Angela Christaki
Ioannis Petrosian

Academic English for Nutrition & Dietetics

An English for Academic and Specific Purposes Course
for International Nutrition & Dietetics students
Upper-intermediate / B2 Level

DISIGMA PUBLICATIONS

Chapter 1 “Nutrients on Food Labels”

Discussion

Task 1 Discuss with your partners and find out:

1. What is the impact of nutrients on our health?
2. How do people receive nutrients?
3. What do you know about the new food label?
4. What does being an active reader mean?
5. Are you an active reader?

Academic reading skills
Selecting, Skimming, Scanning

Whether you are attending a university/postgraduate course or preparing to write an assignment or an essay, a considerable amount of reading is required. If you are not an active reader, it can be difficult to keep track of anything that needs to be read in a short period of time.

Active reading involves reading something with the intention of understanding and evaluating its importance to your needs. Consequently, you should practice reading quickly and effectively to select what would be useful to you.

Here are some methods for increasing your academic reading efficiency:

Selecting: If you have been given a list of texts to read, start with the ones you are required to read. If you have time later on, go ahead and read the ones suggested. Similarly, start with the most relevant texts from the ones you have collected.

Scanning: As soon as you have finished skimming, look through the text again and try to locate more specific information and answers to your questions. Typographical cues such as bullets, indenting, italics or boldface, key words, figures, percentages, charts or graphs etc can be useful.

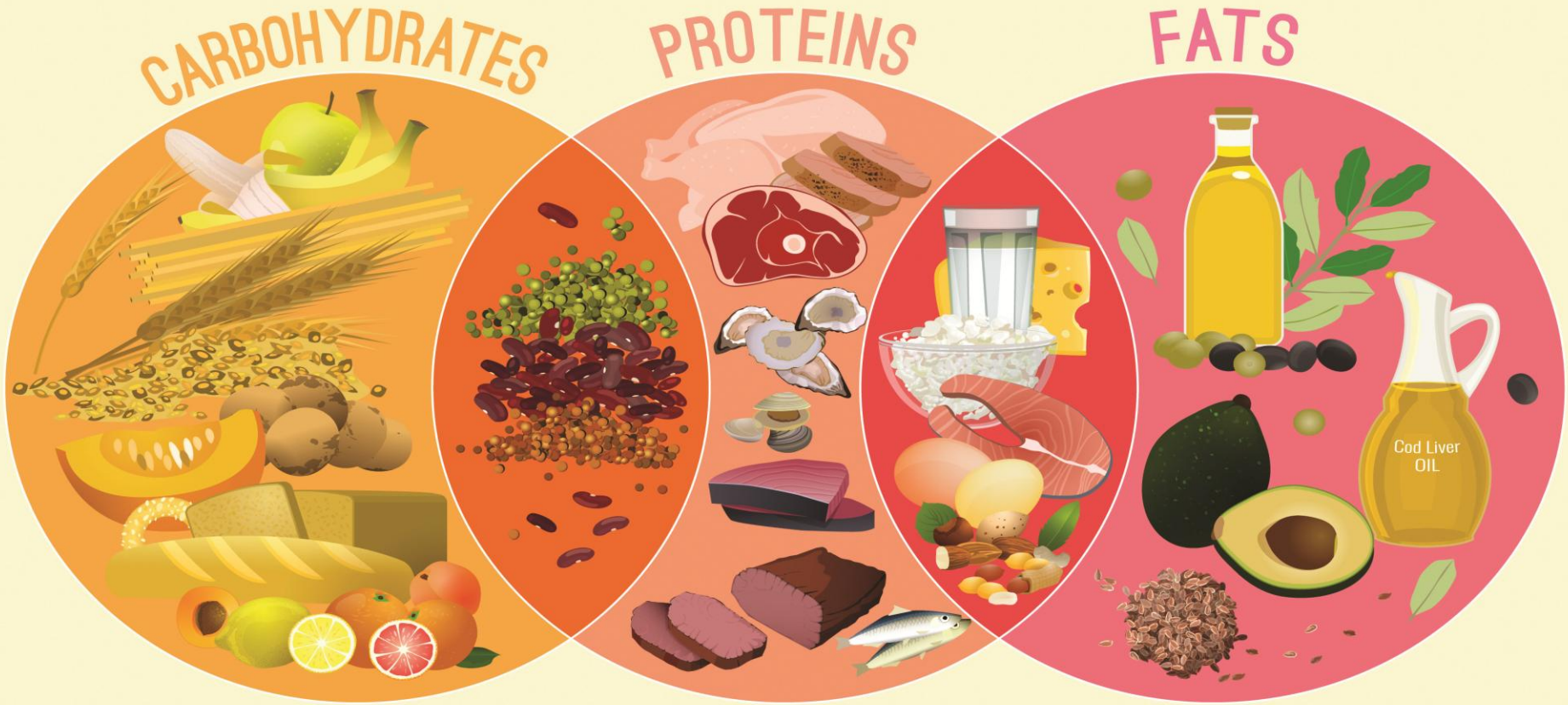
Skimming: Go through the text, attempting to get the gist; the general idea of what it is about. Take a look at the title, the author, the year it was written. Read the abstract or the summary (if it is an article, a thesis or a piece of research), the preface (if it is a book), the headings and sub headings, chapter titles or chapter overviews. Read the introduction and the conclusion as well as the topic sentence of each paragraph. All of the above information will enable you to decide whether you need to read the text.

Reading Nutrients for Good Health

The human body needs the right "mix" of nutrients (**micronutrients** and **macronutrients**) for good health, growth, reproduction and perfect function. Although micronutrients such as **vitamins** and **mineral**s are only needed in small doses, their lack may affect the body's health. Macronutrients on the other hand such as **protein, carbohydrates** and **fats** as well as **water,** are needed in larger amounts. Maintaining a balanced diet and consuming the recommended daily amounts of nutrients**,** can promote the body's good function. Another essential food group **is phytonutrients** – the beneficial nutrients found in colourful plants that protect the body from diseases. The majority of people in developed or developing countries get the recommended amounts of most vitamins and minerals to meet their needs.

MACRONUTRIENTS

A SIMPLE GUIDE TO MACROS



However, quite a lot of people barely receive the appropriate amounts of vitamin D, B12, calcium, iron, and potassium. These nutrients are considered **"nutrients of public health concern"** as low intakes are associated with potential health risks. For example, diets that are high in vitamin D and calcium, iron, and potassium can minimise the risk of developing certain health issues such as osteoporosis, anaemia, and high blood pressure. The Nutrition Facts label on packaged foods has been updated to reflect updated scientific information, including information about the link between diet and chronic diseases, such as obesity and heart disease. A description of the most important nutrients as they appear on food labels follows:

Vitamins are organic substances that are naturally present in many plant and animal products; therefore, people get them from plant and animal foods. Human bodies also produce vitamins D and K, which are vital for supporting all bodily functions, fighting against diseases and staying healthy.

Additionally, vitamins can reduce the risk of prostate cancer, boost the **immune system** and speed up recovery from illness.

Minerals are inorganic substances that are found naturally in soil and water, where they are absorbed by plants. They promote many bodily functions: metabolism regulation, hydration and building strong bones and teeth. Following the food chain, plants are eaten by people and other animals **consecutively**. Humans obtain minerals from both the plant and animal products they consume.

Total Carbohydrates are found in plant foods and dairy products.
Simple carbohydrates are sugars composed of one or two molecules.
Complex carbohydrates consist of long chains of sugar molecules..

I **Dietary fibre** is a form of carbohydrate **made up of** several sugar molecules that are **bound to** one another and therefore, difficult to digest in the small intestine. It can improve **bowel** movement frequency, lower blood glucose and cholesterol levels, and decrease **calorie intake**. It includes naturally existing fibres in plants.

II **Total sugars** include naturally occurring sugars in food and those added during food processing. They are the smallest type of carbs that the body can quickly digest and consume. Sugars found naturally in foods such as dairy products, grains, and vegetables are contained in total sugars, as are processed sugars.

The New Food Label

Protein is found in plant and animal foods. Each gram of protein provides 4 calories. It is a component of every cell in the human body and is necessary for proper growth and development. Protein helps the body to **build up** and repair cells and body tissue and it is a major part of skin, hair, nails, muscle, bone, and internal organs. It is essential for blood **clotting,** fluid balance, **immune response**, vision, and the production of hormones, antibodies, and enzymes. Protein is **made up of** smaller units, which are called amino acids and are linked to one another in long chains.

Total Fat is found in animal and plant foods providing energy (one gram of fat provides 9 calories). It also stores energy **in excess of** what the body needs and serves as a **subsidiary** energy source when calories from carbohydrates are **used up**. It is a basic part of **cell membranes** and is necessary for proper growth. Fat supports key body processes, such as **blood clotting**, nervous system function, reproduction, and immune response and is essential for healthy skin and hair.

Cholesterol is a **waxy**, fat-like material, in all cells of the body, which is both created by the body and absorbed from food. It is a structural component of cell membranes and necessary for the production of **bile** that aids in the digestion of fat in the intestine. Cholesterol is also used for making vitamin D and certain hormones, like oestrogen and testosterone.

Low-density lipoprotein (LDL) cholesterol, often called "bad" cholesterol, is the form in which cholesterol is carried from the liver to arteries and body tissues. High levels of LDL cholesterol in the blood increase the risk of cardiovascular disease.

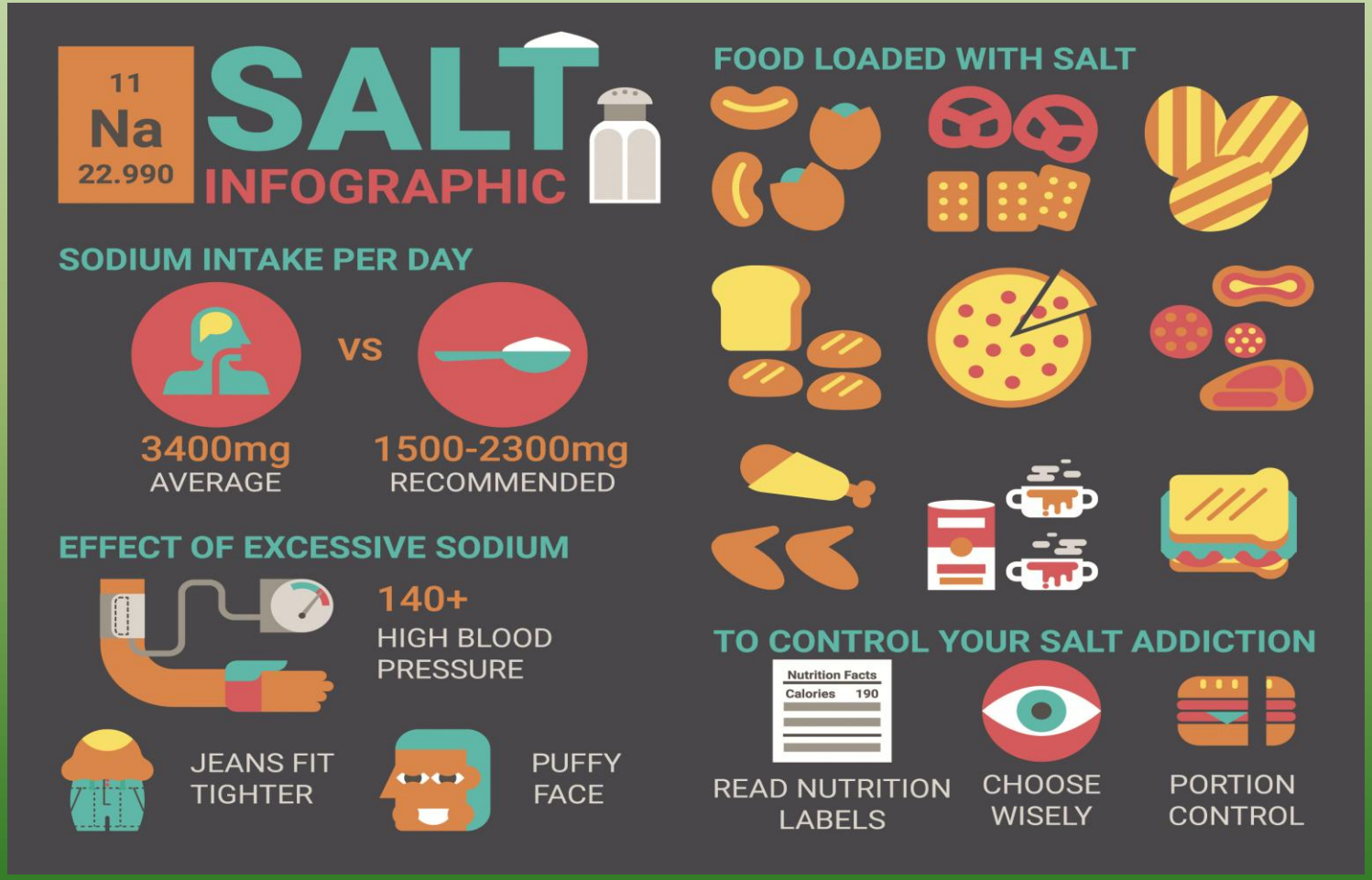
High-density lipoprotein (HDL) cholesterol, often called "good" cholesterol, is the form in which cholesterol travels from body tissues back to the liver. High levels of HDL cholesterol in the blood can reduce the risk of developing cardiovascular disease.

Water has no colour, taste, or odour. It is considered as the most essential nutrient as it preserves the health of all cells. It is necessary for keeping the flow of blood strong enough to allow it to circulate into blood vessels. It is estimated that most people can only live for 7 days without water.

Sodium is an essential mineral that the human body requires in comparatively limited quantities. It is essential for fluid equilibrium, muscle contraction, and nervous system work.

The words "sodium" and "salt“ are not synonyms. Sodium is a mineral that is present in salt as one of its chemical elements. Salt (sodium chloride) is a naturally occurring crystal-like compound that is abundant in nature. As a food ingredient, it has a variety of applications, including curing beef, frying, thickening, retaining moisture, preserving as well as taste enhancement.

Sodium is a nutrient to get less of



Task 5. Match the words with their definitions

	Bile		a. Highly-processed, pure
	Particles		b. The amount of something once compared to the whole
	Immune system		c. The physical nature of a substance
	Fortified		d. Secondary, Supplemental
	Molecule		e. When a half solid mass or lump is formed from a liquid (usually blood)
	Clotting		f. The smallest unit of a chemical substance
	Subsidiary		g. Enriched, Made stronger
	Consistency		h. The cells and tissues used by the body to protect itself from infection
	Proportion		i. The smallest unit of something
	Refined		j. A yellowish liquid produced by liver

Task 6 Match the phrasal verbs with their definitions

use up	a. assemble something by putting parts or material together
phase out	a. to finish something so that nothing is left
break down	a. to compose a whole, to comprise
make up of	a. gradually stop using or doing something
build up	a. to decompose, to separate something into pieces

Making effective Academic Presentations

Content Making a presentation is like writing an essay. It should have an introduction, main body and a conclusion, linked with appropriate cohesive devices to enhance flow and promote comprehension.

Know your audience Find out the level of knowledge, the age etc. of the people you are addressing so that you will know what they need to learn from you and if they are familiar with subject-specific terms or you need to provide explanations.

Introduce yourself and the topic Let your audience know who you are, the name of your company/university department, your position within it, the title of your presentation and provide its overview.

Introduction You could start with a question, a picture, a strong or controversial fact, anything that may attract the audience.

K.I.S.S Keep It Short and Simple. The more information you load your presentation with, the less the audience will remember. The main points should be conveyed through bullets, clear visuals, graphs, pictures etc, which you will "interpret", rather than read out, to relay information.

Signposting Use appropriate words and phrases to "guide" your audience through your presentation. Rhetorical questions can act as sequencers to what is going to follow

Provide citation during the presentation and a list of references at the end

Conclusion Finish your presentation with a summary to help your audience leave with a clear understanding of its main points. You could also pose a question for further research

Style

- Be yourself
- Engage your audience
- Less is more
- Practice makes perfect

Chapter 2 Food Groups

Discussion

Task 1 Discuss with your partners and answer the questions:

1. Name some food groups:
2. What do you know about the “Choose My Plate” plan?
3. What are the four “Food Safety Recommendations”?
4. Can you describe the process of making chicken soup?
5. What does the topic sentence of each paragraph contain?

Academic Speaking Skills
Describing a Process

Describing a process can include describing how something works, is created or produced. Processes may be either natural or man-made.

Before beginning to describe a process, it is a good idea to clarify **what** you're going to describe and (possibly) **why**. You may also list the **number of steps**. In this way, you assist the reader/listener in understanding the order and in "embarking" on what they are about to read or hear (or listen to).

To explain the various phases of a procedure, appropriate sequencers must be used:

- First, First of all / The first step is, to begin
- Secondly, Thirdly
- Next, Then
- After that
- Afterwards
- Meanwhile
- Subsequently
- Later
- Finally, in the final step/stage, Last, Lastly

e.g “How to make filtered coffee”

Coffee is something to look forward to after a long day's work. I'm going to explain **how to make the best filtered coffee**. It is a simple task with **four stages**.

To begin, place a coffee-filter in the filter basket.

Then, fill the coffee machine with 2 cups of water.

After that, place three tea spoons of coffee inside.

Next, plug in and switch on the coffee machine.

Finally, wait until the coffee is ready. Enjoy!

Task 2. Describe the process of soup making

You could start:

Grandma's recipe for soup making might be useful when you've caught a cold. I'm going to explain……

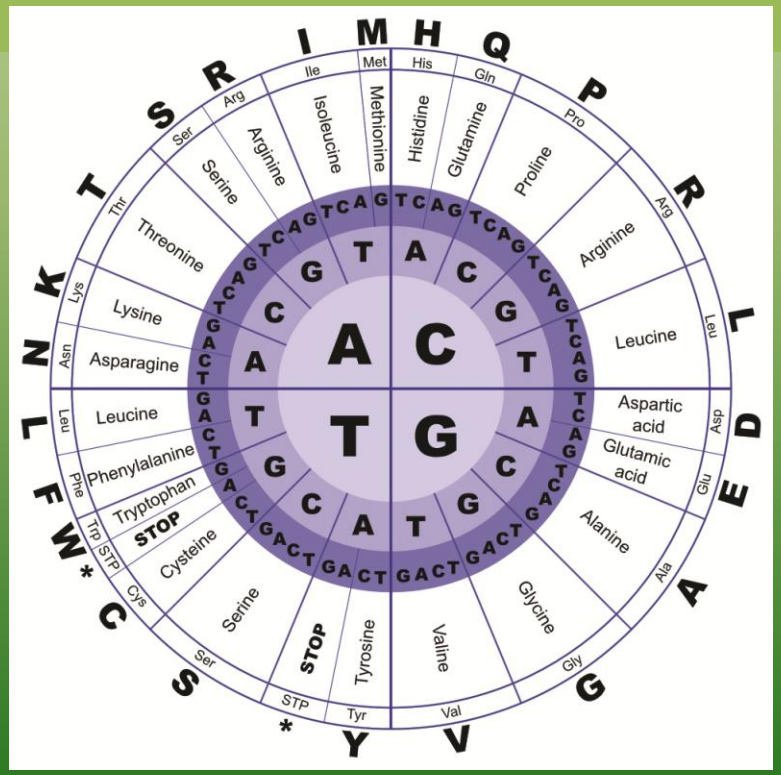
……

……

……

Grammar: Another way to describe a process is by using passive voice

Subject + Verb to be +Past participle of the verb



Subject	Verb to be	Past Participle of the verb
Cocoa beans	(**is/are**) present simple (**is/are being**) present continuous (**was/were**) past simple (**was/were being**) past continuous (**has/have been**) present perfect simple (**had been**) past perfect simple (**will be**) future simple (**will have been**) future perfect simple (**be**) infinitive (**May/might/ could / should /must/can't be/ have been**) modals	Past participle of regular verbs (verb + -ed) Past participle of (irregular verbs) **cleaned / sold**

Task 3. Read the following recipe. Then use passive voice to rewrite it

Omelette: First, crack the eggs and whisk them in a bowl.
Then, add salt and chopped red and green pepper.
Next, heat the pan and add some olive oil.
After that, pour the mixture into the pan and wait until a semi solid mass begins to form.
Finally, fold the omelette in half and sprinkle some grated cheese on top.

- First, the eggs…… (crack) and…… (whisk) in a bowl.
- Then, salt and chopped red and green pepper …… (add).
- Next, the pan ……(heat) and some olive oil …… (add).
- After that, the mixture ……(pour) into the pan.
- Finally, as soon as a semi solid mass …….(form), the omelette……..(fold) in half and some grated cheese…….. (sprinkle) on top. It is ready to ……. (serve). Enjoy!

Food Groups

- Foods are classified according to the main nutrients they contain. Consuming a wide range of healthy items from each food group in the recommended quantities and on a regular basis, is the key to healthy eating. However, it is not necessary to eat from each food group at every meal. In fact, some types of food should only be consumed a couple of times a week.

Vegetables

Healthy dietary patterns include a variety of vegetables from all five vegetable subgroups: dark green, red and orange, beans and peas, starch, and other. They can all include fresh, frozen, canned, and dried options in cooked or raw forms, and 100% vegetable juices. Vegetables in their **nutrient-dense** forms have limited additions such as salt, butter, or creamy sauces. They are generally consumed in forms with additional sodium either from salt added in cooking or added sauces such as soy sauce or bottled stir-fry sauces. About 45 percent of all vegetables are eaten as a separate food item; about 40 percent as part of a mixed dish and the remainder are mostly consumed as snack foods and **condiments**.

Starchy Vegetables: All fresh, frozen, and canned starchy vegetables: for example, breadfruit, burdock root, cassava, corn, jicama, lotus root, lima beans, plantains, white potatoes, salsify, taro root (dasheen or yautia), water chestnuts, yam, and yucca.

Other Vegetables: asparagus, avocado, bamboo shoots, beets, bitter melon, Brussels sprouts, cabbage (green, red, napa, savoy), cactus pads, cauliflower, celery, chayote, cucumber, eggplant, green beans, kohlrabi, luffa, mushrooms, okra, onions, radish, seaweed, snow peas, summer squash, tomatillos.

Dark-Green-Leafy Vegetables: amaranth leaves, bok choy, broccoli, chamnamul, chard, collards, kale, mustard greens, poke greens, romaine lettuce, spinach, taro leaves, turnip greens, and watercress

Red and Orange Vegetables: pumpkin, carrots, red or orange bell peppers, sweet potatoes, tomatoes, 100% tomato juice, and winter squash.

Beans, Peas, Lentils: All cooked from dry or canned beans, peas, chickpeas, and lentils: for example, black beans, black-eyed peas, bayo beans, chickpeas (garbanzo beans), kidney beans, lentils, lima beans, mung beans, pigeon peas, pinto beans, and split peas. Does not include green beans or green peas.

Fruit Whole fruits, dried fruits and 100% fruit juice are rich in fibre and an excellent supply of essential vitamins and minerals. They also contain **an array of** antioxidants, called flavonoids, which are **beneficial to** one's health. Most fruit is naturally low in fat, sodium, and calories, as well **as a source of** several vital nutrients including potassium, vitamins A and C, folate, and dietary fibre. Consequently, it may lower a person's risk of developing heart disease, cancer, **inflammation**, and diabetes. When consuming juice, it should be 100 percent juice and mostly **pasteurised**, or 100% juice mixed with water (no extra sugar added).

Apples, pears, bananas, berries, citrus fruit,cherries, dates, figs, grapes, guava, mangoes, melons and watermelon nectarines, papaya, peaches, pears, persimmons, pineapple, plums, pomegranates, and raisins.

A wide variety of fruits are available in the marketplace, some of them **year-round** and others **seasonally**.

- **Grains** are excellent sources of nutrients, such as complex carbohydrates, fibre, vitamins and minerals. Whole grains should be included in balanced dietary habits, while **refined grains** should be reduced. Whole grains should **account for** at least half of overall grain intake and people who consume processed grains should **opt for** enriched ones. Also, individuals who eat all of their grains in whole form should add certain folic acid-enriched ones to their diet.

- **Dairy** products, such as fat-free and low-fat (1%) milk, tofu, and cheese, are part of a healthy diet, while lactose **intolerant** individuals may prefer low-lactose or lactose-free ones. Dairy substitutes, fortified soy drinks and soy yogurt are included in the dairy category as they are similar to milk and yogurt in terms of nutritional composition and use in meals.

Other products marketed as "milks" but produced from plants can be consumed as a source of calcium. However, they are not classified as dairy products.

Protein Foods

- Healthy **dietary patterns** include a variety of protein foods in nutrient-dense forms. The protein food group **comprises** a broad group of foods from both animal and plant sources, and includes several subgroups: meats, poultry, and eggs, seafood and nuts, seeds, and soy products. Protein is also contained in dairy products. Beans, peas, and lentils belong both to the protein food and to the vegetable food group. The fat content of meat and poultry varies and includes both fresh and processed types. Intake of meat and poultry should be fresh, frozen, and in lean types (e.g. chicken breast or **ground turkey**) rather than processed meats (e.g. hot dogs, sausages, ham, **luncheon meats**). In vegetarian diets, protein can be obtained from plant foods or soy products, bans, peas, and lentils; nuts and seeds; and whole grains. By adding dairy products and eggs, the diet is made lacto-ovo vegetarian.

Beans, peas, and lentils" or "legumes (beans and peas)" or Pulses

They are the dried **edible** seeds of legumes. Beans come in a variety of shapes and sizes, including kidney beans, pinto beans, white beans, black beans, lima beans, and fava beans. Dried peas (such as chickpeas, black-eyed peas, pigeon peas, and split peas) and lentils are also included. Since beans, peas, and lentils have a similar nutrient profile to foods in both the vegetable and protein groups, they can be classified either as vegetable or as protein food when following suggested intakes. Green peas and green (string) beans are not included in the beans, peas, and lentils subgroup because their nutritional value is closer to that of vegetables. Green peas, which are not dried before eating, are categorised as starchy vegetables, while green beans are classified as other vegetables, along with onions, iceberg lettuce, celery, and cabbage.

Oils

Oils should be included in a balanced diet because they contain essential fatty acids. Oils that are widely used include canola, maize, almond, peanut, safflower, soybean, sunflower and avocado oils.

Tropical plants, such as coconut oil, palm kernel oil, and palm oil, are not classified in the oils list because they have a higher proportion of saturated fat than other oils. Cooking with vegetable oil instead of saturated fats like butter, is one way to make one's diet healthier.

However, certain foods, such as cakes and sweet snacks, that are made with oils rather than saturated fat-rich fats are also high in added sugars and hence not a nutrient-dense food option.

Olive oil, which is largely produced and consumed in the Mediterranean Basin, is a **liquid fat** extracted from olives after mechanical or physical pressure. It is commonly used in cooking, cosmetics, pharmaceuticals etc. and it protects against oxidation of blood lipids and maintains healthy.

According to the International Agreement on Olive Oil (IOC) standards, the classification of olive oils is:

- Extra Virgin Olive Oil: that has a free acidity of no more than 0.8 grams per 100grams
- Virgin Olive Oil: that has a free acidity of no more than 2 grams per 100grams
- Ordinary Virgin Olive Oil: that has a free acidity of no more than 3.3 grams per 100 grams
- Free acidity is an index of the quality of olive oil that is defined as a percentage of grams of free fatty acids in 100 grams of oil.

Beverages

Calories and nutrients are key d**eterminants** when considering beverages in a balanced dietary plan. Calorie-free beverages, especially water, and beverages that provide beneficial nutrients, such as fat-free and low-fat milk and natural juice, should be the primary beverages included in a healthy dietary pattern. Coffee, tea, and flavoured waters are also options, with little, if any, sweeteners or cream. Caffeine is a dietary component that functions as a stimulant in the body and it is a substance that is Generally Recognised as Safe (GRAS) in cola-type beverages by the Food and Drug Administration (FDA). For healthy adults, the FDA has cited 400 milligrams of caffeine per day as an amount not generally associated with dangerous, negative effects. Cocoa is rich in nutrients and contains protein, fat, carbohydrates and flavonols, which prevent high blood pressure.

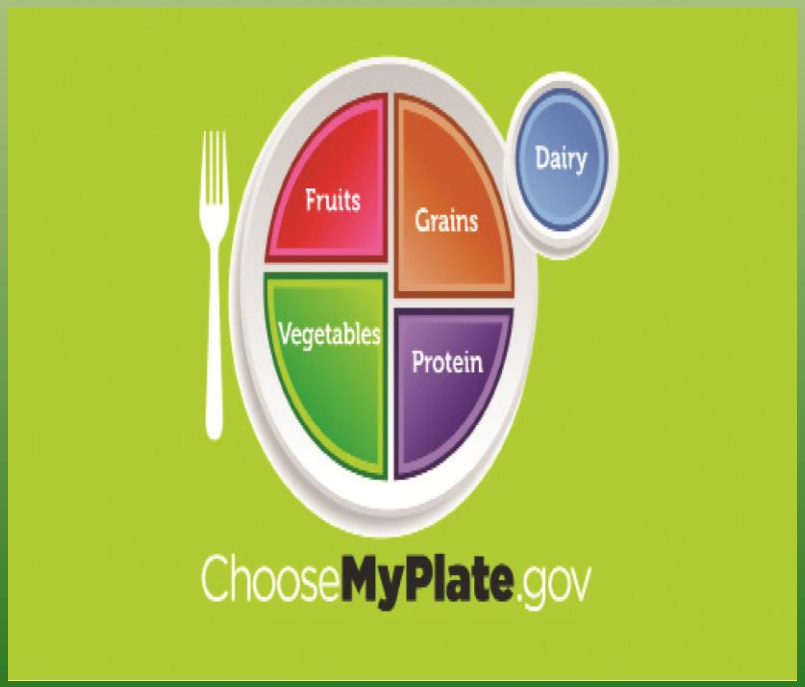
Food Safety Recommendations
Clean, Separate,Cook & Chill

- An important part of healthy eating is keeping food safe. Individuals can keep food safe by following safe food handling practices. Four basic food safety principles work together to reduce the risk of **food borne** illness:
- 1: **Clean**: Wash hands and surfaces often.
- 2: **Separate:** Separate raw meats from other foods.
- 3: **Cook:** Cook food to safe internal temperatures.
- 4: **Chill**: Refrigerate foods promptly

Listening task

https://www.disigma.gr/products/academic-english-for-nutrition-and-dietetics/videos/choose-my-plate-dietary-guidelines

Listen to the Nutritionist-Dietitian explaining how "Choose my Plate works.



Answer the questions

- According to the "Choose my Plate" guidelines, fruit and vegetables should count for over half of the plate. Which one should be slightly more?
- Why is over-steaming vegetables not recommended?
- How are antioxidants from fruit helpful?

Task 5 Match the words with their definitions

1. Edible
2. Nutrient –dense
3. Condiment
4. Inflammation
5. Pasteurized
6. Game meat
7. Refined
8. Intolerant to
9. Luncheon meat
10. Determinant

a. Spice, seasoning or sauce
b. Precooked or cured meat that is sliced and served cold or hot
c. Cannot digest something
d. Treat something to kill germs
e. Contributing factor
f. Flesh of any wild animal or bird
g. Infection and swelling
h. Very nourishing
i. Processed
j. Something that can be eaten

Paragraph Writing (the acronym M.E.A.L.)

A paragraph is a group of sentences expressing a complete thought. It is usually five to seven sentences long, but it can be longer or shorter. When starting a new paragraph indent or skip a line but do not do both.

- **Main Idea** is the paragraph's "topic sentence" that explains what the writer is going to deal with in the paragraph.
- **Evidence** supports the main idea. Everything taken from other sources must be cited to ensure credibility.
- **Analysis** of the evidence provided earlier, under the perspective of the writer. Based on the evidence, the writer tries to persuade the readers about the validity of what was mentioned earlier
- **Link** provides a small summary of what was explained earlier and acts as a "bridge" with what follows. In this way and with the use of appropriate signaling words, flow is enhanced and readers are smoothly guided to the next paragraph.

Chapter 3 Human Anatomy

Discussion

Task 1

- Name some of the systems of the human body
- In which body systems do the organs in the box belong to? Ask each other questions to find out.

follicles, cartilage, keratin
atrium, spleen, dendrites,
medulla oblongata,
bronchioles, cervix, womb

- How can you make your paragraphs easy to follow and understand?
- What is a prefix/suffix? Can you identify medical terms?
- Can you form plurals of medical terms?

Academic Writing
Parallelism

Parallelism is the method of joining together several words or phrases such as infinitives, verbs, gerunds etc., to indicate that the concepts discussed are of similar significance. Parallel structures are joined with coordinated conjunctions such as “and” or “or”. This technique is used to make our sentences or paragraphs clear, academic and easy to follow.

Tip: Never mix forms

Incorrect: Three things that can help a woman during pregnancy are good nutrition, taking adequate supplements and to exercise regularly.

Task 2 Apply parallelism to correct the sentences:

- Good health for older adults can be achieved by exercising, healthy food and to think positively
- Three ways to maintain good relations in the family are patience, to be calm and avoiding fighting
- Homeostasis is achieved by keeping the body's electrolyte levels stable and the filtering of waste from the blood
- The skin is the largest organ in the body, which protecting it against infections, fluid balance maintenance and synthesises vitamin D.
- The pericardial cavity contains a fluid which serves as a lubricant and allowing the heart to contraction and relax with minimum friction.

The human body and its systems

- The human body is a complicated network of cells, tissues and organs that combine together to make life possible. The major systems responsible for its function are: **Integumentary**, **Skeletal, Muscular, Cardiovascular, Nervous, Endocrine, Lymphatic, Respiratory, Digestive, Urinary, Reproductive.**
- The integumentary, skeletal, muscular, cardiovascular and nervous systems create an **infrastructure** that protects and assists the other/remaining systems.

The integumentary system

It surrounds the whole body and protects it against environmental "attacks". It consists of the skin, hair, nails, sensory receptors and exocrine glands. The skin is the largest organ in the body, which protects it against infection and extreme temperatures, maintains fluid balance and synthesises vitamin D. It comprises three layers: epidermis, dermis and hypodermis/subcutis. Epidermis is the outer, protective layer. Dermis is underneath and this is where hairs are rooted, and sweating, blood circulation and sensations of touch take place. Hair starts growing from the hair follicles found in dermis and is made of keratin. Hypodermis or subcutis is composed mostly of adipose and fatty tissue. Sweat and oil glands secrete sweat and oil, through which waste is excreted from the body.

Glands of the Human Body

- **Sebaceous glands** produce oil into the hair follicles
- **Subcutaneous glands** produce an oily secretion called **sebum**
- **Ceruminous glands** produce wax in the ear canal for its protection
- **Sudoriferous glands** produce sweat
- **Mammary glands** produce milk

The adult skeletal system

It is a framework of over 206 bones. It holds the body together, gives it shape and protects its organs and tissues. Bones are hard outside but at the centre there is a soft substance, where blood cells are made, called bone marrow. The place where two bones meet (knees, elbows) is called a joint. Joints contain a smooth material called cartilage, which, along with synovial fluid, allows the bones to rub against each other smoothly. Bones are made of living cells that assist them in growing and repairing themselves when injured. The skeleton also provides anchor points for the muscular system. It includes three types of muscles, attached to the bones with tendons. Skeletal, smooth and cardiac muscles are found throughout the body to facilitate movement. There are about six hundred and forty muscles in the body and they are divided into voluntary and involuntary ones. The former are under the individual's conscious control, helping them to move the body, whereas the latter are not and are found in the stomach, the heart, the intestine etc.

The cardiovascular system

Also called the circulatory system. It delivers oxygen, white blood cells, hormones and nutrients throughout the body. It is a pipeline that includes the heart, blood and blood vessels. The heart is a four-chambered pump that propels blood through the vessels. It has two sides, each one consisting of two chambers. The best known function of the circulatory system is the transporting of inhaled oxygen from the lungs to the body's tissues and the removal of carbon dioxide in the opposite direction to be exhaled. Basically, oxygen-poor blood returns to the right side of the heart, where it is pumped to the lungs. In the lungs, blood extracts oxygen and releases carbon dioxide. The oxygen-enriched blood then returns to the left side of the heart and this part of the system is called the pulmonary circuit.

The nervous system

The nervous system is a network of nerve cells that the body uses to transmit information and organise bodily functions. It is comprised of two parts: the central nervous system and the peripheral nervous system. The central nervous system comprises the brain; the hub, the spinal cord, the brainstem and the many cranial and spinal nerves that emanate from them. The brain lies protected inside the skull and controls all the body functions by receiving and sending messages through the nerves. It has three major parts, the biggest of which is called the cerebellum, and consists of two hemispheres: the left and the right. The peripheral nervous system includes all the nerves that go from the skin, muscles and organs to the spinal cord and brain. Some nerves carry messages to the brain (sensory nerves) whereas other nerves carry messages from the brain (motor nerves). The peripheral nervous system also controls some automatic actions like breathing, digestion etc.

The endocrine system

It is a system of glands, all of which use information carried by the nervous system to assist the body's processes. It regulates the function of all cells, tissues and organs, and consists of many glands. Each gland of the endocrine system produces chemicals that are called hormones and each hormone has a different job. Glands are spread throughout the body and a lot of them are controlled by a little gland near the base of the brain called the **pituitary gland**, which produces growth hormone. Thanks to this neural connection, endocrine glands are aware of the amount of hormones and other chemicals they need to produce. These chemicals are then distributed all over the body through the cardiovascular system. Other glands are the **adrenal glands** and the **pancreas** which is an organ acting as a gland. The former, secrete adrenaline along with neurons in the **medulla oblongata** and the latter has both an endocrine and a digestive, **exocrine** function.

The lymphatic system

It is a subsystem of the **immune system**, which uses neural **circuits** to **relay** information about infected regions of the body and then sends out healing agents such as white blood cells through the bloodstream. It is actually a **drainage** system that extracts waste fluid from body tissues and returns it to the bloodstream. It is also a subsystem of the circulatory system. The circulatory system's primary function is to provide oxygen and nutrients to body tissues while also eliminating waste. This exchange takes place in the smallest blood vessels, known as **capillaries**.

The respiratory system

It is a group of passageways and organs that **extract** oxygen from the air we breathe. Air enters the body through the **nasal cavities,** travels down the throat and is then transported to the lungs. The lungs, in turn, **extract** oxygen from the body and then **expel** a **by-product** called carbon dioxide while **exhaling**. It consists of the nose (nasal cavity), the mouth (oral cavity) and the pharynx, and connects the respiratory openings to the larynx and oesophagus, the trachea and then to the bronchi, which merge into smaller tubes called **bronchioles.** The bronchioles connect to tiny air sacs called **alveoli,** which are surrounded by **capillaries,** and finally comes the **diaphragm.** The entire process is called **respiration** and occurs about 16 to 20 times per minute.

The digestive system

- It is an approximately thirty foot series of organs that convert food into fuel. Food enters the system through the mouth then moves into the **oesophagus**, the s**tomach** and **the intestines.** Nutrients are absorbed into the body while **solid waste** is expelled through the **anal canal,** the end of the digestive tract, as **faeces.** Further knowledge about the digestive system is provided in the following chapter.

The urinary or excretory or renal systemT

It helps the body to maintain **homeostasis** by keeping the body's electrolyte levels stable and by filtering wastes from the blood. This waste is sent through the blood vessels into the kidneys and then it is **expelled** as urine. The system consists of two kidneys, two **ureters,** the **bladder,** the urethra and the **urinary meatus**. The two bean-shaped kidneys are located on each side of the **vertebral column** and are protected in the **adipose capsule,** which is a tough, fibrous layer of perirenal fat. They are suspended, which means that they are not attached to any other organs. Each kidney is divided into two main sections, the **cortex** and the **medulla.** The cortex is the outer section of the kidney and contains nephrons. It purifies the blood by removing excess water, salt, sugar, metabolic products and other substances so as to maintain the optimal pH and thus, “homeostasis”.

The reproductive system

It is responsible for creating life. The primary organs involved differ between sexes with **ovaries, fallopian tubes, the uterus and vagina** found in women and **testes and a sperm channel** found in men. As soon as **fertilisation** occurs, the organ systems will be formed and then a child is born. The female reproductive system has two **ovaries** which contain the **egg cells**. One egg cell is released each month out of either of the ovaries. The egg then travels through the **oviducts or fallopian tubes** to the uterus. The uterus, or **womb**, is where the baby develops, at the end of which is the **cervix**. Further down is the **vagina**, where the man's **penis** enters during sexual intercourse. The male reproductive system has two **testes**, which produce testosterone and sperm, and the penis, which is the organ that carries urine and sperm out of the body. Connecting the testes to the penis is the sperm duct, which is a tube that transports sperm cells from the epididymis out of the body.

Task 4 Match the words to their definitions

Pipeline
Lubricant
Friction
Exocrine
Drainage
Swelling
Tubule
Fertilization
Infrastructure
Emanate
Adipose
Eliminate
Hub
Exhale
Inhale

A. Breathe in
B. The underlying base or foundation of a system
C. Fatty
D. The act of impregnating an animal or vegetable
E. A substance used to reduce friction between two objects
F. natural or artificial removal of surface water from an area
G. To eject, to remove
H. To come from a source
I. Breathe out
J. The rubbing of an object or surface against another
K. A channel through which sth is conducted or transmitted
J. Bloating
M. Producing external secretions, are released through a duct
N. A small pipe
O. The central part where many routes meet

Listening task

Watch the video and fill in the blanks https://www.disigma.gr/products/academic-english-for-nutrition-and-dietetics/videos/how-does-your-immune-system-work-emma

What does the immune system consist of? 1).....2)…….. and 3)……

Leukocytes are defensive 4)… blood 5)…… and are formed in our bone 6)……

Leukocytes are divided into 7)…… and 8)…

Antibodies are special 9)……

Each antigen connects only to one 10) ….. to destroy the invading cells

Fever and swelling are processes that help the 11) ……. response because bacteria and viruses do not reproduce and 12)… in warm environments.

Swelling attracts 13)….that consume the invaders and the damaged cells

By developing long term immunity when B and T cells identify antigens, they "remember" it so when a threat occurs again, the cells produce the right 14) …to tackle it immediately

Autoimmune diseases trick the immune system and make it 15)…… its own healthy cells

Some autoimmune diseases are 16) …., 17)…… & 18) ……..

Why is the immune system important?

19) ……

Academic Vocabulary: Latin/Greek Plural

Many nouns related to medical terms come from Latin and Greek; thus, they do not follow the rules for pluralisation applied to English words. Below are some rules to help you deal with medical term plurals. As with every rule, there are some exceptions.

Academic Vocabulary Skills: Formation of Medical Terms

Precision and specificity are important in medicine. Medical or physical conditions and diseases must be thoroughly described in order for communication among doctors all over the world to be effective. Morphology of medical terminology consists of a **prefix,** a **root word** and a **suffix,** most of which are of Greek or Latin origin

A **Prefix** is a word or a group of letters that is placed before the word root to change or modify its meaning. Each prefix has a different meaning. A **Suffix** is a letter or a group of letters that is placed after the word root to change its meaning or function.

Academic Writing: Paragraph Coherence & Cohesion

Each paragraph has a separate main idea, stated in the topic sentence, which needs to be analysed and exemplified within its limits. All ideas should be closely related to each other and logically and progressively sequenced (coherence). Additionally, the transition from one concept to the next should be smooth (cohesion). Coherence and cohesion can be achieved with the use of appropriate cohesive devices (to enhance clarity and indicate the relationship between sentences) along with pronouns, synonyms and /or explanations (to avoid repetition).

Chapter 4 The Digestive and Endocrine Systems

Discussion Task 1

- What is the main purpose of the digestive system? Name some of its organs
- What is the main purpose of the endocrine system? Name some of its organs
- What are hormones? Name some. What are they used for?
- What type of information is put in a chart or a diagram? How is information presented?
- When can “which” and “who” be omitted in a sentence?

Academic Writing & Speaking Skills
Describing Charts & Diagrams

While writing an assignment, article, lab report etc, you may have to include information in the form of a chart, a table or a diagram. Similarly, while presenting your data or research you may have to explain the charts and graphs included.

- **Tip:** never express your opinion or make personal interpretations.

Steps

- introduce the chart using the words: figure or table, and its number and title.
- provide an outline (a summary of the main trends)
- provide details (describe changes)

	Incidence	Prevalence	Mortality
2010	48	65	7
2005	50	70	8
2000	56	79	8,5
1998	53	73	8
1995	54	82	10
1990	53	90	13

The bar chart above provides information about the mortality, prevalence and incidence of tuberculosis (TB) cases per 100.000 people, in Europe, over a twenty-year period. As can be seen, mortality has declined by approximately 50%, from 13 to 7 over the years. Moreover, prevalence, which indicates the new TB cases divided by the number of people who were studied, has significantly dropped from 90 to 65.

In addition, incidence, which signifies the new cases of TB divided by the number of people at risk, has remained level, although it slightly decreased, after reaching its peak *(56) in 2000*. All three indicators increased in the year 2000 despite their decline during the previous years.

The Digestive System

- All living beings require nutrients to survive. While plants can receive nutrients from their roots, animals and humans get them from food. Food **is made up of** macromolecules (carbohydrates, lipids, proteins, and nucleic acids) that are converted into the basic molecules needed to **sustain** cell activity. The transformation of the food eaten to the nutrients required is a long process starting with food **ingestion**, continuing with **digestion** and absorption of nutrients and finishing with **elimination** and **excretion** of waste. During digestion, food is **broken down into** smaller **particles**. Some of them are absorbed and later used for the production of energy, while some others are stored and later used for **tissue** repair and body maintenance. What is left is excreted in the form of **faeces** or urine. When there is balance between food intake and food use, the individual has no weight **fluctuations**. If energy taken in is more than the energy used in activity, there is storage of the excess in the form of fat deposits. A rise in obesity and type 2 diabetes are two main indicators of this type of nutrition.

Digestion begins in the **oral cavity** with the intake of food. All mammals have teeth and are able to chew their food to break it down into smaller particles. Enzymes produced by the **salivary glands** chemically break down food, as **saliva** contains mucus that **moistens** food and regulates its pH. It also contains lysozyme, which has antibacterial properties, and an enzyme called **salivary amylase** that begins the method of **converting starches** within the food into a **disaccharide** called **maltose**. After all the chewing in the mouth, food is turned into a mass called a **bolus** for swallowing. The tongue helps in swallowing by moving the bolus from the mouth into the **pharynx** which opens to two **passageways,** the **oesophagus** and the **trachea**. The Oesophagus, a long tube starting from the mouth, leads to the stomach and the trachea leads to the lungs. The **epiglottis** is a **flap**-like tissue that covers the tracheal opening during swallowing to prevent food from entering the lungs. As soon as the bolus enters the **oesophagus**, it is pushed along the alimentary canal towards the stomach.

Problems during digestion:

- **Discomfort**: a sense of dysphoria or unease in the stomach
- **Bloating**: the accumulation of gas in the stomach
- **Indigestion**: discomfort in the stomach associated with difficulty in digesting food
- **Heartburn**: a form of indigestion felt as a burning sensation, usually when acidic digestive juices escape into the oesophagus
- **Vomiting:** ejecting matter from the stomach through the mouth
- **Constipation**: when faeces are dry and evacuation difficult

The Endocrine System

Homeostasis is any self-managing process through which biological systems tend to keep their status stable while adjusting to conditions that are not optimal for survival. If homeostasis fails, disaster or death ensues. In order for homeostasis to be maintained in the body, the collaboration of several systems and organs is essential. One way to promote this collaboration between cells and tissues is through the release of certain chemicals, called hormones.

The endocrine system produces hormones that influence and regulate a variety of body processes including physical and cognitive growth, reproduction and metabolism. Along with the nervous system, they manage the activities of other organ systems. Endocrine system cells comprise particular molecular signals called hormones, which flow in the bloodstream, modifying the activity of several organs.

As they circulate through the blood and other body fluids, hormones reach their target cells that have **receptors**, through which they can **bind together** and cause a response. Thyroid hormones, for instance, act on many different tissue types, stimulating metabolic activity throughout the body.

Thyroid hormones, for instance, act on many different tissue types, stimulating metabolic activity throughout the body.
As they circulate through the blood and other body fluids, hormones reach their target cells that have receptors, through which they can bind together and cause a response. The amount of receptors which respond to a hormone, determines the cell's sensitivity to that hormone and therefore, the resulting cellular response. Accordingly, the amount of receptors available to respond to a hormone can change in the course of life; thus, resulting in increased or decreased cell sensitivity.

Exocrine glands (sweat, salivary, mammary, prostate) secrete chemicals that are led both inside and outside the body, but not in the bloodstream, as opposed to endocrine glands. One organ that has dual function, both endocrine and exocrine is the pancreas as it releases hormones into the bloodstream but at the same time produces digestive juices that flow into the small intestine.

Endocrine glands secrete hormones, which diffuse into the blood and are carried to various organs and tissues of the body. They include: pituitary, thyroid, parathyroid, adrenal glands, gonads, pineal, and pancreas. The pituitary gland, sometimes called the **hypophysis,** is located at the base of the brain and is attached to the hypothalamus. The parathyroid glands are located on the posterior of the thyroid gland and the adrenal glands are found on top of the kidneys. The pancreas is found between the stomach and the small intestine.

Task 4 . Fill in the blanks with the following words: digestive, salivary, enzymes, gallbladder, absorption, intestine, malfunction, medical, digestion, nutrients

Accessory organs play an important role in producing and delivering …….,……1) juices to the …….. 2) during digestion and ……. 3). Specifically, the … …….4) glands, liver, pancreas and ……5) add secretions and …… ……6) that break down food into ……7). Possible ……..... 8) of any of these organs can lead to ……..9) problems. The liver alone plays an important role in the …… 10) of fats.

Relative Clauses

Defining Clauses

- Give information which is necessary to define something and are never separated by a comma
- (the relative pronoun can be omitted if it is the object of the verb of the relative clause)

Non Defining Clauses

- Give additional/extra information about something
- (the relative pronoun cannot be omitted, it cannot be replaced with “that” and is always separated by a comma from the noun it refers to)

Task 9 Complete the following sentences with: whose, who, where, which, that, in which

- Clusters of endocrine cells in the pancreas form the islets of Langerhans, …….1) contain alpha cells …….2) release glucagon, and beta cells ……..3) insulin is released.
- The gastrointestinal tract produces various hormones …4) aid digestion.
- The nutritionist … 5) helped me το lose 20 pounds, has a master's degree in Clinical Nutrition.
- The girl …….6) sister suffers from eating disorders is skinny.
- The book to ……..7) you are referring is old.
- Several organs …….. 8) main functions are non-endocrine, also possess endocrine functions.
- The food …… 9) was served at the wedding was delicious.
- The large intestine is the place ……10) faeces are stored.

Chapter 5 Nutrition Through the Life Cycle: Pregnancy & Lactation

Discussion Task 1

- Name some foods that pregnant women should avoid
- What are the benefits of breastfeeding?
- When and how should weaning start?
- How can you avoid repetition in academic writing?
- Name some linking words and expressions of cause and effect

Avoiding repetition

- Accuracy is very important in academic writing. In their attempt to be as eloquent as possible, writers might repeat the same words or expressions too often. This makes the text boring, and less academic. Some general tips on how to avoid repetition are:
- **Read your text aloud**. In this way you will trace any unnecessary repetitions.
- **Reword, rephrase, paraphrase**. Replace the words that are often repeated with synonyms, expressions, pronouns etc.
- **Use a thesaurus.** It might be time consuming in the beginning but it gets easier eventually. **Tip**: Make sure that the words you choose are appropriate for your context.
- **Have your work proofread.** Give your work to a colleague or a friend you trust to read. They may find repetitions or inconsistencies that you have missed**.**

Some more specific tips and examples follow:

- **re-word or paraphrase**: pregnancy -the important period of a woman's life
- **use a pronoun**: personal or demonstrative to refer to something mentioned earlier (do not use the same pronoun more than once)
- **use expressions such as:** the former … the latter
- **use a synonym:** lactation - breastfeeding
- **use "one" and "ones"** These cannot be used after possessive adjectives (my, etc.) or some, any, or both, unless there is an adjective. e.g. Her most difficult pregnancy was the second (one).

You can omit one / ones after first, second, next, and best but not after new, big, small, long, etc.

e.g. I hope she writes a new one. (NOT: . . . a new.)

Nutrition during Pregnancy

A balanced diet is a vital part of a healthier lifestyle at any time, but it is crucial when a woman is pregnant or planning a pregnancy. Nutrient composition of the diet during this important period of a woman's life might have an impact on the health of the foetus. A lot of studies that have been carried out in the field show that birth weight largely depends on a) pre pregnancy maternal body size and b) maternal weight gain during pregnancy.

- **Maternal body size:** it is generally expected that the size of the infant at birth, depends on the size of the mother rather than that of the father. In an analysis in Scotland, it was found that on average, the tallest and heaviest mothers had babies that weighed 500 gr more than babies of the shortest and lightest ones.
- **Maternal Weight Gain**: the weight gained in a normal pregnancy is the result of physiological processes for foetus fostering and maternal growth. Young mothers or primigravidae usually gain more than older women or multigravidae.

- **Maternal underweight:** infants of underweight women show several kinds of morbidity. The incidence of both low birth weight and prematurity or preterm labour are significantly higher among the underweight mothers. Secondly, neonatals of underweight women scored lower on the Apgar scale.

  The Apgar score is the number defining an infant's condition at one minute after birth and again at five minutes after birth by scoring the heart rate, respiratory effort, muscle tone, reflex irritability and colour.

During pregnancy, women may develop aversions to particular foods. They may also experience cravings for some kinds of food. Researchers believe that they are hormone – related. Some women might develop eating disorders during pregnancy.

Pica is a disorder that causes cravings for items that contain no nutritional value, such as clay, cigarette ash, chalk etc. This condition may indicate a lack of specific vitamins or minerals, or hide underlying medical problems. The pregnant woman's gynaecologist should be consulted as such eating patterns might be harmful for both the woman and the baby.

Taking all the above into consideration, pregnant women do not need to go on a special diet, as long as they receive a variety of different foods daily. Certainly, there is no need for pregnant women to eat "for two". The body, however, has increased nutritional needs during pregnancy and more micronutrients and macronutrients are required for its support as well as the development of the baby.

Foods that should be present in a pregnant woman's diet:

Fruit and vegetables: as they provide vitamins, minerals and fibres, which aid digestion and prevent **constipation**. At least 5 portions of a variety of fruit and vegetables are necessary daily.

Starchy foods: are a significant source of energy, some vitamins and fibre, and help pregnant women to feel full without containing too many calories. These foods should make up just over 1/3 of daily food intake. Instead of refined starchy foods, whole grain or higher-fibre options would be great choices.

Protein requirements increase gradually during each trimester of pregnancy to ensure proper growth of the baby's tissues and organs, including the brain. It also helps with breast and uterine tissue growth during pregnancy as well as the increase of blood supply.

Dairy, Folate, Iron, Fat

Dairy foods are important in pregnancy because they contain calcium and other nutrients that may cover both the mother's and the baby's nutritional needs. As it is a rich source of nutrients, milk can be an ideal place for the growth of bacteria. For this reason, it should be pasteurised and sterilised.

Folate or folic acid, lowers the risk of neural tube defects that can lead to varying degrees of paralysis, urinary incontinence and sometimes intellectual disability. Birth defects that affect the baby's brain and spinal cord, spinal bifida and anencephaly can be prevented if an adequate amount of folate is received.

Iron increases blood flow with the help of sodium, potassium, and water and this helps to ensure that enough oxygen is supplied both to the woman and the baby.

Fat is very high in calories, so eating too many fatty foods, can result in weight gain. Eating too much saturated fat can increase blood cholesterol which may cause heart disease.

Vegetarianism during pregnancy

Types of vegetarians:

- **Vegans:** Strict vegetarians who eat no animal food or their products as well as honey.
- **Lacto vegetarians:** Abstain from all animal-derived foods, even eggs but eat dairy products
- **Lacto-ovo Vegetarians**: Exclude meat, fish and poultry but consume eggs and dairy products
- **Pescatarians or pesco-vegetarians**: Exclude meat, but eat fish, eggs and dairy products**.**

As vegetarianism is getting more and more popular, many women continue to eat this way during pregnancy. Vegetarian diets celebrate whole foods like vegetables and legumes. Such eating patterns are beneficial as they may decrease the risk of type 2 diabetes and heart disease. On the other hand, certain nutrient deficiencies and pregnancy complications could be caused by such diets as they might be low in iron, vitamin B12, iodine, calcium, omega 3 fatty acids and zinc.

Furthermore, low intake of these nutrients may cause severe problems such as risk of miscarriage, low birth weight, preterm birth, or birth defects. If a vegetarian diet provides adequate amounts of these nutrients, then it is as healthy as a conventional diet. Actually, vegetarian pregnant women may have a lower risk of postpartum depression, caesarean section delivery, and maternal or infant mortality. As plant-based diets are rich in fiber but low in sugar and fat, they may prevent gestational diabetes, preeclampsia and excess weight gain during pregnancy.

Nutrition during Lactation

Not only is lactation healthy for the baby, but it also benefits the mother's health, as it may reduce the risk of developing several medical conditions such as certain types of cancer, diabetes, heart disease and osteoporosis later in life. It may also relieve stress and encourage bonding between the mother and her baby. Secondly, breastfeeding enhances the development of the infant's immune system and promotes his or her growth. Besides being an easy way to nourish one's baby, it is also the cheapest one, as it is free and most mothers can do it. However, for women who have little or no milk, or are forced to work, supplementing with infant formula could be a choice.

- It is estimated that 500 extra calories are required daily as more energy is needed for breast milk production. In order for the mother to be capable of producing this “liquid gold” it is essential to be very well nourished herself by choosing nutrient – dense foods that may help her to meet such demand. While choosing what food to eat, lactating women should be aware of the fact that depending on the smell and scent of foods consumed, the flavor of the milk may alternate. This is certainly an effective way of exposing the baby to several tastes; on the other hand, allergic reaction or food intolerance can be caused. For this reason, if a baby develops a rash or has diarrhoea or vomits soon after nursing, a paediatrician should be consulted.
- Breast milk contains everything the baby needs for proper development during the first 6 months. It is made up of 87 percent water, 3.8 percent fat, 1.0 percent protein, and 7 percent carbohydrate and provides 60 to 75 kcal/100ml.

Weaning

- At some point, it is time to stop breastfeeding. Weaning involves the process of switching a baby's diet from breast milk to other foods and drinks. When a mother decides to wean is her personal decision. Similarly, each child may be ready to wean, or stop breastfeeding, at a different age. If a mother has decided it is time to wean and her baby is younger than 12 months old, it is advised to replace breast milk with infant formula. If the baby is 12 months or older, (follow-on) formula milk would be a good choice.
- In order for weaning to be smoother, it has to be done gradually and last several weeks or more. While mothers slowly stop breastfeeding, their body will start producing less breast milk and eventually it will no longer make breast milk.

Maternal Body Size	A. The amount of kilos of a newborn
Weaning	B . Nursing
Maternal Weight Gain	C. The weight pregnant women put on
Lactation	D. The state of being sick
Incontinence	E. Heat-treatment process that kills pathogenic microorganisms in foods
Maternal Underweight	F. A woman's weight prior to pregnancy
Morbidity	G. Lack of voluntary control of urine or faeces
Pre pregnancy Weight	H. Height and pre pregnancy weight of the mother
Pasteurise	I. Stop breastfeeding
Birth Weight	J. When a woman enters pregnancy at 10% or more below standard weight for height

Task 5. Write the words

- This is her first baby. She is a p _ _ _ _ _ _ _ _ _ _ _ a
- She couldn't even stand the smell of the foods when she was pregnant. She had a _ _ _ _ _ _ _ s.
- The baby was born 7 months. He was a p _ _ _ _ _ _ _ e baby.
- She has delivered four children. She is a m _ _ _ _ _ _ _ _ _ _ a.
- F _ _ _ _ _ _ _ _ _ _ _ n is the process through which, milk is turned into yoghurt.
- She had a m _ _ _ _ _ _ _ _ _ e when she was 4 months pregnant due to problems with the chromosomes of the fetus and lack of vitamins.
- Many d _ _ _ _ _ _ _ _ _ _ _ _ l changes occur in the second trimester of pregnancy.
- She takes a vitamin D supplement to c _ _ _ _ _ _ _ _ e for its lack.

Task 6. Fill in the blanks with the following words: contractions, premature, diabetes, labour, nutrition, neonatal, physical, fatty, occurs, obesity

Preterm labour 1. ……..when regular 2……..result in the opening of a pregnant woman's cervix after week 20 and before week 37 of pregnancy. Preterm labour can result in 3. ……..…… birth. The earlier premature birth happens, the greater the health risks for the baby. Many premature babies (preemies) need special care in the 4. ……..…… intensive care unit. Preemies can also have long-term mental and 5. …….. disabilities. The specific cause of preterm labour often is not clear. Certain risk factors might increase the chance of preterm ……..6, but it can also occur in pregnant women with no known risk factors. Healthy pregnancy outcomes are generally associated with proper 7. ……... In addition, some research suggests that a diet high in polyunsaturated 8. **…**…….. acids (PUFAs) is associated with a lower risk of premature birth. PUFAs are found in nuts, seeds, fish and seed oils.Certain conditions, such as 9. ……, high blood pressure and 10. …….. increase the risk of preterm labour. Work with your health care provider to keep any chronic conditions under control.

Task 10. Circle the correct phrase

1. Excess intake of saturated fat, might be **the cause of/ thanks to** weight gain.
2. Increased risk of developing cardiovascular disease **can lead to / may be a consequence of** diets higher in saturated fat and trans fat.
3. **Therefore / Because**, diets rich in vitamins and minerals help body growth.
4. There is great risk of developing cavities, **resulting from / can give rise to** diets higher in all sugars
5. Uncontrolled high blood pressure, **owing to / can lead to** excess intake of salt and can raise the risk of heart attacks, heart failure, stroke, kidney disease, and blindness
6. Gynaecologists prescribe folic acid during pregnancy**, due to / for** it protects the fetus against neural tube defects

Task 11. Use the words in brackets to rewrite the sentences so that they mean the same

- Aminoacids are essential because they help the body to function normally
  - ……(due to the fact that).
  - …….. ……(Consequently).
- Protein helps body growth, so it is necessary for teenagers
  - ……..…..(since)
  - ……..….(Because of)
- Daily exercise is beneficial to people's health; therefore, most doctors suggest it as a "medicine"
- ……..(As)
- ……..……(Due to)

Chapter 6
Nutrition through the Life Cycle: Child and Adolescent Nutrition - Childhood Obesity

Task 1 Discussion

- What factors may influence a young child's eating habits?
- Why is healthy nutrition important during adolescence?
- What do you know about childhood obesity?
- Do you use any techniques for learning subject specific vocabulary?
- How can you express possibility in the present/past?

COLLOCATIONS

A good technique for memorising new vocabulary is to combine words that are usually used together. They are called collocations and they may be:

• adjective + noun	nutritional status
• noun + noun	nutrient dense
• verb + noun	have breakfast
• verb + expression with preposition	cut down on junk food
• adverb + verb	strongly support
• adverb+ adjective /past participle	highly nutritious

Common collocations used in texts about nutrition

- Adipose tissue
- Lean meat
- Water/ fat soluble
- Animal/vegetable fat
- Individual needs
- Eating disorders/pattern/habits
- Daily value
- Body weight/mass
- Homemade food
- Gain / put on weight

Can you think of more collocations?.....

Task 2 Choose words to make collocations.
diet, grains, order, pattern, vegetables, consumption of food, meal, food, weight, label

- Leafy …….
- Daily …….
- Home cooked …….
- (un)processed …….
- Lose …….
- Whole …….
- Balanced …….
- Exercise …….
- Descending/ascending …….
- Food …….

Reading Child Nutrition

- From birth, infants are nourished with breast milk, formula milk or a combination of both. At the age of six months, paediatricians recommend solid food, usually rice cereals, giving analytic guidelines to parents, who might feel stressed about the next step. After rice cereals have been offered to the infant for some days, fruit and vegetables are introduced gradually. The reason for the gradual introduction of new foods into the baby's diet is the need to trace food allergies or food intolerances. There are a lot of commercial baby foods in the market but it is advised that mothers should prepare their baby's food themselves, using the best ingredients available and without adding salt and sugar for the first year of their baby's life. As mature chewing skills have not been developed yet, it is suggested that the food offered to the baby does not require much chewing.

- While growing up, children start to develop their personal eating patterns and this is the right time for mothers to help them to establish healthy eating habits. Parents should be aware of the fact that their own eating patterns have a major impact on their babies' habits. For this reason, this might be the best timing for mothers and fathers to switch to healthier food choices.

- Toddlers and preschoolers have increased nutritional needs as they grow quickly, both physically and cognitively. However, providing them with all the essential nutrients may be quite strenuous as parents might be faced with a picky eater or a tantrum at mealtime. It is important that parents restore order immediately, without losing their temper and in order to do that they should plan ahead.

Childhood obesity is an increasingly common medical problem that has a heavy impact on children and teenagers. It is a very serious health condition since excess weight during puberty induces health issues that were once considered adult disorders such as diabetes, high blood pressure, high cholesterol and cardiac problems. Psychologically, childhood obesity can also lead to low self-esteem, anxiety, depression, victimisation and suicide. Prevention of this severe condition helps to protect the child's psychological and physical health. For this, educational programs should be implemented in schools.

When is a child considered obese?

- Not all children with excess weight are overweight as some of them might have bigger body frames and different fat at different stages of development. In order to determine whether a child's weight may cause future medical issues, paediatricians use growth charts, estimate the child's general health and calculate their Body Mass Index. BMI, which provides a guideline of weight in comparison to height, is an accepted measure of overweight and obesity. Other indicators or predictors might be the child's history of growth and development, as well as the family's weight-for-height history.

Causes of childhood obesity

Lifestyle issues: Sedentary way of life, having little exercise and getting a lot of calories from high-calorie and processed food.

Family factors: Genetic and hormonal factors can have a negative impact on a child's weight. Additionally, the eating habits of an obese family will certainly affect their children's eating habits.

Psychological factors: Parents' divorce, death in the family, difficulty to express their emotions, stress or even boredom might make a child overeat. In addition, severe psychological problems or eating disorders might underlie childhood obesity.

Socioeconomic factors. Families with a low income may not be able to afford to buy food of high nutritional value such as fruit, vegetables or fish very often. It might be more affordable for them to buy ready-made meals that are always processed and therefore, fattening.

- **Medication or Health conditions.** Some prescription drugs can increase the risk of developing obesity. Also, the developmental changes that children go through may cause hormonal issues such as hypothyroidism, Hashimoto Thyroiditis, metabolic syndrome etc that may cause weight gain, if left untreated.

Preadolescent and adolescent nutrition

This is a very important period of life as great developmental, cognitive and psychological changes that have started in childhood, reach a peak and are completed. The physical transformation of a child into a young adult is called puberty and this is the period that may have a great impact on a child's adult life. Early adolescence is 11 to 14 years, middle adolescence 15-17 and late adolescence is 18 to 21 years. Although age is a sufficient index, SMR (Sexual Maturation Index) should also be taken into consideration by paediatricians, endocrinologists and nutritionists – dietitians while assessing a (pre)adolescent's nutritional status. As mentioned above, physical growth accelerates during the teenage years. Consequently, the need for energy, minerals and proteins increases and teenagers feel hungrier and eat more as extra food gives them extra energy and nutrients to support this growth and development.

- (Pre)adolescence is a period during which children assert their right of opinion and feel invincible and sure that they know everything. Additionally, they might be quite reluctant when their parents ask them not to skip breakfast, to eat fruit, vegetables and legumes and to avoid sugary and energy drinks and alcohol. The need for peer acceptance is important for (pre)adolescents who may be influenced by friends and the role models that are imposed by social media. They might, for example consider cool to eat junk food rather than home made, which can lead to receiving less nutrients and more calories and trans fats. Moreover, the role models of skinny girls and muscular boys might urge girls to adopt fad diets and boys to try anabolic steroids. As a consequence, they can result in eating disorders or cause irreversible damage to their health and even death.

In order to prevent all this, education can have a positive impact along with eating habits established in the family environment during childhood.

The role of school:

- Schools should provide students with proper knowledge about the importance of healthy food. Additionally, nutrition experts should design educational, inventive and participatory syllabi.
- School gyms should be full of students engaging in physical activities, urging them to decrease the time spent on screens.
- School canteens should be obliged to sell nutrient dense food and natural fruit juices instead of foods with empty calories.

Task 4 Fill in the blanks

Using scissors helps children practice their f _ _ _ m _ _ _ _ s _ _ _ _ _

Her son is a p _ _ _ _ e _ _ _ _ . The only vegetable he likes eating is cucumber

She prefers giving her baby homemade food rather than buying c _ _ _ _ _ _ _ _ _ _ b _ _ _ f _ _ _ .

How old is your daughter? She is two years old. She is a t _ _ _ _ _ _ .

Parents should avoid feeding their children while having a t _ _ _ _ _ _

Finding out whether a baby has certain f _ _ _ i _ _ _ _ _ _ _ _ _ _ _ _ helps parents to plan their meals adequately.

Establishing healthy e _ _ _ _ _ _ h _ _ _ _ _ from a very young age can help a child to become a healthy adult.

Paediatricians advise mothers to introduce s _ _ _ _ _ gradually as their babies chewing skills are not mature yet.

Task 5. Write the opposite of the following words

- Breast milk ≠
- Liquids ≠
- Homemade baby food ≠
- Early adolescence ≠
- Cognitively ≠

Academic Skills
Expressing Ability and Possibility

Task 8. Rewrite the sentences so that they have the same meaning using the word provided.

- Mary was able to cook Thai food when she was 10 (could)

  ……

- An obese teenager is likely to become an obese adult (may)

  ……

- Perhaps she has followed a fad diet (might)

  ……

- She almost died due to strict dieting (could)

  ……

- Most toddlers can eat with minimum help (be able to)

  ……

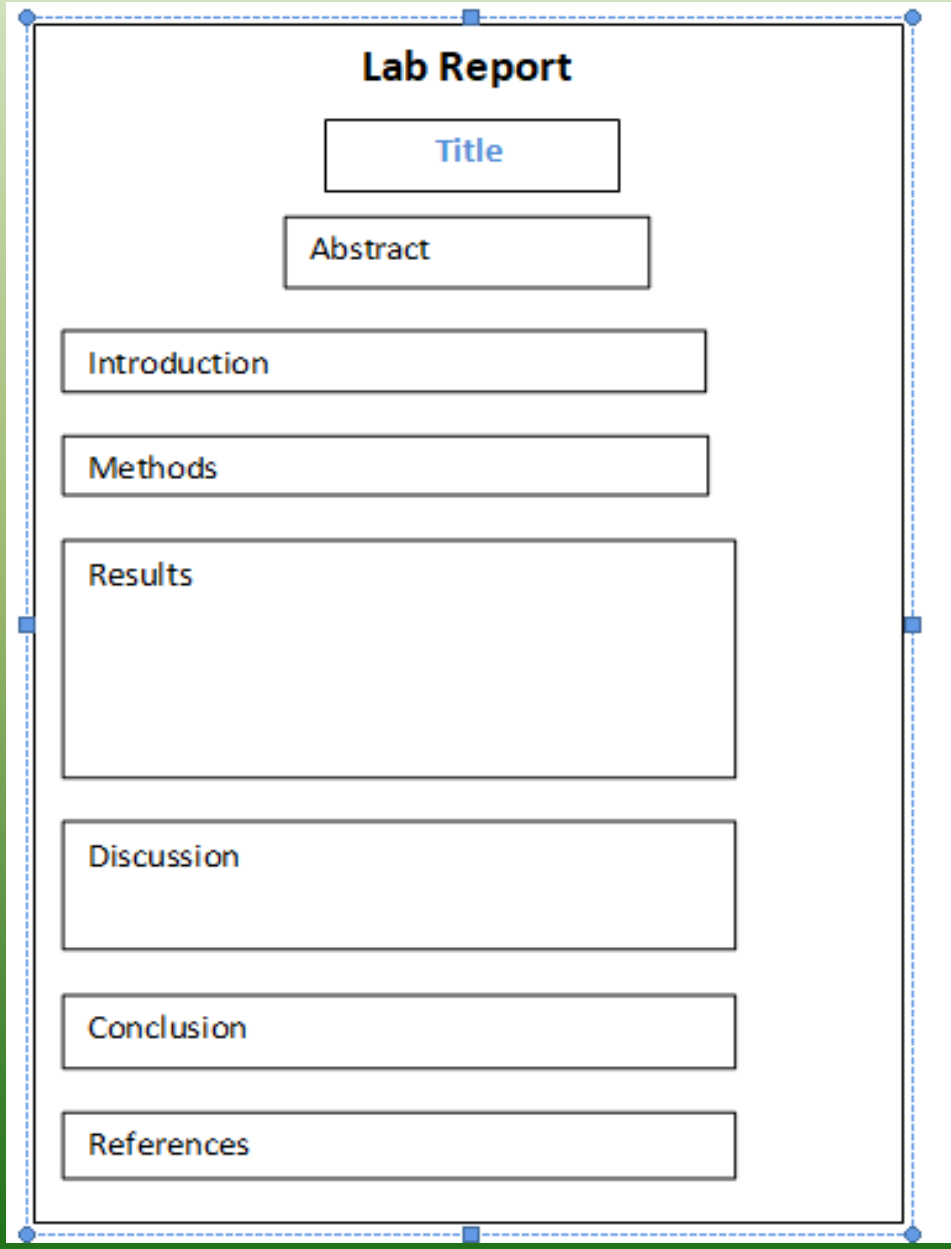
Chapter 7
Nutrition through the Life Cycle: Adult Nutrition & Nutrition for the Elderly

Discussion Task 1

1. What do primary and secondary ageing mean? What is the difference?
2. What happens during menopause in a woman's body?
3. What is sarcopenia? What can it cause?
4. Can you write a lab report? What do you need to include?
5. Name some verbs you can use to quote someone else's words:

Writing Lab reports

- After attending or conducting research in a lab, you might be asked to write a lab report. There are three types of labs: **Standard lab**: a lab in which a hypothesis is set and tested, **Descriptive lab**: a procedure is followed and results and or findings are reported and **Student-designed lab:** you design an experiment and carry out tests.



Nutrition during Adulthood

Keeping a nutritious diet during one's life helps to avoid malnutrition, as well as a variety of disorders and non communicable diseases NCDs (diseases that are not transmissible directly from one person to another) such as diabetes, heart disease, stroke and cancer.

However, increased packaged food demand, rapid urbanisation, and changing lifestyles have caused a change of dietary patterns. People are consuming foods that are rich in energy, fats, free sugars, and salt/sodium. Additionally, quite a few are not eating enough fruit, vegetables, and other dietary fibre, such as whole grains.

Adulthood starts at the age of 18 and it is classified as follows:

Early adulthood or young adults are those aged 20 to 35-40

Middle adulthood Midlife or middle-aged are those from 35-40 to 60-65

Old age or the elderly or older adults are people who are over 65

By the time individuals become adults, most of their physical maturation (growth and development) has been completed. Therefore, nutrients are used for body repair and maintenance. Secondly, physical ability, muscle strength and cardiac functioning reach a peak (around the age of 30). However, with the passing of the years bodies start changing and this is called ageing. There is primary and secondary ageing. The former has to do with biological, molecular and cellular changes or oxidative damage (hair becomes thin and grey, skin becomes drier, wrinkles start to appear, reproductive capacity starts to fall). The latter comprises lifestyle factors such as lack of exercise, excessive body weight or malnutrition.

Key factors of a healthy diet

- Eat a variety of foods
- Reduce Fat intake
- Reduce salt intake
- Reduce the intake of free sugars
- Drink plenty of fluids
- Keep a regular meal schedule
- Keep your servings reasonable
- Keep your body weight healthy and steady
- Exercise regularly
- Make changes gradually

Nutrition in the elderly

- With the passing of the years, several changes continue to occur both in cells and in organs which eventually result in more changes in appearance and body function. The older an individual gets, the fewer calories per day they need in order to maintain their weight as they move less and have smaller muscle mass. However, the need for nutrients remains high and for this reason it is imperative for older people to get nutrient-dense, whole foods from low calorie sources such as fruits, vegetables, lean meat and fish. Additionally, people over the age of 65 are at higher nutritional risk than the general population due to a higher incidence of comorbid disorders as well as common physiological changes associated with ageing. Moreover, as ageing proceeds, the elderly lose muscle (3-8% each decade after the age of 30), which is called **sarcopenia**. This is one of the main causes of weakness, fractures and poor health during this period of life. Consuming more protein along with exercise could help the body to compensate for this loss.

World Health Organisation (WHO) Key facts for Healthy Diet:

- Unhealthy diet and lack of physical activity are leading global risks to health.
- Energy intake (calories) should be in balance with energy expenditure. To avoid unhealthy weight gain, total fat should not exceed 30% of total energy intake. Intake of saturated fats should be less than 10% of total energy intake, and intake of trans-fats less than 1% of total energy intake.
- Limiting intake of free sugars to less than 10% of total energy intake is part of a healthy diet. A further reduction to less than 5% of total energy intake is suggested for additional health benefits.
- Keeping salt intake to less than 5 g per day helps to prevent hypertension, and reduces the risk of heart disease and stroke in the adult population.

Task 3 Match the words to their definitions

- Maturation
- Accumulation
- Malnutrition
- Fluctuation
- Agility
- Fracture
- Constipation
- Maintenance
- Deficiency
- Dehydration

a. When faeces are dry and evacuation difficult

b. The condition in which water levels in the body drop below normal level

c. Unsteadiness, going up and down

d. Breaking of a bone or cartilage

e. The ability to move the limbs quickly and easily

f. Inadequacy, incompleteness

g. Actions performed to keep a system working

h. A mass of something piled up or collected

i. A lack of adequate nourishment

j. Growth, development, evolution

Task 4. Choose the correct answer

- 1. a 42 year old man is

  a. a young adult b. middle aged c. an elderly person
- 2. During adulthood, the body uses nutrients for

  a. muscle building b. cardiac functioning c. body repairing
- 3. Excessive weight gain during adulthood may cause ……. ageing

  a. primary b. secondary molecular
- 4. to enhance fibre intake one should eat

  a. pulses b. fats c. oily fish
- 5. in order to keep blood pressure low…..

  a. reduce salt b. reduce fat c. reduce water
- 6. Osteoporosis may cause …..

  a. fractures b. blood fat c. endurance

Using verbs of reference

Verbs of reference are used to summarise, paraphrase or quote another writer's ideas. They imply the position of the writer whose ideas are quoted and might be followed by a noun clause starting with "that"

.

- Dr Harris **commented/argued** that cancer is partly caused by bad nutrition
- Evans (2020) **found** that
  ……
- As Marley **suggested/observed,** :
  "……".

Using verbs of reference

(a) Referring verbs used for presenting a case:

Argue, claim, consider, comment, hypothesise, suggest, observe, believe, think, state, point out, note

Jekkings (2021) c**onsidered** that skipping breakfast could be fattening.

(b) Referring verbs used for expressing a reaction to something previously stated

Accept, admit, agree, deny, doubt, comment, question

Wordsworth **accepts** Jekkings' suggestion that skipping breakfast could be fattening

(c) Others include:

assume, conclude, discover, explain, simply, outline indicate, maintain, presume, reveal, show, explore

Peterson (2021) assumes that fad diets may cause eating disorders.

Task 8 Write a sentence referring to what the following writers said.

Example: Z: 'My research shows that the Mediterranean Diet is one of the healthiest diets in the world".

Z claimed/ argued that the Mediterranean Diet was one of the healthiest diets in the world".

Z: "I may have consumed larger quantities of food than the ones suggested by my nutritionist".

Z ……

Z: "I did not say that that there is strong correlation between diabetes and bad nutrition"

Z……

Z: "Junk food should be avoided'.

Z……

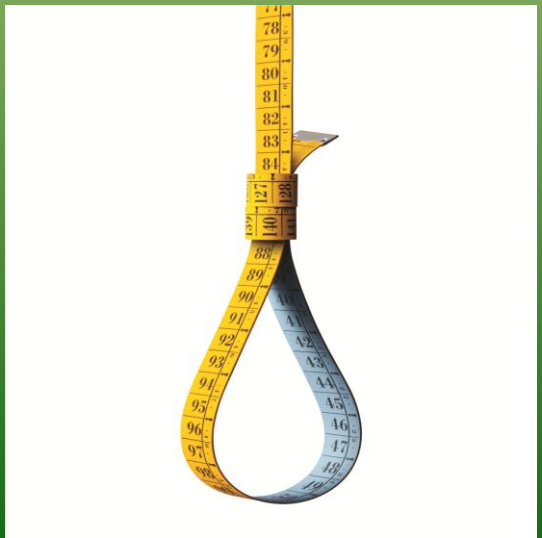
Z: 'I am in favour of Dr Johnson's views on nutrition during cancer treatment".

Z……

Chapter 8 Eating Disorders

Discussion Task 1

- Name some eating disorders
- What do you know about their causes?
- Who do you think are mostly affected by Eating Disorders: Men or women? Teenagers or adults? Why?
- What is wordiness? How can you avoid it in Academic writing?
- How can you write a conclusion? What should it include?



Avoiding wordiness

When something is said in more words than necessary, it is wordy. In academic writing wordiness may confuse the reader and undermine comprehension. Try removing words from each sentence. If you can remove a word while keeping the sentence's meaning, the sentence is wordy.

Try to convey meaning in as few words as possible.

Examples:

Wordy: People whose professional activity lies in the field of Nutrition & Dietetics will almost certainly have to continue with a master's degree, doctorate or even post doctorate in order to pursuit a career as university professors.

Concise: Nutritionists need further studies for an academic career.

Wordy: Failure to receive an adequate quantity of solid food over a long period of time is absolutely certain to eventually lead to a lethal conclusion.

Concise: If you do not eat, you die.

Replace phrases with adverbs:

It is obvious that	Obviously
It is possible that	Possibly
It is clear that	Clearly
It is evident that	Evidently
It seems that/it appears	Apparently
Despite the fact that/in spite of	Although
Due to the fact that	Because (of) / owing to

Eating disorders and their causes

Eating disorders are complicated, mental, physical and emotional medical conditions. Most of the time, the intervention of doctors, nutritionists and psychologists is required for their treatment and the individual's full recovery. Several biopsychosocial influences might be **implicated in such** nutritional situations and considered as risk factors. They may involve the individual's sociocultural and psychological influences as well as their biological background. **Sociocultural idealisation** of thinness, **thin-ideal internalisation** and personality features may underlie the etiology of eating disorders. Similarly, such conditions may result from stressful situations such as being bullied or heartbroken or even a divorce or death in the family, mostly during adolescence.

Research in the field suggests that psychological and environmental factors may also have an impact on the expression of genetic traits for such pathological situations..

In severe cases, eating disorders can cause serious health issues and may even result in death, if left untreated. People with eating disorders can have a variety of symptoms, such as severe restriction of food, food **binges**, **purging** behaviours like vomiting or **compulsive-exercising**, **self destructive behaviour**, as well as anxiety and depression. As mentioned above, research shows that eating disorders may be caused by a variety of factors. These include genetics, personality traits, cultural ideals and brain biology.

Genetics: there is strong evidence that eating disorders may be hereditary.

Personality features: Low self esteem, need for social acceptance and perfectionism are personality traits.

Cultural ideals: Culturally accepted ideals of thinness are present in many areas of the world.

Brain Biology: Experts have found that differences in brain structure and biochemistry may also be significant in the development of eating disorders.

Types of Eating Disorders

Anorexia nervosa is the most well-known eating disorder. It mostly develops during adolescence or young adulthood, tending to affect mostly females. Anorexic people usually consider themselves as overweight or obese, despite being dangerously underweight. They may compulsively monitor their weight, avoid eating certain types of foods and restrict their calorie intake to a minimum.

Common symptoms of anorexia nervosa include:

- being significantly underweight compared with people of similar age and height.
- very restricted eating patterns.
- an intense fear of gaining weight or persistent behaviours to avoid gaining weight, despite being underweight.
- a relentless pursuit of thinness
- a significant impact of body weight on an individual's self-esteem.
- a distorted body image.

Bulimia nervosa

It is another well-known eating disorder. Similarly to anorexia, it mostly develops during adolescence or young adulthood, tending to affect mostly females. Bulimics usually consume extremely large amounts of food in a limited period of time (binging) until feeling painfully full. During binging, the individual usually feels unable to stop eating or control how much or what type of food (the one they would normally avoid) they are consuming. In order to relieve gut discomfort and compensate for all the calories taken, bulimics try to purge, pushed by a sense of guilt. Purging might involve abusing laxatives and diuretics, vomiting, fasting, enemas and compulsive exercise. Symptoms of Bulimia may look similar to those of binge eating, but bulimics usually tend to maintain normal weight.

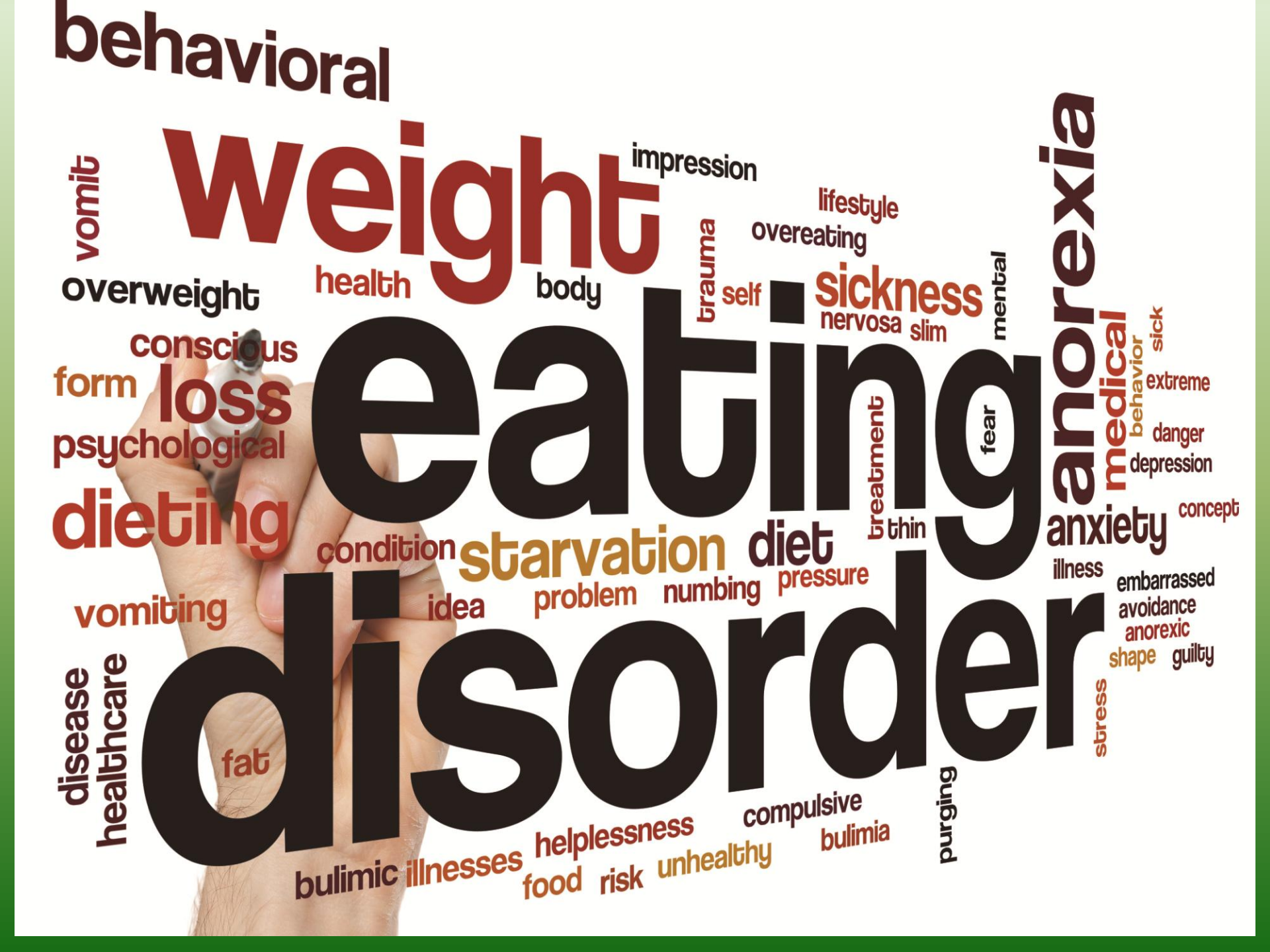
Common symptoms of bulimia nervosa are

- **Frequent** episodes of binge eating and a sense of feeling out of control.
- Repetitive episodes of inappropriate purging behaviours to avoid weight gain.
- Low self-esteem, extremely influenced by body shape and weight.
- Constant fear of **gaining weight**, despite having normal weight.

- **Binge Eating Disorder** (BED) is considered as one of the most common eating disorders, especially in the United States. Similarly to Anorexia and Bulimia, it mostly develops during adolescence or early adulthood; although it can develop later on, but there is no gender differentiation as it might occur in both males and females. Binge eaters might use binging as a way of coping with stress, depression, anxiety or bipolar disorder. Individuals with BED have symptoms that are similar to those of bulimia or the binge eating subtype of anorexia.
- For example, binge eaters consume extremely large amounts of food in relatively short periods of time, followed by a feeling of lack of control during binges. Unlike anorexics and bulimics, binge eaters do not restrict calories or use purging, such as vomiting or exercising excessively, to compensate for their binges.

Common symptoms of binge eating disorder are:

- Eating large amounts of foods rapidly, in secret, in one sitting and until feeling uncomfortably full, despite not feeling hungry.
- A sense of feeling out of control during episodes of binge eating.
- Feelings of regret and **distress**, such as shame, **disgust**, or guilt after binge eating episodes.
- No use of purging behaviours, such as calorie restriction, vomiting, compulsive exercise, or laxative and/or diuretic use, to compensate for their binging.
- People with binge eating disorder are often overweight or obese and have a lot of weight **fluctuations.** Consequently, this may increase their risk of health complications **related to** excess weight, such as heart disease, stroke, and type II diabetes.


behavioral
weight
vomit
impression
lifestyle
overeating
trauma
overweight
health
body
self
sickness
nervosa
slim
mental
anorexia
conscious
form
loss
psychological
eating
medical
behavior
sick
extreme
danger
depression
dieting
treatment
fear
thin
concept
anxiety
condition
starvation
diet
illness
embarrassed
avoidance
anorexic
shape
guilty
vomiting
idea
problem
numbing
pressure
disorder
stress
disease
healthcare
fat
purging
compulsive
helplessness
bulimia
bulimic
illnesses
food
risk
unhealthy

Individuals with **Pica disorder** tend to crave for and eat non-food substances. This disorder may affect children, pregnant women, and individuals with mental disabilities and its consequences could be lethal.

ARFID makes people abstain from food. This happens due to a lack of interest in food or an intense distaste for how certain foods look, smell, or taste. Similarly to most eating disorders, if left untreated it may cause several health issues.

Rumination disorder can affect people at any stage of life. Food is brought back up from the stomach and then it is either chewed and swallowed again or spat out. If left untreated it may cause several health issues.

Purging disorder. Individuals with purging disorder often use purging behaviors, such as vomiting, abusing laxatives and/or diuretics, or compulsive workouts to control their weight or shape. However, they do not binge

•**Other specified feeding or eating disorder (OSFED) or**
• **Eating Disorders Not Otherwise Specified (EDNOS).**
•Any other conditions that have symptoms similar to those of an eating disorder but do not belong to any of the categories above and are not found in the DSM-5 (Diagnostic and Statistical Manual of Mental Disorder).

Individuals with **Orthorexi**a are so obsessed with healthy eating, that their everyday life is disrupted. People suffering from this disorder might exclude entire food groups as they may consider them unhealthy. This may cause malnutrition, extreme weight loss, eating in secret, emotional distress and anxiety.

•**Night eating syndrome.** Individuals with this syndrome frequently eat excessively, often after awakening from night sleep.

Drunkorexia refers to individuals, mostly college-aged women, who **curtail** food calories in order to make room for alcoholic drink calories. It may be masking eating disorders such as bulimia or anorexia nervosa.

Recovering from eating disorders

With proper treatment, an individual's recovery from eating disorders is possible. Treatment should be holistic and systemic. Therefore, it should aim at healing both physical and psychological issues and making interventions in the patient's family and social environment. This could start by the prescription of vitamin supplements, and hospitalisation for medical support. Simultaneously, the patient and their environment could be assisted with psychotherapy and if this does not work out, therapy could continue with medication such as antidepressants, antipsychotics or mood stabilisers to treat anxiety and depression. When treatment is completed, nutritional counselling should continue in order to help the individual and their families establish healthy eating behaviours. Finally, psychological support should continue, to help the individual and their associates to find ways to express their feelings and maintain stable relationships within their social environment.

Task 4. Match the words to their definitions

- implicated in
- abstain from
- to be preoccupied with
- to have a distaste for
- compensate for
- linked to
- embark on
- prevent
- comply with
- crave (for)

a. Related to

b. To express aversion or dislike for something

c. To make up for

d. To ensure that something will not happen

e. To obey a rule / law

f. To adapt

g. To have an appetite for sth in particular

h. To begin something new or important

i. Spending a lot of time thinking about something

j. To choose not to do something or to stop using something

k. Imply /convey a meaning indirectly through what one says, rather than stating it explicitly.

Interaction skills

Task 7

Do you agree or not with the following statement? Discuss with your classmates. Introduce your opinion using expressions from the box.

"Awareness is the first step to the treatment of eating disorders"

- I (don't) think that…
- I (don't) believe that
- I agree/disagree,
- In my opinion,
- Personally, I feel that…

Writing a conclusion

- The conclusion is the last part of a written piece of work or of any type of presentation. It is the last impression one gives to one's audience. Therefore, it has to be clear, to the point and not add new information. Depending on the length of the work, it should be short (5% of the total word count) and simple. The conclusion is closely related to the introduction paragraph and the questions posed there.

How to begin

- In conclusion
- To conclude
- To sum up/ summarise
- In summary
- All things considered
- In a nutshell
- On the whole

Speaking Skills

Task 8

- **You are a Nutritionist-Dietitian. Based on the text you have just read, give three pieces of advice for the relatives of people with eating disorders. Use the following expressions:**

- You should …
- You could …
- I (would) (strongly) suggest/advise that ...
- It's generally best/a good idea to...
- One thing you could/should/have to do is ...
- The best/most important thing (to do) is to

Chapter 9
Nutrition and Health Claims — Food Additives

Discussion Task 1

1. "Low sugar", "Sugar free", "With no added sugars". Can you tell the difference?
2. How can such terms on food items mislead consumers?
3. What are additives?
4. What is an abstract? What should it include?
5. Have you ever made a speech? What should it include?

Academic Writing Skills

- **Abstract Writing**

- The abstract is the first section of an assignment, a report, an article, a dissertation etc. It is the first impression that reviewers or potential readers get about one's work, helping them to determine its topic and relevance. It provides a summary or an overview of the whole work to follow and gives the reader a complete and concise idea of what they are going to read. Therefore it has to be clear, coherent and easy to follow, providing the reader with all the necessary information.
- Abstract writing follows similar rules for all fields of study. As it contains information from every section of the paper, it should be written after the whole work has been completed.

Abstract layout

Introduction: briefly describe the topic or problem and explain why it is worth writing about and why the reader should read it.

Aim or Purpose: describe why you have written this piece of work.

Procedures or Methods: explain how you conducted your research (describe the type of method used: research, experiment, questionnaires etc.).

Results/Findings: briefly describe the results of your research, experiment or survey.

Evaluation: briefly evaluate and assess the results of your study.

Conclusion & Implications: briefly discuss the conclusions of your work. Write about the impact it might have in the field.

- (Optional) Pose a question for further research or study.
- When following the APA citation and format style write 5-6 **Keywords** below the abstract. They will enhance search results for your work. You can also explain **acronyms** and **abbreviations**.

European Union rules on nutrition and health claims

They have been established by **Regulation (EC) No 1924/2006**, which started to apply on 1/7/2007.

This regulation is the **legal framework** used by food industry to highlight the beneficial effects of their products, **in relation to** health and nutrition, on the product label or in its advertising.

The rules of the Regulation apply to **nutrition claims** (such as "low fat", "high fibre") and to **health claims** (such as "Vitamin D is needed for the normal growth and development of bone in children").

The objective of these rules is to ensure that any claim made on a food's labelling, presentation or advertising in the EU is clear, accurate and based on scientific evidence**.**

- **Food bearing claims that could mislead consumers are prohibited on the EU market**.
- This not only protects consumers, but it also promotes innovation and ensures fair competition.

The rules ensure the free circulation of foods bearing claims, as any food company may use the same claims on its products in the EU.

There are different procedures managed by the Commission for the various types of claims, with regard to their **authorisation.**

A **public EU Register of Nutrition and Health Claims** lists all permitted nutrition claims and all authorised and non-authorised health claims, as a source of reference.

Due to the UK's exit from the EU there may be changes to this legislation not yet recorded or applied to the text.

Permitted nutrition claims (some examples) as amended by Regulation (EU) No 1047/2012

LOW FAT: the product contains no more than 3 g of fat per 100 g for solids or 1,5 g of fat per 100 ml for liquids (1,8 g of fat per 100 ml for semi-skimmed milk).

FAT-FREE: the product contains no more than 0,5 g of fat per 100 g or 100 ml. However, claims expressed as 'X % fat-free' should be prohibited.

LOW SUGAR: the product contains no more than 5 g of sugars per 100 g for solids or 2,5 g of sugars per 100 ml for liquids.

SUGAR-FREE: the product contains no more than 0,5 g of sugars per 100 g or 100 ml.

WITH NO ADDED SUGAR: the product does not contain any added mono- or disaccharides or any other food used for its sweetening properties. If sugars are naturally present in the food, the following indication should also appear on the label: 'CONTAINS NATURALLY OCCURRING SUGARS'.

Vocabulary Task 4 Match the terms on the left to their definitions

Labelling
Misleading
Innovation
Fair competition
Authorisation
Transparency
Legislation
Regulations
Claim (n)
Objective (n)

a. an honest way to do something that allows others to know exactly what you are doing

b. an honest way of achieving something that other people also want

c. having official permission to do something

d. the use of a word or phrase to describe sth

e. a set of laws

f. a new idea/method/invention

g. an act or a saying used to make someone believe something that is incorrect or not true

h. aim, cause

i. a set of official rules

j. a statement that something is true or likely to exist

Reading Food Additives

- Additives are substances used for a variety of reasons - such as **preservation**, **colouring**, **sweetening**, etc.- during the preparation of food.
- Added to food for technological purposes in its manufacture, processing, preparation, treatment, packaging, transport or storage, food additives become a component of the food.
- Additives can be used for various purposes. EU legislation defines 26 "technological purposes". **Additives are used, among other things, as**:
- **Colours** – they are used to add or restore colour in a food
- **Preservatives** – these are added to prolong the shelf-life of foods
- **Antioxidants** – substances which prolong the shelf-life of foods by protecting them against oxidation (fat rancidity and colour changes)
- **Flour treatment agents** – added to flour or to dough to improve its baking quality

Food Preservation

- Food is anything that can be consumed by humans or animals for growth, satisfaction or social reasons. It may be raw or cooked, natural or processed, fresh or preserved, **perishable or nonperishable**, healthy or unhealthy, dietetic or fattening, nutritious or not. It may also be manufactured, synthetic, **primary or secondary derivative** or medical food. Although the use of food for growth is common all over the world, what is eaten, how, and on what occasion, largely depends on each culture's social standards and tradition. Food is essential for the development of the body, but excessive amounts of fatty, salty and sugary food could be disastrous. Chemically, animal foods comprise water, protein and fats, whereas plant foods consist of water, lipids, fat, and carbohydrate with small **proportions** of minerals and organic compounds.

Food preservation methods are categorised into three main techniques according to the mode of action:

inhibition (of chemical deterioration and the growth of microbes)

inactivation (of bacteria, yeast or enzymes**)** and methods of **avoiding recontamination** (before and after processing**)** The choice of the suitable method is critical as preservation involves the whole food chain.

After storage and preservation of food for a certain period, some of its qualities may start to change or **deteriorate.** Therefore, it is crucial that the following are considered:

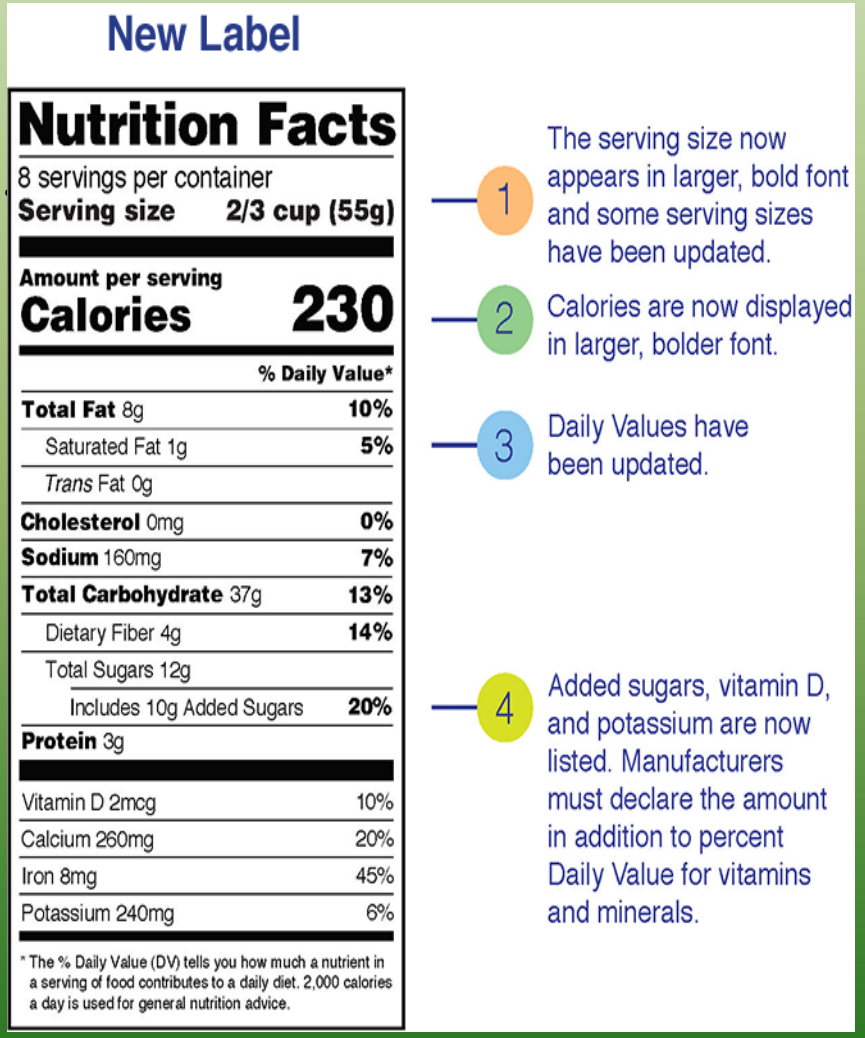
a) the length of preservation,

b) the desired level of quality

c) whom the product is preserved for

Food Labels
The New Nutrition Facts Label

- The FDA has updated the Nutrition Facts label on packaged foods and drinks. FDA is requiring changes to the Nutrition Facts label based on updated scientific information, new nutrition research, and input from the public. This is the first major update to the label in over 20 years.



Calories Go Big Calories are now in larger and bolder font to make the information easier to find and use.
2,000 calories a day is used as a guide for general nutrition advice.

- **Serving Sizes Get Real** Servings per container and serving size information appear in large, bold font. Serving sizes have also been updated to better reflect the amount people typically eat and drink today.The serving size is not a recommendation of how much to eat or drink. One package of food may contain more than one serving.

The Lows and Highs of % Daily Value The percent Daily Value (%DV) shows how much a nutrient in a serving of food contributes to a total daily diet. DV for nutrients have been updated, which may make the percent DV higher or lower on the new Nutrition Facts label.
As a general guide:

- **5% DV** is considered **low**.
- **20% DV** is considered **high**.

Academic Speaking Skills Making a Speech

When you want to share your academic research and findings, you might be asked to present them at a conference or a seminar etc. A simple layout of a speech is:

- **Introduction:** Briefly explain who you are and the reason for the speech
- **Main body:** Analyze the topic, provide evidence, examples, justification, pros and cons
- **Conclusion:** Briefly summarize, make suggestions

Chapter 10
Body Composition – Sports Nutrition – Clinical Nutrition

Discussion

Task 1 Answer the following questions

1. Which methods of measuring Body Composition do you know?
2. What do the acronyms BIA and DEXA stand for?
3. What does a Sports Nutritionist do? What does a Clinical Nutritionist do?
4. What does paraphrasing mean? Why is it necessary in academic writing?
5. What are the steps for effective summarising?

Paraphrasing

- While trying to support your point of view in your writing, you may want to use the ideas of another person. In order to do that, you have to paraphrase; to express the same meaning of the text you want to borrow, in your own words. You can change the syntax, grammar or structure of the sentences for effective paraphrasing. Always write in your own style. Always provide the source.
- As soon as you decide that you want to use a text, read it carefully and then you can apply a combination of the following techniques:

- Summarise the text without using the same words or phrases. You can replace them with synonyms but do not change specialised vocabulary.
- Identify the way in which the words and sentences are related to each other and express these relationships in a different way. Use appropriate signal words.
- Change the position of the subject and/or object, change the order of main and subordinate clause.
- Change the voice: from active to passive and vice versa.
- Change the grammar: verbs to nouns, nouns to verbs, adjectives to adverbs, adverbs to adjectives.
- Join short sentences or break up long ones.

Reading Measuring Body Composition

- It is critical to figure out whether a person has too little or too much body fat as both conditions are important for a person's long-term health. Typically, body fat is expressed as a proportion of total body weight (percent body fat). Gender, age and level of activity play a big role in determining % fat reference values. Men have a smaller percentage of fat than women, although fat levels tend to rise with age, especially among those over 40. Women require approximately 10% to 13% essential fat, whereas men require approximately 2% to 5%. **Essential fat** is also required for the generation of sex-specific hormones in women.
- As one might expect, athletes and individuals who are physically active are slimmer and have a lower body fat percentage than those who are not.

- However, everyone has a specific amount of body fat that is necessary for good health and is referred to as essential body fat. The heart, lungs, liver, spleen, kidneys, intestines, muscles, and the central nervous system contain essential fat.
- High fat levels are linked to a variety of health issues, including cardiovascular disease, type 2 diabetes, **metabolic disorders**, and several types of cancer. Other complications, such as joint difficulties (e.g. osteoarthritis), restricted functional movement, and diminished independence, might arise as a result of long term obesity. Low quantities of fat, on the other hand, might be troublesome, especially in women. Women with too little fat are more likely to have a shorter or nonexistent menstrual cycle, lower oestrogen levels, and poor bone formation. This can increase the chance of having osteopenia and osteoporosis later in life, despite participating in activities that are associated with bone health, compared with other women of a similar age.

Clinical researchers deal with body composition and determining body fat.

- **Currently**, there are a number of different methods to measure body composition, all of which must be carried out and assessed by specialised administrators. The most common ones are: **dual energy X-ray absorptiometry (DEXA), underwater weighing (UWW), skin-fold thickness (SFT), body mass index (BMI), bioelectrical impedance analysis (BIA), isotope dilution (ID).**

Bioelectrical Impedance Analysis (BIA)

(BIA) which is based on the **principle** that **electrical current** applied to the body will meet greater resistance with more fat, is an **accurate**, portable and **non-invasive** method of estimating body composition. **Lean body tissue** has a greater water and **electrolyte** level, lower **electrical resistance,** and greater **conductivity** than **adipose tissue**. Procedure: The BIA analyser's electrodes are attached to fingers and toes. Electrical current flows into the body. The lower the **electrical impedance**, the greater an individual's lean body mass. Data about the person's height, weight, daily activity and body frame size are input. 10 minutes later, the device produces information about body composition. Because of normal fluctuations in body water, hydration status must be **assessed** before BIA is performed, otherwise it might lead to inaccurate results.

Dual Energy X-ray Absorptiometry (DEXA)

- **(DEXA)** is a precise method of **quantifying** the skeletal and **soft tissue components** of **body mass,** that requires a **specialised administrator**. It provides a direct measurement of body composition, whereas other common methods **make predictions** based on **variables** indirectly related to body composition. Procedure: the person is scanned with **photons** that are generated by two low-dose x-rays at different energy levels. The body's absorption of the photons at the two levels is measured. The ratios can be then used to predict **total body fat, fat-free mass,** and total body **bone mineral**. It lasts about 10′ – 20′. **Drawback:** The body is exposed to a small amount of radiation.

- Taking **Skin Fold Thickness** measurements is a common method used for determining body fat composition. **Assessment** can be done using four to seven **sites** (parts of the body). The technician **pinches** the skin and uses the **skin calliper device** to measure the **thickness** of the skin fold for each site. The numbers are **plugged into** a **formula** and body composition is **estimated**. **Drawbacks**: **Body fat distribution** and inexperienced technicians can affect the **accuracy** of the measurement

- **Underwater weighing** or **Hydrostatic weighing** is based on comparing a person's **bodyweight** (outside the water) to the same person's weight while completely **submerged.** Along with the **density** of the water, operators can **trace** the person's density which is then used to estimate body composition.
  Drawbacks: **inconvenient** and expensive method

- The **Body Mass Index BMI** quantifies the amount of **tissue mass** (muscle, fat and bone) of a person and **accordingly** categorises him/her as **underweight** (under 18,5), normal weight (18.5-25), overweight (25 to 30) and obese (over 30).
- Drawback: not accurate enough

- **Isotope dilution (hydrometry):** A dose of water containing **deuterium** is given and then, following **equilibration,** enrichment of the body's water is measured using samples of saliva, urine, or blood. Samples are generally analysed by **isotope** ratio mass **spectrometry**

Drawback: specialised knowledge is required.

Vocabulary Task 4. Match the words with the definitions

Body composition

Non-invasive

Conductivity

Impedance

Electrical resistance

Skin calliper device

Equilibration

Density

- Not involving the introduction of instruments into the body
- The property of a material to let electric current pass through it
- The degree of compactness of a substance
- The degree to which an object /material doesn't allow the passage of an electric current
- Resistance
- Counterbalance
- An instrument used to measure the breadth of a fold of skin
- The percentage of stored fat, water, bone and muscle in the body

Vocabulary Task 5 . Circle the correct word

1. **(UWW) / (SFT)** is carried out underwater**.**
2. Lean mass is the body's **fat free / fat** mass.
3. When the doctor saw the results of the blood test he decided to make some **principle/interventions.**
4. Some mathematical equations might be based on **variables/ conductivity.**
5. Fat is stored in **lean body tissue / adipose tissue.**
6. A person with a BMI below 18,5 is **overweight / underweight**.
7. Body fat **equilibration / distribution** is important while measuring body composition.
8. Scientific research requires careful **assessment / thickness.**
9. The female body needs **fat distribution/essential fat** for the production of sex-specific hormones.
10. **Lean body tissue/ Fat body tissue** has a lower electrical impedance, and greater conductivity than adipose tissue.

Sports Nutrition

- It is the study and practice of nutrition and food in relation to athletic performance . The role of macronutrients and micronutrients in exercise performance is critical. The physiology of exercise includes more than just energy production. Athletic success depends on proper nutrition for growth and development and for effective immune system function. Thorough research in the field of sports nutrition has revealed the interrelated roles of dietary carbohydrate, protein, and fat along with vitamins and minerals, and how they affect sports performance. Furthermore, the role of proper hydration (water and electrolytes) for optimal performance has been emphasised.

  Lastly, dietary supplements and ergogenic aids that athletes use in the hope of improving performance need careful evaluation.

It is the sports nutritionist’s duty to take into consideration all the above before planning and implementing, as well as while evaluating proper nutrition plans for their athletes. A sports nutritionist is in charge of advising athletes on the best types and amounts of food and fluids to consume in order to improve their athletic performance. It is also the responsibility of the sports nutritionist to select (if necessary) the proper supplements and extra nutrients to aid the athlete's body in resisting tough training and eventually performing at its best. Finally, sports nutritionists need to cooperate with athletes and coaches, as well as to analyse their performance and well-being in order to make necessary improvements and interventions.

Carbohydrates & exercise

- For best performance during both **intermittent high-intensity** work and **chronic endurance** exercise, adequate carbohydrate stores (muscle & liver glycogen & blood glucose) are required. Before, during, and after exercise, nutritional interventions to increase carbohydrate availability are recommended. Carbohydrate consumption before exercise can improve performance by replenishing muscle and liver glycogen stores. By maintaining blood glucose levels, carbohydrate oxidation & preserving muscle glycogen carbohydrate consumption during exercise can boost performance.
- **Carbohydrate availability during exercise:** Athletes who engage in low-intensity exercise should consume 3 to 5 gr of carbohydrate per kgr daily. Athletes who work out for 60′ daily at a moderate intensity should consume 5 to 7 g/kg per day. Athletes should ingest 6 to 10 g/kg/d throughout 1 to 3 hours of moderate to high-intensity endurance activity. Athletes who engage in moderate- to high-intensity endurance exercise for 4 to 5 hours per day or longer should consume 8 to 12 gr/kgr per day.

Proteins and exercise

The "explosive breakdown of protein molecules" was thought to be the source of energy for muscular contraction. Indeed, a study of daily dietary protein intake among some groups of athletes (e.g., bodybuilders, power and strength athletes) indicates that many athletes continue to believe in the **aforementioned** thesis, as evidenced by their excessively high protein intakes. Protein consumption, on the other hand, is typically regarded as insignificant in terms of delivering energy for muscular contraction by scientists and sports nutritionists.

During prolonged dynamic activity, for example, amino acids contribute just a small percentage of total energy (2%-4%). This is despite the fact that human skeletal muscle has the ability to oxidise at least seven amino acids during exercise, with the branched-chain amino acids—leucine, valine, and isoleucine—being the most oxidised. Despite the fact that exercise uses relatively few amino acids as fuel, it has a significant impact on muscle protein synthesis (MPS) and muscle protein breakdown (MPB).

Clinical Nutrition

- Clinical nutrition is the study of which nutrients are required for physiological function, as well as how what people eat affects their overall health and well-being. Clinical nutritionists aim at finding out if nutrients are properly digested, absorbed, and retained, as well as how many are discarded by the body. They also assess people's nutritional needs based on their family and medical histories, lifestyles, and laboratory tests, and offer diet and individual needs recommendations. Furthermore, CNs research how the environment affects food quality and safety, as well as how it influences people's health.
- In coordination with health care providers, CNs are responsible for recognising nutritional disorders, assessing nutritional status, and determining dietary restrictions in their patients. Then they create and implement therapeutic dietary menus to aid the patient's overall treatment and speed up recovery. Finally, CNs must monitor and adapt the diets advised in order to make them as successful as possible.

Task 8 Match the words with the definitions

1. **demanding training**
2. **promising career**
3. **Implement**
4. **medical history**
5. **individual needs**
6. **detrimental**
7. **hinder**
8. **feasible**
9. **substantiate**
10. **replenish**

a. a possibly successful development in somebody's work

b. sports practice requiring much effort

c. useful information about the condition of a patient in the past and the present

d. apply, put into action

e. a person's wants, tastes and demands

f. provide evidence to support or prove the truth of something

g. possible, likely to occur

h. harmful, damaging

i. inhibit, obstruct

j. restoration of a stock or supply to a former level or condition.

Academic Writing: Summarising

- Summarising a text, or extracting its key ideas into a paragraph or two, is both good writing practice, and a valuable research technique. A summary has two purposes: (1) to replicate the main ideas in a text and (2) to convey these key concepts precisely, using a limited number of words. It is important that all redundant information is omitted and that your personal opinion is not mentioned. Always remember to acknowledge the writer's work after summarising it.
- The following steps may be useful:

- **Pre writing**

Read the text until you have understood it well; what was the author's purpose in writing it? why are you summarising it? are you planning to use it to support your points or criticise it?

Locate the key concepts

While writing

In the first sentence make sure you include the title and the author's name.

Then, explain the main concept of the text, in your own words.

Paraphrase or use synonyms but do not change specialised vocabulary

Post writing

•Check your work. Read it out loud to find whether:
•You have included all main ideas
•You have conveyed them adequately
•You have not used the exact words of the writer
•It is not too long