

Level 1/2 Hospitality and Catering: Unit 2-2.1.1 - Understanding the importance of nutrition



The importance of nutrition

Listed below are the macro-nutrients and micro-nutrients. You need to know their function in the body and know examples of food items for each. You need to know why they are needed in the diet and why there is a need for a balanced/varied diet.

Macro-nutrients

Carbohydrates - Carbohydrates are mainly used in the body for energy. There are two types of carbohydrates which are:

- **Starch** - Examples include bread, pasta, rice, potatoes and cereals.
- **Sugar** - Examples include sweets, cakes, biscuits & fizzy drinks.

Fat - This is needed to insulate the body, for energy, to protect bones and arteries from physical damage and provides fat soluble vitamins. There are two main types of fat which are:

- **Saturated fat** - Examples include butter, lard, meat and cheese.
- **Unsaturated fat** - Examples include avocados, plant oils such as sunflower oil, seeds and oily fish.

Protein - Protein is mainly used for growth and repair in the body and cell maintenance. There are two types of protein which are:

- **High biological value (HBV) protein** - Includes meat, fish, poultry, eggs, milk, cheese, yogurt, soya and quinoa.
- **Low biological value (LBV) protein** - Includes cereals, nuts, seeds and pulses.

Micro-nutrients

Vitamins

- **Fat soluble vitamin A** - Main functions include keeping the skin healthy, helps vision in weak light and helps children grow. Examples include leafy vegetables, eggs, oily fish and orange/yellow fruits.
- **Fat soluble vitamin D** - The main function of this micro-nutrient is to help the body absorb calcium during digestion. Examples include eggs, oily fish, fortified cereals and margarine.
- **Water soluble vitamin B group** - Helps absorb minerals in the body, release energy from nutrients and helps to create red blood cells. Examples include wholegrain foods, milk and eggs.
- **Water soluble vitamin C** - Helps absorb iron in the body during digestion, supports the immune system and helps support connective tissue in the body which bind cells in the body together. Examples include citrus fruits, kiwi fruit, cabbage, broccoli, potatoes and liver.

Minerals

- **Calcium** - Needed for strengthening teeth and bones. Examples include dairy products, soya and green leafy vegetables.
- **Iron** - To make haemoglobin in red blood cells to carry oxygen around the body. Examples include nuts, beans, red meat and green leafy vegetables.
- **Sodium** - Controls how much water is in the body and helps with the function of nerves and muscles. Examples include salt, processed foods and cured meats.
- **Potassium** - Helps the heart muscle to work correctly and regulates the balance of fluid in the body. Examples include bananas, broccoli, parsnips, beans, nuts and fish.
- **Magnesium** - Helps convert food into energy. Examples include wholemeal bread, nuts and spinach.
- **Dietary fibre (NSP)** - Helps digestion and prevents constipation. Examples include wholegrain foods (wholemeal pasta, bread and cereals), brown rice, lentils, beans and pulses.
- **Water** - Helps control temperature of the body, helps get rid of waste products from the body and prevents dehydration. Foods that contain water naturally include fruits and vegetables, milk and eggs.

Unit 2: Controlled assessment (9 hours)

AC1.1 Nutrition: Describe functions of nutrients in the human body.

Fruits & Vegetables

- Eat 5 portions a day!
- Choose a variety
- Provides fibre for healthy digestion
- Provides vitamins and minerals for healthy body functions and immune system

40%

Starchy Foods

- Provide slow release carbohydrate used by the body for energy
- Choose wholegrains for increased fibre (good digestion, reduced risk of heart disease)

38%

Fatty and Sugary Foods

- These are the danger foods!
- They are not part of a healthy diet
- Eat them only occasionally
- Eating too much fatty and sugary processed food is linked to increased risk of weight gain/obesity, diabetes, tooth decay and cardiovascular disease

0%

Beans, Pulses, Eggs, Meat, Fish

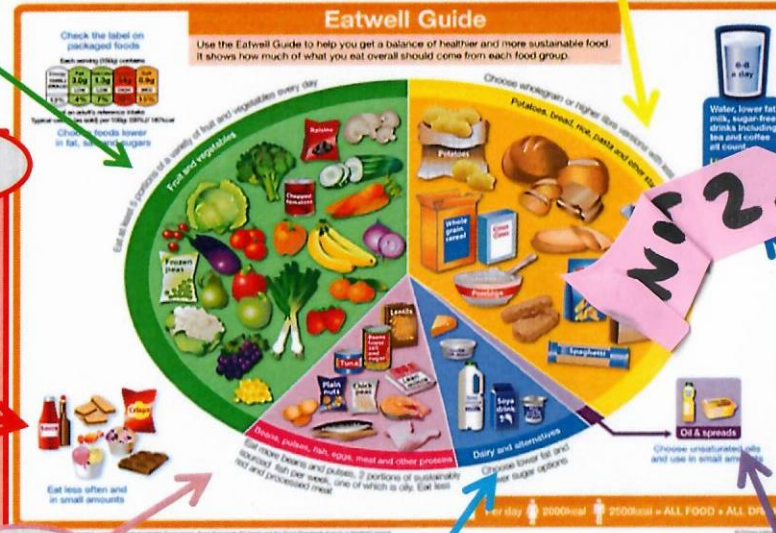
- Provide protein for growth, repair and maintenance of body cells
- Choose a combination of plant proteins
- Avoid eating too much processed meat like bacon and sausages as these are linked with increased risk of bowel and stomach cancer

12%

Dairy Foods

- Provide calcium for healthy bones, teeth and nails
- The body needs Vitamin D to absorb calcium effectively

8%



Portion Control!

Healthy diets not only have the correct balance, but have the right portion sizes. Here is a 'handy' guide...

Vegetables = double cupped palm.

Grains/Starches = clenched fist.

Protein = palm of hand.

Fruits = clenched fist.

Thumb = fats.



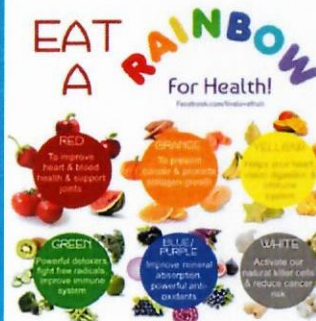
Water Intake

A balanced diet must include water, it is required for nearly all brain and other bodily functions
See slide 2 for more details on water

Oils & Spreads

Provide fat soluble vitamins A,D,E & K
Are high in calories & energy so keep use to a minimum
It is recommended to choose unsaturated oils like olive oil

1%



The Eatwell Guide is the UK Healthy Eating Model. It shows what we should eat as a balanced diet. The size of the sections represents the proportion of our diet that particular food group should make up. The Eatwell Guide was updated in 2016 to take into account scientific opinion and public opinion. The main change was that sugary and fatty foods are shown off the plate as they are not part of a healthy diet.

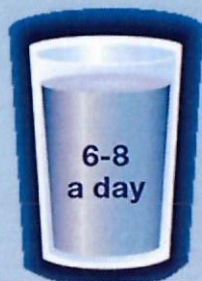
AC1.1 Nutrition: Describe functions of nutrients in the human body.

Water intake

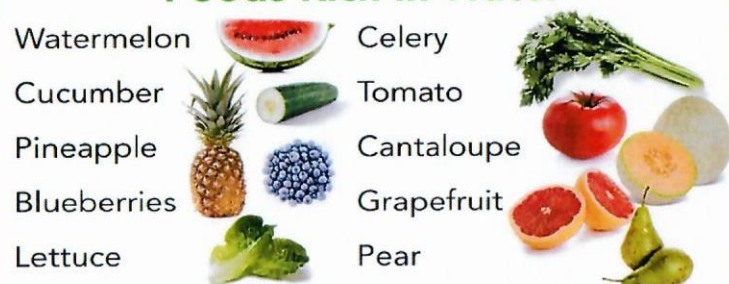
[Click here](#) to watch video on water

Water makes up just over 2/3 of the human body and is required for:

- Maintain body temperature
- Metabolise fat
- Aid digestion
- Lubricate organs
- Transport nutrients
- Flushes out waste and toxins



Foods Rich in Water



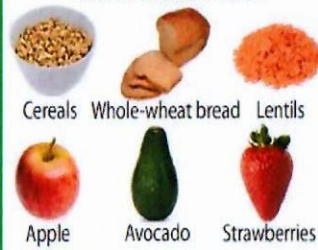
FIND OUT MORE HERE: <https://www.nhs.uk/live-well/eat-well/water-drinks-nutrition/>

Keeping hydrated is important. It is recommended that 6-8 glasses of water or other fluid are consumed everyday to replace normal water loss, rather than to obtain any broader health benefits.

Soluble Fiber



Insoluble Fiber



The Bristol Stool Chart

The Bristol stool chart shows how the shape of different stools (poos) on a continuum.

Both dietary fibre and water play a HUGE role in keeping the digestive system functioning properly.

Too little water and/or fibre can result in constipation (the Type 1 and 2 stools)

Bristol Stool Chart

Type 1 Separate hard lumps, like nuts (hard to pass)

Type 2 Sausage-shaped but lumpy

Type 3 Like a sausage but with cracks on the surface

Type 4 Like a sausage or snake, smooth and soft

Type 5 Soft blobs with clear-cut edges

Type 6 Fluffy pieces with ragged edges, a mushy stool

Type 7 Watery, no solid pieces. Entirely Liquid

Soluble fibre dissolves in water and the insoluble kind doesn't. **Insoluble** helps absorb water and bulk up stools. **Soluble** helps reduce blood cholesterol and sugar.

Fibre intake

What is it?

Fibre is found in fruits and vegetables, nuts, seeds, wholegrain cereal flours and products. It is not digestible and passes through the digestive system, forming the bulk of our stools (poo).

Dietary fibre has many health benefits:

- It can reduce your risk of heart disease, diabetes and some cancers, and also help weight control.
- Fibre is also important for digestive health - fibre bulks up stools and holds water in them, making them softer and easier to pass. It also makes waste move through the digestive tract more quickly, which is better for the gut and can help to prevent constipation.
- Some types of fibre can be fermented by gut bacteria, producing substances that appear to be good for gut health. Providing 'food' for gut bacteria can also help increase the number of healthy bacteria in the gut.

How FIBRE Much do we Need?

30g a day for adults

2-5 years 15g per day, 5-11 years 20g per day, 11-16 years 25g per day, 16-18 years 30g per day

To increase your fibre intake you could:

- Choose a high fibre breakfast cereal e.g. bran flakes, or porridge
- Choose wholegrains like whole-wheat pasta, bulgur wheat or brown rice, wholemeal bread
- Go for potatoes with skins
- For snacks try fruit, vegetable sticks, rye crackers, oatcakes, unsalted nuts or seeds
- Include plenty of vegetables with meals – either as a side dish or added to sauces, stews or curries
- Add pulses like beans, lentils or chickpeas to stews, curries and salads
- Eat fruit!
- Add nuts and seeds to recipes

AC1.1: Reference Intake

The NHS recommends the following intake of each nutrient per day:



Nutrient	Amount	Calories per gram
Energy (calories)	2,000kcal	
Carbohydrate of which sugars	At least 260g 90g	4kcal
Protein	50g	4kcal
Fat of which saturates	Less than 70g Less than 20g	9kcal

As you can see below we need much less of the micronutrient: Vitamins and minerals. There are slight differences between males and females.

Nutrient	Males	Females
Vitamin A	0.7mcg	0.6mcg
Vitamin D	10mcg	
Vitamin E	4mg	3mg
Vitamin K	1mcg per kg of body weight	
Vitamin B	Thiamin: 1mg Riboflavin: 1.3mg Vitamin B12: 1.5mcg	Thiamin: 0.8mg Riboflavin: 1.1mg Vitamin B12: 1.5mcg
Vitamin C	40mg	
Sodium (Salt)	Less than 6g	
Iron	All (M) 8.7mg	(F) 19-50yrs 14.8mg / 50yrs+ 8.7mg
Calcium	700mg	

What are
Calories
[click here](#)

Click [here](#)
to find out
more about
food labels

Adult reference intakes

Unless the label says otherwise, RI values are based on an average-sized woman doing an average amount of physical activity. This is to reduce the risk of people with lower energy requirements eating too much, as well as to provide clear and consistent information on labels.

As part of a healthy balanced diet, an adult's reference intakes ("RIs") for a day are:

- Energy: 8,400 kJ/2,000kcal
- [Total fat](#): 70g
- Saturates: 20g
- [Carbohydrate](#): 260g
- [Total sugars](#): 90g
- Protein: 50g
- [Salt](#): 6g

Red colour coding means the food or drink is high in this nutrient and we should try to have these foods less often or eat them in small amounts. **Amber** means medium, and if a food contains mostly amber you can eat it most of the time. **Green** means low, and the more green lights a label displays the healthier the choice.



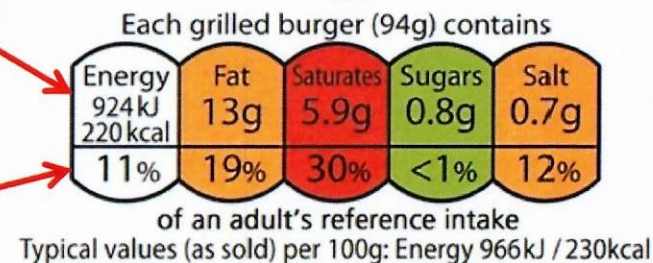
Front of Pack label

Portion/Serving size is indicated on the label.
This is NOT always the whole pack!

Front of pack nutrition labelling is optional

Traffic light system indicates with colour how much of intake is needed.
Easy to see, quick to take in

Energy intake as a percentage of RI



Current Healthy Eating Advice

Fat intake

How much is too much?

Click [here](#) to find out more about Fat

Saturated fat

We are all eating too much unhealthy fat

4-6 years



7-10 years



11+ years



Sugar intake

How much is too much?

The maximum daily amounts of added sugar are:

Click [here](#) to find out more about sugar

4 to 6 years



7 to 10 years



11+ years



Salt intake

Click [here](#) to find out more about salt

AGE	Target Maximum Salt Intake (grams)
0 to 6 months	less than 1g daily
7 to 12 months	1g per day
1 to 3 years	2g per day
4 to 6 years	3g per day
7 to 10 years	5g per day
From age 11 onwards	6g per day (as for adults)

8 Tips for Healthy Eating!

1. Eat more fibre
2. Eat more fruits and Vegetables
3. Eat more oily fish
4. Eat less salt
5. Eat less fat
6. Eat less sugar
7. Choose wholegrains
8. Drink 6-8 glasses of water per day

What counts as 5 A Day?

For **kids**, the amount they should eat depends on their size and age. As a rough guide, one portion is the amount they can fit in the palm of their hand.

For **adults**, a portion is 80g fruit of vegetables or 30g of dried fruit.

Healthy Eating Guidelines in the UK are set by Public Health England



2016 Update from Public Health England - The latest advice on Vitamin D intake

What is the new vitamin D advice?

The new advice from PHE is that adults and children over the age of one should consider taking a daily supplement containing 10mcg of vitamin D, particularly during autumn and winter.

People who have a higher risk of vitamin D deficiency are being advised to take a supplement all year round.

SACN's review concluded that these at-risk groups include people whose skin has little or no exposure to the sun, like those in care homes, or people who cover their skin when they are outside.

People with dark skin, from African, African-Caribbean and South Asian backgrounds, may also not get enough vitamin D from sunlight in the summer. They should consider taking a supplement all year round as well.

	Nutrient	Source	Function	Effects too little (deficiency)	Effect of too much (access)
MACRONUTRIENTS	Carbohydrates Click here to see a video.	Starches – found in cereal grains such as rice, wheat, oats, plus starchy tubers (potatoes and sweet potatoes) and vegetables (carrots, beets, corn) Sugars – lactose found in milk and dairy, fructose found in honey, fruits and some vegetables (peppers, tomatoes etc.)	Two types: 1. Starchy (complex) provide energy when broken down – slow release energy to the body (wholegrain provide slower release carbohydrates) 2. Sugary (simple) provide quick release energy to the body's' cells.	Deficiency of carbohydrates is extremely rare in the UK. Long term lack of carbohydrates in the diet can cause Ketosis – a condition where the body switches to using protein as an energy source. Visible symptoms- lack of energy and weight loss. Non- visible symptoms- Not enough fibre from wholegrains foods leads to constipation and other intestinal problems.	If not used for energy it becomes stored as fat. Visible symptoms weight gain and obesity. Non- visible- eating too much non refined(white carbs) leads to tooth decay, raising blood sugar levels and type 2 diabetes.
	Proteins Click here for video	High Biological Value (HBV) protein: Meat, fish, poultry, eggs, Low Biological Value (LBV) protein: Tofu, beans, nuts.	Protein is digested by the body into its component parts – called amino acids. There are 8 which are essential for adults and 12 for children. HBV protein foods contain all the essential amino acids.	Visible symptoms- • Wasting of muscle & muscle loss • Oedema – build up of fluids in the body • Slow growth in children Severe deficiency leads to kwashiorkor (bloating of the stomach) Non-visible symptoms- weaker immune system which needs protein to function properly.	Visible symptoms excess stored as fat, lead to weight gain and obesity. Non-visible symptoms- Puts a strain on how well the kidneys work.
	Fats Click here for video Click here for more info	Butter, cheese, dairy foods including yogurt, crème fraiche, milk Oils, lard, suet, dripping. 	Fat is a term used to describe lipids – this can refer to solid fats and oils. Fat is broken down by the body and used for energy, Also used to provide warmth when stored under the skin. Is a dietary carrier of fat soluble vitamins A, D, E & K. Two types of fats: Unsaturated and saturated.	Visible symptoms- Weight loss over time as the body uses stores of fat. Person feels cold as fat under skin acts as insulator. Non-visible symptoms- Bruising of the bones as they are not protected. Lack of fat in the diet can lead to deficiencies of fat soluble vitamins A, D, E & K.	Common issue in the UK Visible symptoms- Stored under the skin in adipose tissue cells, which leads to disease such as type 2 diabetes, obesity and heart disease and high bloody pressure. Non-visible symptoms- Internal organs store fat which prevents them working properly. Fat blocks arteries.

Unsaturated Fat:

- Liquid at room temperature.
- Mainly from non-animal (plant) sources.
- Can lower blood cholesterol.

**Saturated Fat:**

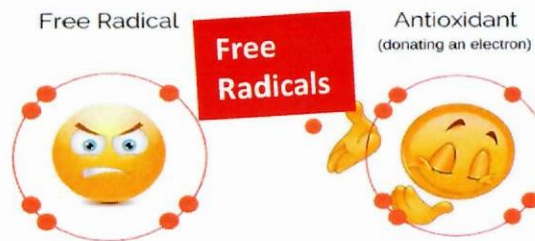
- Solid at room temperature.
- Mainly from animal sources. *With the exception of palm and coconut oil.
- Causes high blood cholesterol.

AC1.1 Nutrition: Describe functions of nutrients in the human body - MICRONUTRIENTS

Click [here](#) to watch a video on Vitamins and minerals

Vitamins and Minerals are chemicals found naturally in food. With the exception of Vitamin D, which can be manufactured through the action of sunlight on the skin, vitamins cannot be made by the body, and must be provided by the diet. They are needed in minute (tiny) amounts to perform specific functions and fall into two different classes:

Water Soluble	Fat Soluble
C	A
B group	D
	E
	K



Essentially, damaged oxygen molecules with an extremely unstable atomic structure. They attack fats and proteins all over the body, especially those in membranes that line the blood vessels, the skin and other connective tissue. They can make you age a lot quicker! Anything we do to raise our metabolic rate (like exercise) accelerates the production of free radicals.

Water Soluble	Needed For	Found In	Deficiency/ Excess AC1.3 Explain characteristics of unsatisfactory nutritional intake.
C Antioxidant	Normal structure and function of connective tissue e.g. collagen. Helps healing process. Antioxidant (protects from free radicals). Helps absorb iron in the body. Improves immune system.	Main sources from plants – fruits and vegetables. Milk and liver contain small amounts.	Deficiency - Scurvy, very rare symptoms include bleeding gums, wounds not healing properly, tiredness. Lack of vitamin C effects absorption of iron. Excess is eliminated from the body within 24 hours so not a problem.
B1 Thiamin	Normal function of the nervous system and heart	Whole grains, meat, flour and breakfast cereals.	Deficiency -Beri-beri (disorder of the nervous system). Excess -body excretes it.
B2 Riboflavin	Release of energy from food.	Milk, eggs, green vegetables, cererals.	Deficiency - Dry cracked skin around the mouth and nose. Excess -body excretes it.
B3 Niacin	Energy release, skin and membranes.	Milk, eggs, cheese, meat.	Deficiency - disease pellagra. Symptoms can include dermatitis, dementia and diarrhoea. Excess -body excretes it.
B9 Folate	Red blood cells and nervous system.	Green leafy vegetables.	Deficiency - can lead to anaemia. Symptoms can include insomnia, depression and forgetfulness. Excess -body excretes it.
B12 Colbalbumin	Cell division and blood formation. Normal structure of nerves.	Animal sources – milk, meat and eggs. Some algae and bacteria can produce B12.	Deficiency - Anemia (rare), may be found in vegetarians. Excess -body excretes it.

AC1.1 Nutrition: Describe functions of nutrients in the human body - MICRONUTRIENTS

AC1.3 Explain characteristics of unsatisfactory nutritional intake.

Fat Soluble	Needed For	Found In	Deficiency/ Excess
A Antioxidant	• Needed for structure and functioning of the skin and mucous membranes, • Cell differentiation • Helps with vision in dim light and colour vision • Keeping the immune system healthy.	Dairy Products Dark Green Veg Orange coloured fruit and veg Fish Oils and Liver	<u>Deficiency</u> -Poor vision, night blindness. <u>Excess</u> - stored in the liver and too much can be toxic.
D	Needed for the absorption of calcium and phosphorus from foods, to keep bones healthy.	Fish Oils Dairy Products Sun Light Absorption. Often added to cereal and margarine.	<u>Deficiency</u> -Rickets (soft deformed) Osteomalacia (weak bones) <u>Excess</u> : build up of calcium, poor appetite, vomiting
E Antioxidant	Helps maintain healthy skin and eyes and strengthen the body's natural defence against illness and infection.	Dairy Products Dark Green veg Nuts	<u>Deficiency</u> - Rare- Age quickly, Wrinkles Skin loses elasticity. <u>Excess</u> - In very large doses may interfere with absorption of vitamin A
K	Needed for clotting of blood and is also required for normal bone structure. Infants are given vitamin K at birth.	Dark Green Veg Fish, liver, fruit	<u>Deficiency</u> - Hemorrhages- ruptured blood vessels. <u>Excess</u> - Unknown



AC1.1 Nutrition: Describe functions of nutrients in the human body - MICRONUTRIENTS

[Click here](#) to watch a video on Vitamins and minerals

AC1.3 Explain characteristics of unsatisfactory nutritional intake.

	Nutrient	Function	Source	Effects too little (deficiency)	Effect of too much (access)
MINERALS	Iron	Needed to make haemoglobin in red blood cells which transports oxygen around the body. Also removing waste substances from the body.	Haem iron found in meat, offal Non-haem iron found in wholegrain foods, leafy green vegetables, fortified breakfast cereals Iron is only absorbed in the presence of vitamin C.	Iron deficiency anaemia is the most common dietary deficiency in the UK. Visible Symptoms include tiredness, paleness, lethargy. Weak and splitting nails.	Side effects of taking high doses (over 20mg) of iron include constipation, vomiting. Very high doses of iron can be fatal , particularly if taken by children, so always keep iron supplements out of the reach of children
	Calcium	Needed by the body to build strong bones and teeth. Essential for blood clotting process and blood pressure. Essential for nerve signal transmission and muscle contraction. The skeleton contains about 99% of the body's calcium	Dairy foods including milk, yogurt, cheese, butter Dark leafy green vegetables, Fish with edible bones including sardines and pilchards Non-dairy milks fortified with added calcium	Visible symptoms Lack of calcium in children can cause rickets Osteoporosis (brittle bones) in adults later on in life when bone density is less. Rickets wear children's bones are weak and soft causing them to be deformed. • To find out more click here Non-visible symptoms • Bones and teeth weaken, • Nerves and muscles don't work properly. • Blood will not clot and form a scab after an injury.	Hypercalcemia is a condition in which you have too high a concentration of calcium in your blood .
	Sodium	Controls the amount of water in the body Makes nerves and muscles work properly	Salted foods, yeast extract, stock cubes, gravies, seasonings, snack foods, canned fish, bacon, ham, fast foods, ready meals, baking powder and takeaway foods.	Visible symptoms: • Unlikely, but can be caused by excessive sweating or vomiting and diarrhoea • Muscle cramps, weakness	• Water retention and swelling • High blood pressure • Heart problems • Headaches • Guideline is 6g for adults • 4g for teenagers

Level 1/2 Hospitality and Catering: Unit 2-2.1.1 - Nutrition at different life stages & special dietary needs



Nutrition at different life-stages

Adults:

- **Early** – Growth in regard to height of the body continues to develop until 21 years of age. Therefore, all micro-nutrients and macro-nutrients especially carbohydrates, protein, fats, vitamins, calcium and iron are needed for strength, to avoid diseases and to maintain being healthy.
- **Middle** – The metabolic rate starts to slow down at this stage, and it is very easy to gain weight if the energy intake is unbalanced and there isn't enough physical activity.
- **Elderly** – The body's systems start to slow down with age and a risk of blood pressure can increase as well as decrease in appetite, vision and long-term memory. Because of this, it is essential to keep the body strong and free from disease by continuing to eat a healthy, balanced diet.

Children:

- **Babies** – All nutrients are essential and important in babies, especially protein as growth and development of the body is very quick at this stage. Vitamins and minerals are also important. You should try to limit the amount of salt and free sugars in the diet.
- **Toddlers** – All nutrients remain very important in the diet at this stage as growth remains. A variety of foods are needed for toddlers to have all the micro-nutrients and macro-nutrients the body needs to develop.
- **Teenagers** – The body grows at a fast pace at different times at this stage as the body develops from a child to an adult, therefore all nutrients are essential within proportions. Girls start their menstruation which can sometimes lead to anaemia due to not having enough iron in the body.

Special Dietary needs

Different energy requirements based on:

- Lifestyles / Occupation / Age / Activity level
The amount of energy the body needs is determined with each of the above factors e.g. active lifestyle or physical activity level would need more energy compared to a person being sedentary.

Medical conditions:

- **Allergens** – Examples of food allergies include milk, eggs, nuts and seafood.
- **Lactose intolerance** – Unable to digest lactose which is mainly found in milk and dairy products.
- **Gluten intolerance** – Follows a gluten free diet and eats alternatives to food containing wheat, barley and rye.
- **Diabetes (Type 2)** – High level of glucose in the blood, therefore changes include reducing the amount of fat, salt and sugar in the diet.
- **Cardiovascular disorder** – Needing a balanced, healthy diet with low levels of salt, sugar and fat.
- **Iron deficiency** – Needing to eat more dark green leafy vegetables, fortified cereals and dried fruit.

Dietary requirements:

- **Religious beliefs** – Different religions have different dietary requirements.
- **Vegetarian** – Avoids eating meats and fish but does eat dairy products and protein alternatives such as quorn and tofu.
- **Vegan** – Avoids all animal foods and products but can eat all plant-based foods and protein alternatives such as tofu and tempeh.
- **Pescatarian** – Follows a vegetarian diet but does eat fish products and seafood.

AC1.2 Special Diets: Compare the nutritional needs of different groups of people.

Nutrition through life differs mainly due to the need for energy and protein for growth and development – in younger age groups, growth and development occurs, in older age groups only maintenance of the body is required, therefore protein and energy requirements are reduced.

GENDER affects nutritional requirements after puberty – before puberty male and female requirements are the same. Puberty causes girls to begin menstruation, increasing their iron needs, which remain higher than men until the menopause which occurs around 50 years of age. Generally males are physically larger than females and therefore need to consume more energy and protein on a daily basis.

PHYSICAL ACTIVITY LEVEL affects a person's energy requirements. The more active a person is, the more energy they need. It is recommended that extra energy requirements come from extra starchy carbohydrate in the diet. Increased PAL could be from having an active job or from playing lots of sport.

[Click here to find out more life stages and diets](#)

Babies and Toddlers

- Milk only for first 4-6 months
- Weaning occurs from 6 months – introduce a wide variety of textures and colours
- Avoid nuts (choking hazard), salt and sugar.

Pre-school children

- Balanced diet needed – in line with Eatwell Guide from 12 months
- High needs for energy and protein due to rapid growth and constant movement
- Full fat dairy products should be consumed
- Salt and sugar should be avoided

Children

- Balanced diet needed – in line with Eatwell Guide from 12 months
- High needs for energy and protein due to rapid growth and constant movement
- 5-a-day is recommended.
- Energy requirements increase because they grow quickly and become active.
- Good supply of protein, calcium, iron, vitamin A and D, as part of a healthy, balanced diet
- Calcium and vit D for healthy tooth development, and strong bones.
- Limit sugary carbohydrates such as sweets -tooth decay.
- Fat: small amounts for energy and insulation.
- Young children small stomachs, small and frequent meals. No room for junk food
- Children cannot cut food and chew as easily so need easy to eat foods
- Avoid nuts- choking and allergy risks.
- Children need plenty of fluid and they should be encouraged to drink regularly, especially if they are very active.

Teenagers

Increased needs for iron in teenage girls due to menstruation
Calcium intake & vitamin D are really important to ensure Peak Bone Mass is reached – setting up bone health for life.
Boys need extra iron initially for growth and muscles but this need decreases after age 19.
Boys need more protein and energy than girls due to their later growth spurt
Many UK teenagers are lacking in calcium, iron and vitamin A.

Adults

Requirements do not change much between the ages of 19 to 50, except during pregnancy and lactation.
Well balanced diet modelled on the Eatwell Guide essential.
Many UK adults eat too much fat, too much salt and not enough fruit and vegetables.

Elderly

Older adults need protein to repair worn out body cells. They need a good supply of calcium and Vitamin D in order to maintain healthy bones and teeth and iron to keep blood healthy.
In winter time, they may need a little more fat in their diet to provide body warmth. Fresh fruit and Vegetables are important for a good supply of vitamins and minerals.
Old people may have digestive problems or may have difficulty cutting food (because of arthritis) or chewing food (because of false teeth).
Examples of food suitable for the elderly = Soft foods – boiled potatoes, stew, soup, casseroles, one pot meals.
A good supply of fibre is needed to prevent constipation in the elderly who may be less active
Older adults may have a weaker sense of thirst. If necessary they should be helped and encouraged to drink regularly.

Pregnancy & Lactation

Because the body becomes more efficient at absorption during pregnancy, normal nutritional requirements apply until the last third of pregnancy, when some extra energy and calcium is required. Pregnant and lactating ladies should eat a varied diet rich in fresh fruit and vegetables and wholegrains (in line with the Eatwell Guide).

There are some foods to avoid:

- Unpasteurised milk products and undercooked meats/cured meat products – they may contain listeria which is harmful to unborn babies
- Pate, liver and liver products – due to high vitamin A content (Vitamin A is harmful to unborn babies if eaten in large quantities)
- Swordfish, marlin and shark as they are high in mercury which can be harmful to unborn baby

AC1.2 Special Diets: Compare the nutritional needs of different groups of people.

Medical Diets	Religious Diets	Ethical Diets
Nut & other allergies Must avoid particular allergen, otherwise an allergic reaction may occur. Serious allergic reactions can result in anaphylaxis and even death. The 14 common allergens which must be declared on menus and food packaging are: Celery, Gluten, Crustaceans, Eggs, Fish, Lupin, Milk, Molluscs, Mustard, Nuts, Peanuts, Sesame, Soya, Sulphites.	Halal (Muslim) Halal is Arabic for permissible. Halal food is that which adheres to Islamic law, as defined in the Koran. Haram is the opposite to Halal and describes food which is not permitted under Islamic law. Haram items that Muslims will not consumer include pork and all pork products as well a alcohol.	Vegetarian Vegetarians do not eat any flesh – they do not eat meat, poultry or fish/shellfish. Vegetarians do eat dairy products and eggs (lacto-ovo-vegetarian).
Lactose intolerance - Link to website here People who are lactose intolerant do not make the digestive enzyme which is needed to digest lactose (a milk sugar found in dairy products). If they consume lactose, they will experience digestive discomfort including cramps, excess wind and diarrhoea. Lactose intolerant people can consumer lactose free milk and dairy products or dairy alternatives. They must be careful to ensure they get enough calcium in their diet.	Kosher (Judaism) Judaism instructs its followers to observe a kosher diet, this means no pork. Kosher food also does not mix dairy products and meat in the same meal/course. Foe example, a burger must be served without cheese.	Vegan Vegans avoid consuming any animal products – including milk and dairy products, Protein is a nutrient which can be lacking in a badly planned vegan diet – vegans can eat wholegrain cereals, nuts, beans, lentils and tofu. Calcium may be lacking in a vegan diet – some vegans replace dairy with calcium fortified alternatives such as soya milk or almond milk.
Coeliac - Link to website here Coeliac disease sufferers react to the presence of gluten, a protein found in wheat flour and wheat flour products. They must avoid consuming gluten. Gluten is present in any wheat flour – alternatives such as	Hindu Followers of the Hindu religion do not eat Beef, as they believe it is a sacred animal.	Pescetarian Pescetarians do not eat meat, but will eat fish and shellfish.
Coronary Heart Disease - Find out more click here People who are diagnosed or at risk of Coronary Heart Disease are currently recommended to adopt a low sugar, low saturated fat, high fibre and fruit and vegetable Mediterranean style diet.	Buddhist Buddhists are usually vegetarian and do not consume meat or fish.	Flexitarian This is a new concept – followers of a flexitarian diet choose vegetarian or vegan diet meal choices for some parts of the week, in order to reduce their carbon foot print. Meat-Free Mondays campaign spearheaded this movement.

Level 1/2 Hospitality and Catering: Unit 2-2.1.2 - How cooking methods can impact on nutritional value



Boiling

- Up to 50% of vitamin C is lost when boiling green vegetables in water.
- The vitamin B group is damaged and lost in heat.

Poaching

- The vitamin B group are damaged in heat and dissolve in water.

Roasting

- Roasting is a method of cooking in high temperatures and so this will destroy most of the group C vitamins and some of the group B vitamins.

Frying

- Using fat whilst frying increases the amount of vitamin A the body can absorb from some vegetables
- Cooking in fat will increase the calorie count of food e.g deep fat frying foods.

Stir-frying

- The small amount of fat used whilst stir-frying increases the amount of vitamin A the body can absorb from some vegetables.
- Some vitamin C and B are lost due to cooking in heat for a short amount of time.

Steaming

- Steaming is the best cooking method for keeping vitamin C in foods.
- Only up to 15% of vitamin C is lost as the foods do not come into contact with water.

Grilling

- Using this cooking method can result in losing up to 40% of group B vitamins.
- It is easy to overcook protein due to the high temperature used in grilling foods.

Baking

- Due to high temperatures in the oven, it is easy to overcook protein and damage the vitamin C and B group vitamins.

AC1.4 Cooking Methods

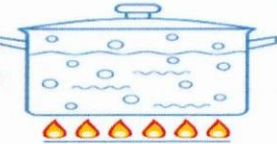
Nutrient Content Is Often Altered During Cooking

Cooking food improves digestion and increases absorption of many nutrients. For example, protein in cooked eggs is 180% more digestible than in raw eggs. However, several key nutrients are reduced with some cooking methods.

These techniques differ by water temperature:

- Poaching: Less than 82°C.
- Simmering: 85–93°C.
- Boiling: 100°C.

Boiling



~100°C

- Loss of vitamins
- Softens vegetables
- Gelatinisation happens making food like pasta softer and easier for the body to use.

Foods: Vegetables, fish, pasta, rice,

POACHING



- Enhance nutrients
- Add flavours
- Reuse nutrient stock

Foods: Eggs, fish, white meat chicken and fruit

STEAMING



- No direct heat
- Retains nutrients
- Adds flavour

Foods: Vegetables, fish, meat, rice, Chinese food

When the liquid from boiling is used in things like gravy, **100% of the minerals and 70–90% of B vitamins are retained.**

Steaming is one of the **best cooking methods** for **preserving nutrients, including water-soluble vitamins.**

Effect on nutrition

- Up to **50% of Vit C** is damaged when **green vegetables** are boiled.
- Vitamins **B1, B2 and B3** are damaged by heat and dissolve in the water.
- Some **calcium and sodium** is also lost as it dissolves in boiled water.

Starch (carbs) is gelatinised when cooked in liquid making it easier for the body to use.

- **Boiling fish** was shown to preserve omega-3 fatty acid content significantly more than **frying or microwaving.**

Effect on nutrition

- Vitamins **B1, B2 and B3** are damaged by heat and dissolve in the water.

Effect on nutrition

- Best method for conserving Vit C, as only 15% is lost as the food is not in direct contact with the water.

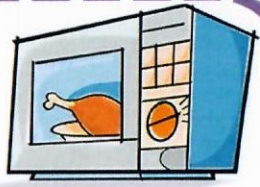


BOTTOM LINE:

While water-based cooking methods cause the **greatest losses** of water-soluble vitamins, they have **very little effect on omega-3 fats (essential fatty acids).**

AC1.4 Cooking Methods

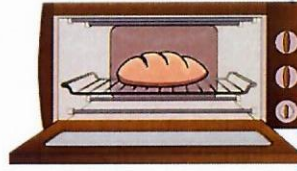
Roasting



- Dry heat
- Cooking solid foods
- Food is often coated with oil and fat

Foods: Vegetables, fish, potatoes, joints of meat,

Baking

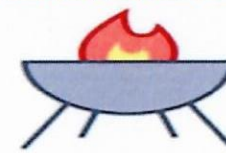


- Dry heat
- Not cooked in oil or covered with liquid

Foods: Cakes, muffins and bread

Nutrient Content Is Often Altered During Cooking

GRILLING



- Minimal oil
- Seal in flavour
- Reduce fat content

Foods: Fish, burgers, chicken, vegetables, seafood, halloumi, tofu, fruit.

STIR-FRYING



- Minimal oil
- Nutrients intact
- Great texture

Foods: Vegetables, chicken, fish, sea food.

Effect on nutrition

- High heat destroys most of Vit C.
- **Long cooking times** at high temperatures, **B vitamins in roasted meat may decline by as much as 40%.**

BOTTOM LINE:

Roasting or baking does not have a significant effect on most vitamins and minerals, with the exception of B vitamins.

Effect on nutrition

- Heat can over cook protein making it difficult for the body to use.
- Damage caused to vitamin B and C.

Effect on nutrition

- Up to 40% of Vitamin B can be damaged. Maintains other vitamin and minerals in grilling.
- High heat can easily over cook protein.

BOTTOM LINE:

Grilling and broiling provide **great flavour** but also **reduce B vitamins**.
Grilling generates potentially cancer-causing substances!

Effect on nutrition

- The fat used in cooking increases the amount of Vit A can absorb from some vegetables.
- Damage to Vitamin C and B is minimal due to short exposure to the heat.

BOTTOM LINE:

Sautéing and stir-frying improve the **absorption of fat-soluble vitamins**, but **they decrease the amount of vit C in vegetables.**

Tips to Maximize Nutrient Retention During Cooking

1. Use as little water as possible for poaching or boiling.
2. Consume the liquid left in the pan after cooking vegetables.
3. Add back juices from meat that drip into the pan.
4. Don't peel vegetables until after cooking them. Better yet, don't peel at all to maximize fibre and nutrient density.
5. Cook vegetables in smaller amounts of water to reduce loss of vitamin C and B vitamins.
6. Try to finish cooked vegetables within a day or two, as vitamin C content may continue to decline when the cooked food is exposed to air.
7. Cut food after rather than before cooking, if possible. When food is cooked whole, less of it is exposed to heat and water.
8. Cook vegetables for only a few minutes whenever possible.
9. When cooking meat, poultry and fish, use the shortest cooking time needed for safe consumption.
10. Don't use baking soda when cooking vegetables. Although it helps maintain colour, vitamin C will be lost in the alkaline environment produced by baking soda.