Check your understanding of the following terms:-

Multifactorial disease:-

Menopause:-

Malabsorption:-

## Task 4 - Malnutrition

1. Create revision cards or mind maps on Malnutrition.
2. Make a 20-mark quick quiz based on malnutrition that could be used as a lesson starter. Create a question paper and answer paper.

Malnutrition is caused by a lack of nutrients in your diet. This is either due to an inadequate diet or problems absorbing nutrients from food.

### **Medical condition. Medical conditions that can lead to malnutrition include:**

- a condition that causes a lack of appetite, such as cancer, liver disease, persistent pain or nausea
- a mental health condition, such as depression or schizophrenia, which may affect your ability to look after yourself
- a health condition that requires frequent hospital admissions
- a health condition that disrupts your body's ability to digest food or absorb nutrients, such as Crohn's disease or ulcerative colitis
- dementia – people with dementia may be unable to communicate their needs when it comes to eating
- dysphagia – a condition that makes swallowing difficult or painful
- persistent vomiting or diarrhoea
- an eating disorder, such as anorexia nervosa.

### **Physical factors - Physical factors can also contribute to malnutrition. For example:**

- if your teeth are in a poor condition, or if dentures don't fit properly, eating can be difficult or painful
- you may lose your appetite as a result of losing your sense of smell and taste
- you may have a physical disability or other impairment that makes it difficult for you to cook or shop for food yourself

### **Social factors**

- Social situations that can contribute to malnutrition include:
- living alone and being socially isolated
- having limited knowledge about nutrition or cooking
- reduced mobility
- alcohol or drug dependency
- low income or poverty

### **Children**

- In the UK, the most common causes of malnutrition in children are long-term health conditions that:
- cause lack of appetite
- disrupt the normal process of digestion
- cause the body to have an increased demand for energy
- Examples of these types of conditions include childhood cancers, congenital heart disease, cystic fibrosis and cerebral palsy.
- In the UK, malnutrition as a result of inadequate food intake is rare, although it may occur if a child is neglected, living in poverty or being abused.

- Sometimes, children become malnourished because they avoid eating due to issues with their body image.

### **Symptoms of malnutrition**

The most common symptom of undernutrition is unintentional weight loss (losing 5-10% or more of your body weight over three to six months). Other signs can include:

- weak muscles
- feeling tired all the time
- low mood
- an increase in illnesses or infections
- The main sign of over nutrition is being overweight or obese. However, people with undernutrition can also be overweight if they eat a diet high in energy (calories), but low in other nutrients.
- Signs of malnutrition in children can include failure to grow at the expected rate and changes in behaviour, such as appearing unusually irritable, sluggish or anxious.
- Your child's weight and physical development should be regularly assessed by your GP when your child is young. Speak to your GP or health visitor if you have any concerns about your child's health or development.

### **Treatment**

- Your dietary plans will depend on your individual circumstances, but it's likely you'll be advised to gradually increase your intake of energy (calories), protein, carbohydrates, fluids, and vitamins and minerals. The aim is to reduce your risk of developing complications, such as infections, and to avoid hospital admission.
- The British Dietetic Association (BDA) has produced a factsheet called Malnutrition – overcoming the problem (PDF, 560kb), which provides some useful practical advice.
- You may also be advised to take special nutritional supplements which can increase your energy and protein intake. You'll be helped to set targets and your progress will be regularly monitored.
- Depending on the cause of your malnutrition, you may also need additional help. For example, you may benefit from the help of a carer if poor mobility makes it difficult for you to shop for food or cook. Or make use of agencies that can offer readymade meals delivered to the home. They also remove the pressure of trying to do the shopping and preparing meals especially if you are elderly or disabled.
- If you have problems swallowing food or drink (dysphagia), you may be referred to a speech and language therapist (SLT) who can assess your swallowing and offer advice about a special diet that can help.
- If you can't eat enough to meet your body's needs, an artificial method of feeding may be required, such as a feeding tube. These are fitted in hospital but can be used at home (see below).