

I eat well to stay healthy

1st Edition 2021 (REVISED)



Collective work supervised by
Eugene SOBNGWI

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Preface of the Minister of Secondary Education

Health, considered a state of normal functioning of the organism, is of constant concern to living creatures of the animal kingdom. It can be acquired or preserved by various means, sometimes psychological, physical or better still through physiological means.

It is for this reason that an ancient, learned scientist (Hippocrates) schematically summarized this concern when he postulated that: **health begins on your plate**, thus highlighting the crucial role that nutrition plays in the health of all individuals whether adults and children.

This concern did not leave the administrative authorities indifferent, who required from the Ministry of Secondary Education to define and lead a student health policy, which is equally a factor influencing their learning skills in the physical or intellectual domain.

I hereby thank our institutional partner: “*Recherche-Santé & Développement (RSD)*” who accepted to work with the Ministry of Secondary Education on this project by proposing to the educational community in general and to the students in particular, the present nutrition guide, a remarkable innovation in secondary school education.

This guide presents various types of foods and their health benefits.

It is an adequate tool in the search for a balanced and complete diet, which favours both the physical and the intellectual health of adolescents and adults.

I take this opportunity to encourage the education community in general, and the students in particular to take ownership of this book, for the statement “***mens sana incorpore sano***” to become a reality for our children in secondary schools.

Pauline NALOVA LYONGA, Ph. D
MINISTER OF SECONDARY EDUCATION



Preface of the Minister of Public Health

Cameroon like many other African countries is experiencing a speedy epidemiological transition. Hence, the burden of diseases is no more mainly comprised of infectious diseases and transmissible diseases of childhood, but also of chronic non transmissible diseases. Examples of these chronic diseases are: obesity, diabetes, cardiovascular diseases and all forms of cancers whose prevalence are constantly increasing. These diseases are linked to lifestyle, particularly physical activity and diet.

Our countries have a key role to sensitise populations, promote the practice of regular physical activity and ensure people have access to a healthy and balanced diet. Adolescence is the stage in life during which we establish and consolidate most of our habits, especially feeding habits. It is therefore the ideal time to acquire good knowledge and adequate practices on feeding.

So far existing books on nutrition are mostly from abroad and give us information on foods which we are not usually familiar to.

The team led by Professor Sobngwi puts at our disposal a guide which is accessible and adapted to our milieu, in which complex notions are presented in a clear and comprehensible way for every age group and for all socio cultural backgrounds.

We rest assured that an adequate usage of this document will contribute significantly to reduce the onset of these diseases and will constitute a solid foundation for a positive change in feeding habits in our society.

Dr . Malachie MANAOUA
MINISTER OF PUBLIC HEALTH



Contents

1 Why should I eat ?	1
Carbohydrates	2
Lipids	2
Proteins	3
Vitamins	4
Mineral salts and micronutrients	4
2 What does my meal contain ?	6
Fruits	7
Vegetables	8
Legumes (pulses and oilseeds)	9
Cereals and their derivatives	10
Tubers and starchy foods	11
Meats and eggs	12
Fishes, molluscs and crustaceans	13
Milk and dairy products	14
Fats and oils	15
Sweets and candies	16
Water and other beverages	17
3 How do I cook my food ?	18
4 When should I eat ?	19
5 Which quantities of food should I eat ?	20
6 Why is physical exercise good for my health ?	22
7 What are the consequences of a poor diet and physical inactivity on my health ?	23
8 Practical tips	25
Where can I get drinking water ?	25
Watch out for water borne diseases !.....	26
How should I wash my hands ?.....	27
How should I brush my teeth ?.....	28
Plastic bags	28
How do I read labels on food products ?	29
How to lighten my meal ?.....	31
9 Examples of daily meals	32
10 Self-evaluation	33

1

Why should I eat ?

To function optimally, my body needs air, water and food. The essential elements that my body needs can be found in a wide variety of foods that exist.

Generally, there are six (06) fundamental elements that make up food: lipids, proteins, carbohydrates, water, mineral salts and vitamins. These are called nutrients.

Three of these nutrients provide energy measured in Calories (kcal). We call them energy yielding nutrients. They are the lipids, carbohydrates and proteins. They are important constituents of my diet and play an essential role in growth. Mineral salts and vitamins are called non-energy yielding nutrients.

All the types of nutrients are indispensable for health. An excess or a deficiency in any of these nutrients can lead to various diseases. Therefore, my diet has to be balanced and diversified to contain all the nutrients.



Note

A gram of lipids yields 9kcal, a gram of carbohydrates yields 4kcal and a gram of proteins yields 4kcal.



Carbohydrates

They are the most abundant nutrients in the foods I eat. They are my principal source of energy. Carbohydrates are made up of molecular subunits called “sugars” or a combination of sugars. They can be classified in two groups: simple and complex sugars.



- **Simple sugars or simple carbohydrates** are easily digested by our organism. They are also known as “rapidly digestible carbohydrates”. Simple sugars can be found principally in table sugar, soft drinks, candies and honey. It is easy to eat a lot of it because of their sweet taste, but they can be dangerous for my health. For example, they can make me gain weight and are bad for my teeth.

- **Complex sugars or complex carbohydrates** are made of many units of simple sugars. They are not necessarily sweet. They provide energy progressively to the organism because they are digested slowly. They are also known as “slow carbohydrates”. Complex sugars are found in cereals, tubers, vegetables and legumes. Complex sugars found in vegetables ease digestion and are excellent for health.

I prefer to eat more complex carbohydrates than simple carbohydrates to be in good health.



Lipids

Lipids are also known as fats. They are the highest energy yielding nutrients.

They have essential roles in the body. They constitute the principal energy reserve. They are a major component of cell membranes and protect internal organs.

They help in inter cellular communication and in the functioning of many organs.

When taken in excess, they can lead to unhealthy weight gain. Cardiovascular diseases and many other diseases can also be caused by excess lipid intake.

There are four main groups of lipids that are found in my food: unsaturated fatty acids, saturated fatty acids, cholesterol and trans fatty acids. Saturated fatty acids and trans fatty acids are bad for my health.

- Unsaturated fatty acids are fats found mostly in vegetable oils like soybean oil, colza oil, olive oil, corn oil, fish, and certain fruits like avocados. They are excellent for my health when taken in moderate amounts because they protect my blood vessels and reduce my risks of cardiovascular diseases. **Unsaturated fatty acids called Omega 3 and Omega 6 fatty acids are best for my health.**



- **Saturated fatty acids** are fats of animal origin like butter, dairy products and meats. They increase the risk of cardiovascular diseases hence are not very good for my health.
- **Cholesterol** is useful for the appropriate functioning of my body but I should not take it in excess. To control my intake of cholesterol, I have to watch my intake of sources of fats (red meat, fried eggs, fastfood, eggs).
- **Trans fatty acids** are fats that are very bad for my health. They are produced from excessive heating of good fats. This happens for example when palm oil is heated excessively until it bleaches. Frying oil used multiple times also contains a lot of trans fatty acids, because excess heat destroys good fats and converts them into bad fats.

● Proteins

Proteins are important nutrients that are assembled to make up the different structures of the body. They are like the building blocks of a house. In addition to providing building blocks for my body, proteins also take part in each of these functions: digestion, circulation, excretion, energy production, movement, reflection...

Proteins are made of sub units called amino acids. Amino acids can either be synthesised by my body or be obtained from my diet. Some amino acids can only be obtained from food, they are called essential amino acids.

My diet has to provide adequate amino acids in quantity and quality.

Dietary proteins are divided into two groups depending on their source: animal and plant.

- **Proteins of animal origin** are found mostly in meat, fish, egg and dairy products.
- **Proteins of plant origin** are found mostly in legumes (beans, soy, peas) and cereal (rice, corn, wheat).

Proteins of animal origin are richer in amino acids than proteins of plant origin, but their digestion produces more waste products. Vegetables also contain a lot of other nutrients that are excellent for my health.

Therefore, I prefer to eat more plant proteins than animal proteins.

Some individuals only eat proteins of plant origin, they are called vegetarians.



● Vitamins



Vitamins are non-energy yielding nutrients which are required in very small amounts for the proper functioning of our body, but they can not be synthesised by our organism.

There are six major groups of vitamins: A, B, C, D, E and K. A prolonged deficit in any of these can affect my health negatively.

Fruits and vegetables are the major sources of vitamins, but most foods contain them. Vitamin D which helps to have solid bones is synthesised exceptionally by my skin when exposed to sunlight.

I prefer to eat fruits and vegetables regularly and have a diversified diet to make sure I obtain all the vitamins my body need.

● Mineral salts and micronutrients

Mineral salts and micronutrients are also **non energy yielding nutrients** needed in small amounts by the organism. The organism absorbs them from the food I eat, with high precision (sometimes few micrograms), the quantity of micronutrients that it needs.

The principal mineral salts and micronutrients necessary for the organism are: **sodium, potassium, calcium, phosphorus, iron, zinc, copper, iodine and fluoride.**

Calcium for example is useful to increase the strength of my bones, iron is an indispensable component of my blood and fluoride helps to fight against tooth decay (dental caries).





« Let thy food be thy medicine »
Hippocrates

2

What does my meal contain ?

What I eat can be divided into many groups :

1. Fruits
2. Vegetables
3. Legumes (pulses and oilseeds)
4. Cereals and thier derivates
5. Tubers and starchy foods
6. Meat and eggs
7. Fishes, molluscs and crustaceans
8. Milk and diary products
9. Fats and oils
10. Sweets and candies
11. Water and other beverages



Fruits

Thousands of different fruits exist all over the world. They are usually sweet and fleshy, but they have a variety of tastes and textures. Fruits are good sources of vitamins, minerals, and dietary fibres (help in digestion). They are the ideal food if I feel a little hungry.

I can eat a fruit as a whole fruit, or as fruit salad, when taking a meal or as a snack.

Tips

Fruits are sometimes expensive, I can choose to eat those that are available and cheap: these are seasonal fruits.

Recommendations

- *I have to eat at least one fruit par day.*
- *I have to wash fruits well with clean water before eating them.*

Watch out !

Fruit juices do not replace fruits in a balanced diet. Fruit juices contain the sugar found in fruits, but have lost some of the vitamins, minerals and dietary fibres.



● Vegetables

Vegetables are foods that exist in the form of fruits (tomato), leaves (cabbage, *folong*, *zom*, *njama njama*), roots (carrots, onions), stem (celerics, leeks), or flowers (cauliflower). They are rich in vitamins, minerals and fibres. They have a low energy content.

Vegetables are important to prevent deficiencies in vitamins and iron in children and pregnant women, as well as many other diseases (diabetes, cardiovascular diseases, and certain cancers).

💡 Tips

- Ideally, I have to eat vegetables every day.
- Vegetables lose their nutritive value when stored or cooked for a prolonged period of time. Therefore it is advisable to eat them fresh, wash with clean running water without soaking and reduce the duration of cooking.

⚠️ Watch out !

I have to cook vegetables with little or no oil or fats, and limit the use of mayonnaise dressings in salads.



● Legumes (pulses and oilseeds)

Pulses also known as “legumes” are seeds produced from leguminous plants (beans, soy and lentils). They are rich in complex carbohydrates, plant proteins, vitamins and minerals.

I eat dry legumes to have energy and to ensure an adequate growth of my muscles and brain.

Oilseeds are nuts and grains from which oil can be extracted (groundnut, palm nut, cashew nut, egusi ...). They have comparable amounts of proteins and mineral salts, but higher amounts of lipids compared to dry legumes.



Tips

- I eat legumes regularly to have sufficient amounts of plant proteins, which are excellent for my health (cheaper and healthier than meats and dairy products).
- To prevent overweight, I have to avoid eating a lot of oil seeds (groundnuts).



● Cereals and their derivatives

Cereals (wheat, rice, corn, sorghum, millet...), their derivatives (flour, semolina) and foods made from them (bread, pasta, *foufou*...), are rich in complex carbohydrates (slow carbohydrates) which provide energy. They also contain vitamins, mineral salts, dietary fibres, which are excellent for digestion, and very little fats.



Did you know ?

- Foods made from whole or unpolished grains (grains whose outer coating has not been removed like brown bread, **unpolished corn *foufou***), contain more dietary fibres, mineral salts and vitamins than foods made from refined cereals (white bread, white rice ...). **Therefore, I choose brown bread and unpolished corn *foufou* each time I have the opportunity.**
- Doughnuts and other pastries are made from flour derived from cereals but are excessively rich in fast carbohydrates and lipids. I limit their consumption.

● Tubers and starchy foods

Tubers also known as starchy foods are obtained from plants with edible roots. Examples are: cassava, sweet potato, yam, irish potato, cocoyams... Tubers are rich in slow carbohydrates, especially starch.

Tubers are generally eaten boiled, fried or in other forms such as *miondo*, *bobolo*, *mitoumba*, *garri*... They can also be dried, transformed into flour and eaten in the form of *foufou*



Tips

Chips (fried plantains, potatoes...) contain a lot of bad fatty acids (*trans fats*), so I have to limit their consumption.



Watch out !

Tubers are very poor in mineral salts and vitamins! A diet consisting mainly of these foods will quickly lead to grave deficiencies.



Did you know ?

Plantains are classified in this group, even though they are actually fruits, because their characteristics and uses are similar to those of tubers.



Meats and eggs

Meats and eggs are rich in animal proteins. We have red meat and white meat.

Red meat is particularly rich in a protein containing iron in myoglobin, which gives the meat its red colour. Therefore, it is rich in iron, but also in vitamins B and fats (mostly saturated fatty acids). The fatty content depends on the part of the meat that is eaten. The skin is the part that has the highest amounts of fats. Beef is a good example of red meat.

White meat is similarly rich in proteins, but it contains less iron and is generally healthier. Examples are rabbit, calf meat and poultry.

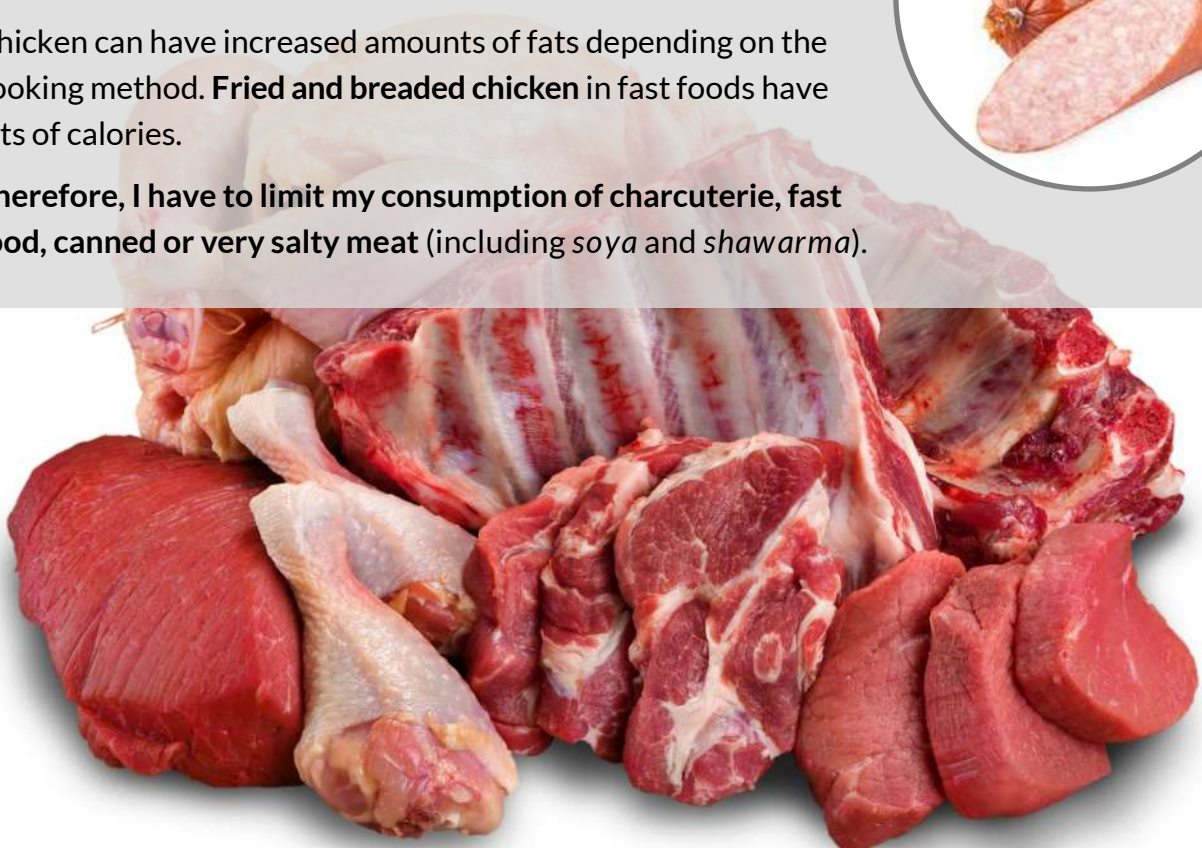
Eggs from poultry are rich in proteins (containing essential amino acids), vitamins, mineral salts and some lipids. The nutritional composition makes them a food of choice.

Did you know ?

- The disease called gout and some cancers are favoured by excessive intake of red meat.
- As a source of protein, meat can be replaced by proteins of plant origin like beans or soy. Plant proteins are easily assimilated by our body.

Watch out !

- Meats or organ meats can be transformed into **charcuterie** (ham, sausage, pâté) which are **very rich in fats and salt**.
- Chicken can have increased amounts of fats depending on the cooking method. **Fried and breaded chicken** in fast foods have lots of calories.
- **Therefore, I have to limit my consumption of charcuterie, fast food, canned or very salty meat** (including *soya* and *shawarma*).



Fishes, molluscs and crustaceans

Fishes are a large group of aquatic vertebrate animals that are usually covered with scales. They can be reared (pisciculture) or captured in their natural environment (fishing). Fish contains approximately the same amount of proteins as meat.

A distinction is made between lean fish and fatty fish. The main fatty or oily fishes are sardine, mackerel, trout, herring, tuna and salmon. They are rich in unsaturated fatty acids which reduces cardiovascular diseases and certain cancers.

Molluscs and crustaceans are rich in proteins, vitamins and mineral salts. They have low saturated fats and caloric content. Their proteins are easy to digest. Molluscs and crustaceans frequently consumed in Cameroon are snails, crabs, prawns, crayfish and lobsters.

Did you know ?

- The risks linked to the consumption of red meat are absent from a diet composed principally of fish.
- **Insects (termites, crickets ...)** and some **edible insect larvae (caterpillars)** are also excellent sources of animal proteins. The larva mostly consumed in Cameroon is the **Palm weevil grub**.



● Milk and dairy products

Milk and dairy products (cheese, yogurt, cream) provide proteins, saturated fats, vitamins and minerals in our diet. They are rich in a sugar called lactose, and are excellent sources of calcium which is indispensable for solid bones and teeth.

Dairy products described as light, skimmed or semi skimmed have reduced or not fat content. This is done by removing the cream which is the part of milk that contains fats.

Yogurt is a milk-based product made by fermentation (curdling) using specific bacteria. Cheese is also a dairy product made from curdled milk or cream rich in proteins and saturated fats.



I prefer to take dairy products regularly (yogurt or cheese), to have solid bones and teeth.

Did you know ?

- Breast milk is sufficient to cover all the nutritional needs of a new-born during the first six months of life. Exclusive breast feeding is highly recommended during these first six months .
- Soy is a good alternative to milk as a source of calcium if I don't like milk or if I have lactose intolerance.
- In Cameroon, the most common handcrafted yogurt is called "**Kossam**". It can be made from whole milk (**Kindirmou**), or from skimmed milk (**Pendidam**).



Fats and oils

Fats and oils refer to all foods that are rich in lipids (fatty acids particularly), whether of animal or plant origin. They improve the taste of foods.

- Butter is a product obtained from the transformation of the fatty part of milk (cream). Butter contains less lipids than oil, and is richer in proteins and carbohydrates. It also contains vitamins A, D and E. Butter is rich in saturated fatty acids and contains cholesterol. Therefore, it should be taken in little amounts.
- Do not confuse butter and margarine. Margarine is of vegetable origin. It is an emulsion of water and vegetable oil, with a lower lipid content. It is sometimes fortified with **Omega 3 fatty acids**.
- Mayonnaises are cold sauces made from vinegar, egg yolk and oil. The nature of fatty foods depend on the oil used to manufacture them.

Tips

- All fats and oils are rich in energy and favour weight gain. To have a healthy diet, I prefer to eat a little amount no matter the type .
- **I avoid eating oil that has been excessively heated, I limit the reuse of frying oil and prefer cold pressed oil to refined oil to avoid bad fats (trans fat). Frying oil should NEVER smoke!!!**

Did you know ?

- Palm oil is obtained from the pulp of the palm nut. Its high content in vitamin A gives it an orange colour.
- Palm kernel oil is different from palm oil. It is obtained from the kernel of the palm nut. It is not edible but is very useful in cosmetics.



● Sweets and candies

Sweets, pastries and soft drinks are rich in simple carbohydrates. They are not a component of a balanced diet.

The sweet savour of soft drinks and candies makes it easy for them to be taken in large quantities, which is harmful for my health (increased risk of obesity, diabetes, cardiovascular diseases, and certain types of cancers). Sugar also facilitates the development of tooth decay because it is easily used by the bacteria in the mouth.

I can take them once in a while for pleasure, in moderate amounts.

There are also some delicacies used as appetisers in the form of cookies, nuts and toasted cereals. These are foods that are often highly energetic but which do not lead to satiety.

💡 Tips

- Avoid foods that are sweet and salty: pastries, milk chocolate, donuts ...
- I show that I have control on my diet by eating sweets for example only on Wednesday afternoons, or Sundays or when I have a good mark in a difficult subject.
- I can replace candies and sweets by carrots, yogurt, apples, bananas or other fruits .



Water and other beverages

Water is indispensable for life. Our organism is 60 – 70% made up of water. I need to drink at least 1.5 litres of potable water per day to satisfy my body's needs because I lose water through sweat, urine and respiration. This amount corresponds to approximately 6 glasses.

I can choose from a variety of drinks but water is the best option.

Some beverages like **herbal teas** can be obtained by infusing the leaves, flowers, stem, bark and roots of various plants. These drinks provide water, some vitamins and mineral salts. **Fruit juices** are drinks made up of 100% of pressed fruits. **Nectars** are classically composed of 25 to 50 % fruits. Fruit juices and nectars are rich in sugar, vitamins and mineral salts, but have lost the dietary fibres found in fruits.

Soft drinks available in the market are actually sodas (carbonated water, aroma with or without added sugar) and not "juices". They rarely contain small amounts of fruit extracts. They are mostly composed of aromas, sweeteners, colorants, preservatives and sugar (equivalent of 20 to 30 cubes per litre). **I have to limit their consumption.**



Tips

- I have to drink at least one and a half litre of water per day.
- I limit my consumption of sodas and I preferably drink potable water.
- I can change the taste of water by adding pressed fruit juice.

Did you know?

- Fruit juices don't have dietary fibres contained in whole fruit and contain large quantities of simple carbohydrates. Hence the saying "***It's better to eat fruits than to drink them***".
- **Alcoholic beverages are all harmful for my health no matter the amount I drink. I absolutely have to avoid them.**



3

How do I cook my food?

Some foods like fruits and vegetables are eaten raw. This is ideal to keep all the nutritive value of the food. I however have to wash these foods very well with clean water to avoid diseases. **Popular cooking methods in Cameroon are: boiling, steaming and smothering, grilling and frying.**



- **Boiling** is the most frequently used method to cook tubers, cereals, vegetables, eggs and fish. It consists of cooking food dipped in water that is then heated to boiling point, or in water that is already boiling.
- **Steaming** consists of cooking by way of the vapour that is produced by boiling. Our mothers do so by putting pieces of wood or a covered plate at the bottom of the pot that already contains a small quantity of water. Steaming preserves the majority of nutrients in food..
- **Smothering** involves cooking in a covered pan over low heat with a little amount of water. It is preferred for vegetables, hot-pots like *Kondrè*, puddings (*Egusi pudding, Ekomba, Koki, Ndomba*). It's an excellent cooking method for preserving nutrients, vitamins and flavour of food.
- **Grilling** involves roasting food at a very high temperature on a grill. Used for meats, fish, tubers and some cereals (corn), it presents health risks, linked to smoke and charring of meats. I limit its use and I do not place the food too close to the embers.



- Certain foods can be **cooked in ash** such as plums, nuts, tubers. It's a good cooking method
- **Frying** is the least healthy method of cooking. It destroys nutrients and adds oil whose quality has been altered by the heat. This method also adds a lot of lipids to the food. To preserve my health, I significantly reduce my consumption of fried foods. An alternative method consists of stir-frying the food in a pan with a little amount of oil.



Did you know ?

Salt and seasoning extracts (bouillon cube, arôme) add flavour to the food, but their high sodium content favours hypertension. I have to reduce my salt intake.

4

When should I eat ?

I should endeavour to eat thrice daily to have an adequate growth. I can take a snack if I feel a little hungry in between principal meals. It is important to take my meals at regular hours every day.

In the morning, I eat well, in quantity and quality, to have energy and stamina throughout the day. ***This is breakfast.***

Example of a breakfast: A piece of bread + a glass of milk (or yogurt or cheese) + a fruit (whole fruit or a glass of fruit juice) + water (or tea or coffee with little sugar) + fried eggs .

I eat towards midday to refill my batteries. ***It is called lunch.*** Lunch should be a heavy meal.

Example of a lunch: Starchy food or cereals (rice, pasta, tubers) + raw or cooked vegetables + a fruit + one to two glasses of water .

I take a meal in the evening to avoid being hungry during the night. ***It is diner.*** It should be lighter than lunch so that I can sleep well. Its composition is similar to that of lunch.

Example of a diner : Starchy food + legumes or vegetable sauce + fruit salad + one to two glasses of water.

If I feel a little hungry late in the morning or in the afternoon, I can take a little amount of food. ***It is called a snack.*** But if it happens often, then maybe I should take a heavier breakfast or lunch.

Example of a snack : A fruit or yogurt.



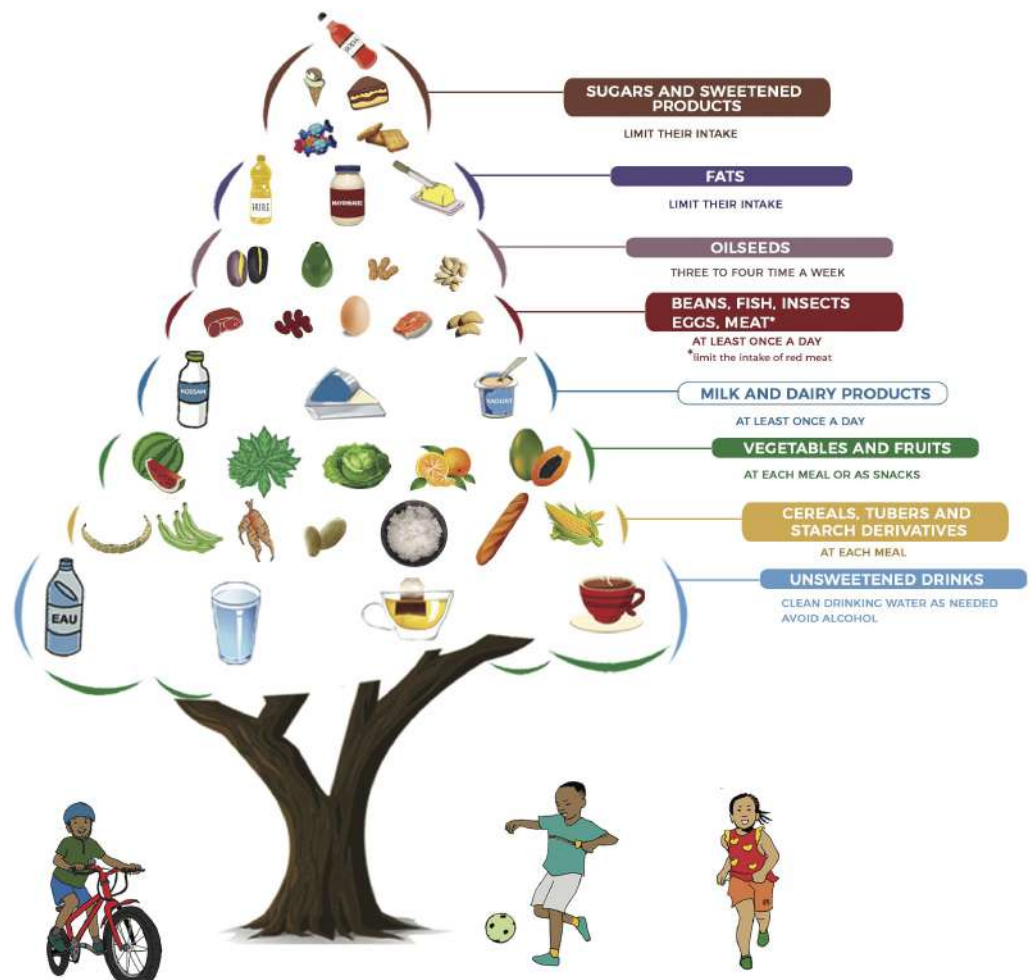
Watch out !

I have to avoid eating frequently in between meals. Sweets and candies taken frequently, lead to ***obesity*** and other diseases like ***tooth decay, hypertension*** and ***diabetes***

Which quantities of food should I eat?

Nutritional needs of young people are important in periods of growth. They also vary according to the sex of the individual (boys and girls have different nutritional needs), the age, physical activity and the health status. Nutritional needs are defined in terms of food servings.

- A serving of carbohydrates is for example half of an average sized plantain, 2 small potatoes, and two tablespoons of cooked rice.
- A serving of proteins corresponds to an egg, a piece of fish of the size of two eggs or a portion of meat of the size of an egg.
- A serving of lipids corresponds to a tablespoon of groundnut, *egusi*, butter or oil.
- A serving of fruit is approximately a mango, a banana, an orange, an apple, two tangerines, a slice of water melon, or five to seven cherries.
- A serving of vegetables is an average sized tomato, an onion, a handful of green beans, a big carrot, or two tablespoons full of leafy vegetables.



I CARRY OUT AT LEAST ONE HOUR OF PHYSICAL ACTIVITY A DAY

Tips

- I have to eat at least one fruit and one dairy product per day.
- My healthy plate must be made up of :
 - **1/2 of the plate** : vegetables and fruits
 - **1/4 of the plate** : cereals or tubers
 - **1/4 of the plate** : meats or fish or eggs or insects or beans or dairy products.



6

Why is physical exercise good for my health?

Physical activity is important because it strengthens my heart, muscles and bones. It contributes to the development and functioning of the respiratory system. Therefore, I have to practice physical activity regularly to be in good health.

In my adolescent years, I need to have at least 60 minutes of moderate or intense physical activity per day. Activities that require a lot of endurance (like fast walking, jogging, and cycling) are even better for my body: therefore, I choose to practice these activities. I can divide the total time of physical activity into shorter periods within the day.



Tips

What if I don't have the habit of doing physical exercise? I can start at a low pace (low intensity sport for a short period of time) and increase the time and intensity progressively. For example, I can start by doing 10 minutes of physical activity twice daily.

I regularly do domestic chores and farm work to be helpful and preserve my health.

I have to avoid being declared unfit for physical activity by fantasy. If my health really exempts me from physical activity, I try to do regular fast walking (at least five times per week), or I practice swimming.



Did you know?

Practicing regular physical activity reduces the risk of many diseases. These diseases are obesity, diabetes, cardiovascular diseases, certain cancers, depression, etc.

7

What are the consequences of a poor diet and physical inactivity on my health ?

Facts

We observe an increase in obesity, **cardiovascular diseases** (hypertension, cerebro-vascular accidents or strokes), **diabetes**, **gout** and **cancers** in the world in general and in Cameroon in particular. These diseases affect an increasingly higher number of people and at younger ages. The complications and management are excessively costly for these people, their families and the society.

Why?

We have widely adopted a lifestyle characterised by physical inactivity and a diet rich in bad lipids and simple carbohydrates.

Are these consequences avoidable ?

Scientists have clearly proven that practicing regular physical activity and having a healthy, balanced and varied diet can reduce all these risks by more than half.

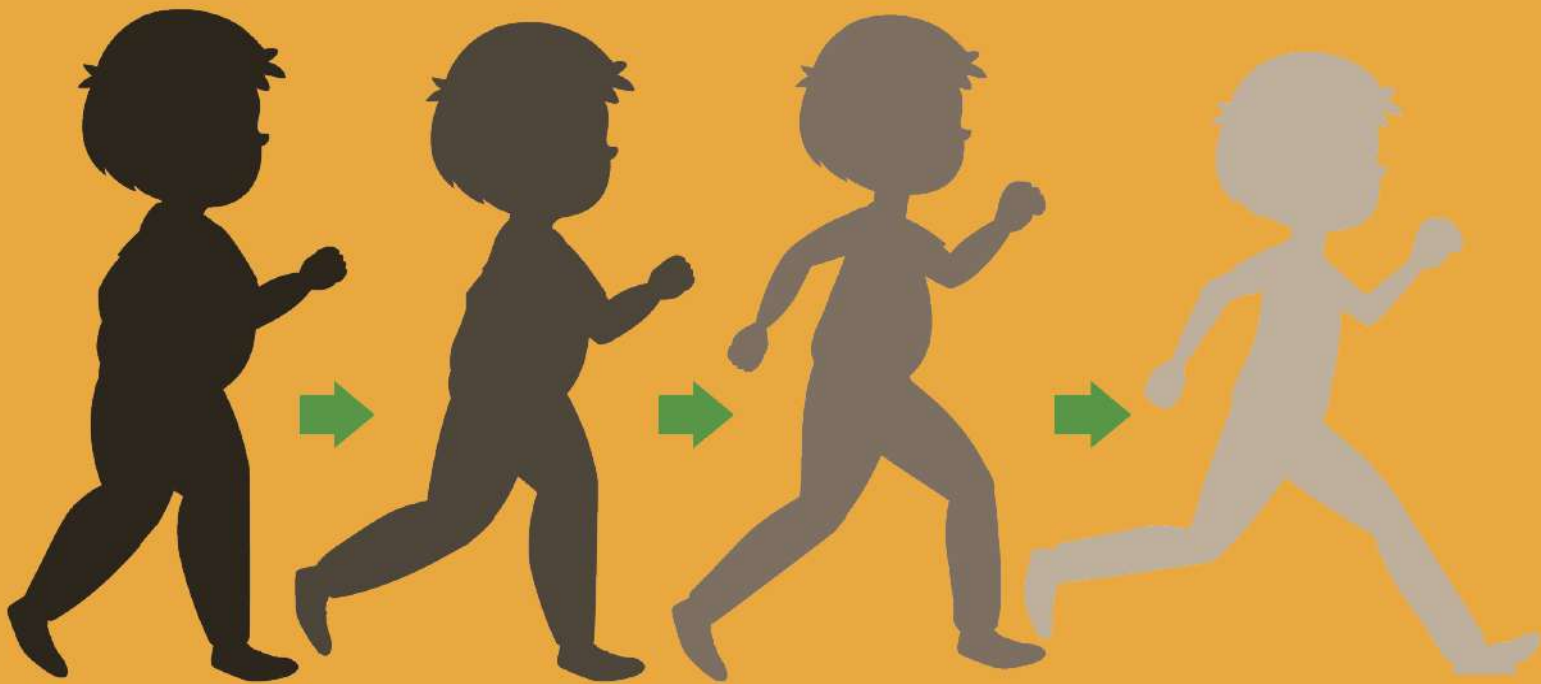


● I take a commitment

With me, these trends are going to change today !

By applying the recommendations of my nutritional guide, I will preserve my wellbeing and my health :

- I will eat foods of better quality,
- I will cook my meals using healthily cooking methods,
- I will carry out regular physical exercise.



What else can I do now to be in good health and ensure a bright future ?

- I totally avoid taking alcoholic beverages,
- I avoid all forms of tobacco (cigarette, chicha ...),
- I never try any illicit drug,
- I avoid all violent behaviour towards my classmates and teachers,
- I take medications only after medical prescription,
- I watch over my body and teeth hygiene,
- I avoid spending too much time in front of a screen (telephone, video games) and other connected devices.

8

Practical tips

● Where can I get clean drinking water ?

I can get clean drinking water from the tap or I take mineral water.

I don't have to worry if I don't have access to these sources of water: It is easy to make water drinkable, even with little means.

💡 How to purify water ?

- I use a clean container to carry water from a spring, well or borehole .
- I allow the water to stand for 2 hours for particles to settle at the bottom. Then, I put the overlying clean water in a 10 litres bucket.
- I divide this water in two portions of 5 litres each, and I add a teaspoon of bleach to one portion.
- Then, I mix back the two portions to constitute 10 litres again and that's it: I have 10 litres of drinkable water which I can use to wash foods, to cook or to drink !

I can also use tablets available in the pharmacy (AquaTab®, Sur'Eau®) to render water drinkable.

⚠ Watch out !

I have to follow strictly the amount of bleach to be added to water. I can ask for help from an adult.



● Watch out for water borne diseases !

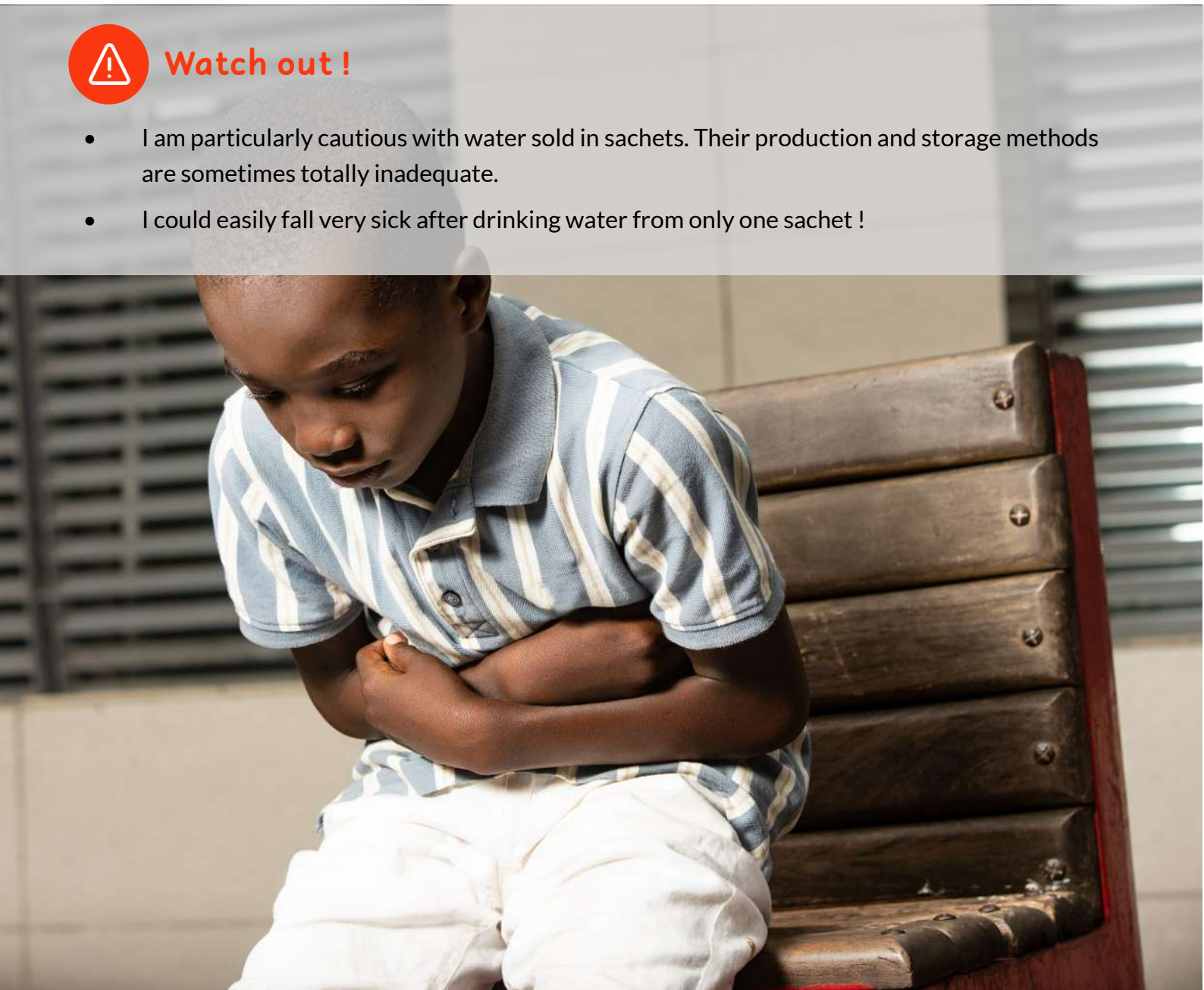
These are diseases linked to improper hygiene. To avoid them, we should keep our hands clean, drink potable water and use clean water to cook. Latrines should also be kept clean and covered.

Among these diseases, we have cholera which usually presents as epidemic outbreaks from a contaminated water source and spreads rapidly through contact with sick people; typhoid fever and amoebiasis, which are very frequent and transmitted by eating fruits or raw vegetables handled without respecting the rules of hygiene. Worms like tapeworm and roundworms are sometimes obtained from poorly cooked foods.



Watch out !

- I am particularly cautious with water sold in sachets. Their production and storage methods are sometimes totally inadequate.
- I could easily fall very sick after drinking water from only one sachet !



How should I wash my hands ?

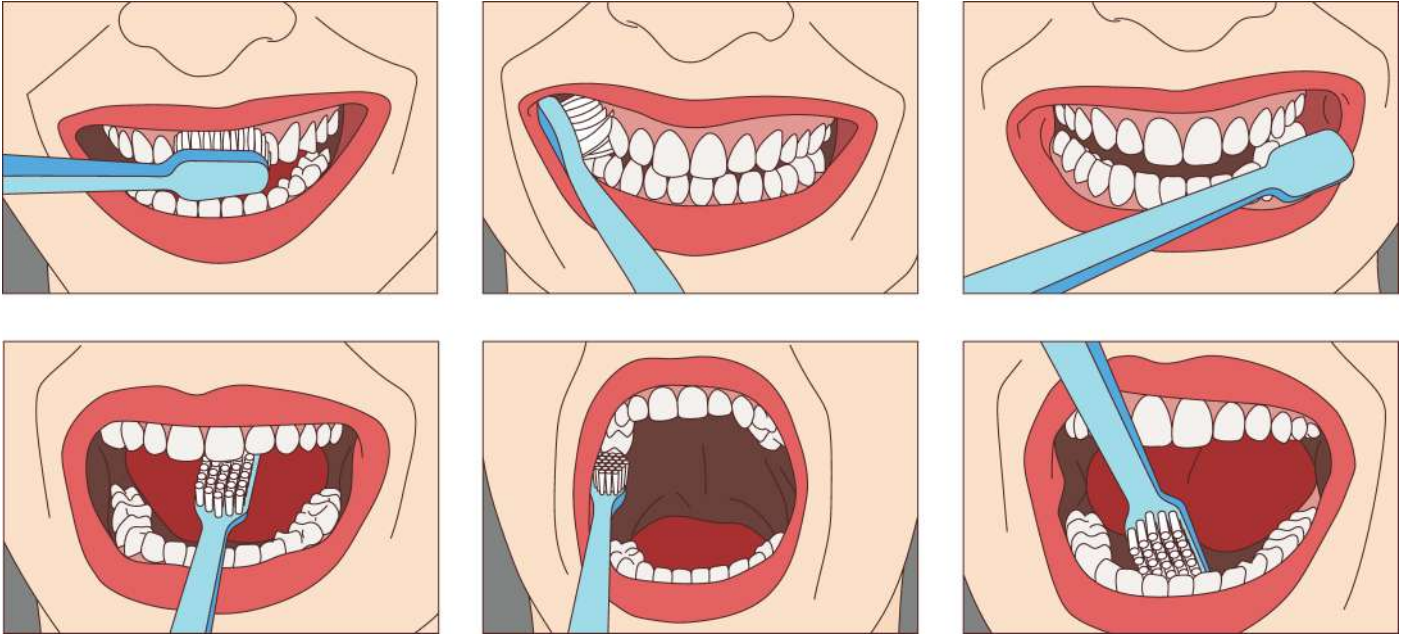
My hands have to stay clean. I have to wash them before and after meals. I also have to wash my hands after using the bathroom, before and after taking care of a baby, or a sick person.



● How should I brush my teeth ?

I protect my teeth by brushing them at least twice daily or after every meal.

I avoid using toothbrushes that are too hard.



● Plastic bags

I prefer not to wrap my food (especially hot food items) in plastic bags (nylon). By doing so, I avoid the contamination of my food with chemical substances, some of which can be toxic.

I can package my food in natural clean wrappings (paper, banana leaves, etc.).



● How do I read labels on food products ?

The labels found on food packaging give the composition of the food and can help me control my diet (nutrient intake).

When I find the label on a food product, I can read the quantities of the principal nutrients contained in the food. It also mentions the percentage of each nutrient in the food compared to my daily requirement for that nutrient.

The nutritional composition of the food is usually given for 100 g of food or 100 millilitres of drink. I do a conversion using the rule of thumbs to determine the amount of nutrients in the portion of food I want to eat.

- I first check the manufacturing and expiry dates.
- I identify the amount of glucose (sometimes called carbohydrates or sugar).
- I check the amount of dietary fibres (sometimes called indigestible sugars).
- I check the composition of fats. They are sometimes divided into three groups: saturated fats, unsaturated fats (mono or polyunsaturated) and cholesterol..
- I look for the protein composition.
- The total amount of energy in the food (in Calories) is sometimes mentioned on the label.

Once I have calculated the different amount of nutrients in the food, I must check if the product is good for my health.



Did you know ?

- It is mandatory to put labels on the packaging of all food products manufactured and sold in Cameroon.
- Some countries add nutritional value scores inspired from the food pyramid to ease the choice of consumers (example : **the nutriscore**® in France classifies foods in categories A, B, C, D or E. The healthiest foods are classified A and the least healthy are classified E).).
- There is an Atlas available online (www.rsd-institute.org) to get information about the composition of foods commonly consumed in Cameroon.



Practical example

The label shown has been taken from a 33 cL bottle. How do I calculate the nutritional composition?

How to exploit the information

The first thing I notice is that the composition is given per 100 mL. 100 mL corresponds to 10 cL. Therefore, we have to convert all the quantities given from 10 cL to 33 cL. To do that, I divide $33/10$ to obtain the figure by which I will multiply the nutritional values. This gives 3.3.

To obtain the **amount of proteins**, I multiply the value in 100 mL by 3.3. That is, $0.2 \times 3.3 = 0.66$ grams. This is the **amount of proteins** in this bottle of drink.

Following the same steps, I can calculate the **amount of carbohydrates**: $1.9 \times 3.3 = 6.3$ grams. For dietary fibres, I obtain $4.5 \times 3.3 = 14.9$ grams.

I notice that this drink contains a lot of dietary fibres. It has a low carbohydrate content: It is therefore a “light-energy” drink.



Composants pour 100 ml	
Composition per 100 ml	
Protéines/Proteins.....	0,2g
Glucides/Carbohydrates.....	1,9g
Fibres brutes/ Raw fibers.....	4,5g
Matières sèches/Dry matter.....	9,2g
MINÉRAUX/MINERALS	
Potassium/Potassium.....	0,7mg
Calcium/Calcium.....	0,2mg
Magnésium/Magnesium.....	0,5mg
Fer/Iron.....	0,6mg
Calories/Calories.....	0,835 kcal



Tips

You can do this exercise on different food products you have at home. You will have a lot of surprises.

You will notice that canned sardines are very rich in lipids. It is not only fish. You will also notice that a litre of soda contains 130 grams of simple carbohydrates, which corresponds to approximately 26 cubes of sugar!!! So after drinking just one litre of soda, you would have largely exceeded the recommended daily requirement in fast carbohydrates.

Try to discover other surprising facts by yourself...

● How to lighten my meal ?

It is not that difficult. To reduce the amount of calories in my meals, I have to reduce the amount of lipids and fast carbohydrates. To do that, I limit the intake of sweet and of fried foods.

Appetiser:

I must remember that soft drinks are rich in calories, therefore I limit their consumption. I also reduce my consumption of roasted and salty nuts and grains which are rich in fats and salt. Nonetheless they are better than chips.

Starter/entrée :

I replace mayonnaise or vinaigrette for salad dressing with lime juice or vinegar, or I use light vinaigrette which contains low amounts of lipids .

I avoid or limit charcuterie (sausage, ham, *shawarma*).

Main course :

I prioritise vegetable and soup, provided that they are not cooked with a lot of oil. Soups usually contain more calories. Dishes made with groundnuts or egusi are particularly rich in lipids, I should limit their intake.

Concerning animal proteins, I remove the skin from meat before eating it. Fish generally contains less fats than meat, therefore it is better. I limit my consumption of fried foods.

Dessert :

A yogurt or a fruit is far better than a piece of cream cake.

When shopping, I choose food items labelled “light”, “low-fat” or “no fat” at the grocery store.

Examples of daily meals

First example

Breakfast:

- 1/3rd of a bread (40 grams)
- 2-3 cooking spoons of stewed beans and 2 pieces of meat
- 1 glass of milk

Snack:

- 1/6th of a bread (20 grams)
- 1 boiled egg

Launch:

- 2-3 cooking spoons of **folon** with chopped meat
- 2 and a half fingers of ripe plantains
- 1 orange

Dîner:

- 2 cups of cooked rice
- 1/3 to 1/2 fish in tomato sauce
- 1 banana

Second example

Breakfast:

- 1/3rd of a bread (40 grams) with a spoonful of margarine
- 1 boiled egg
- 1 orange

Launch:

- Hot pot potatoes (5-6 average sized potatoes)
- Omelette with 2 eggs or a piece of meat
- 1 slice of pineapple

Snack:

- 2 bananas or 1 yogurt and 4 biscuits

Dîner:

- 2 boiled plantains
- 3 cooking spoons of **zom** with meat

Self-evaluation...

1

Onana took donuts, beans and pap this morning for breakfast. During break, he bought bread with sausage, mayonnaise and eggs and a pineapple flavoured soda (65cL). On his way home, he felt hungry and stopped at the store where he bought doughnuts and a soda (35cL). In the evening, he was served his favourite meal: groundnut paste **nnam wondo** with two **bobolo** !

Did Onana have a balanced diet during the day ? Why ?

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2

Dikoume had breakfast with the remaining **corn chaff** cooked the day before. During break in school, he took avocado and bread with water. When we got home, the meal was not yet ready. He just took a yogurt then started studying. After studying, **sangha** was ready, and he ate it with banana before going to watch the soccer game.

Is his diet balanced ? Why ?

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3

Ngum feels a little hungry on her way back from the market. She hesitates between taking doughnuts with **foléré**, or a mango with a yogurt that she found in the fridge.

What do you advice her to choose ? Why ?

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Self-evaluation...

4

Nono and Amadou are having a discussion before going for holiday. Nono says he is going to spend his holiday in the village, and that the diet there mainly consists of cassava, cocoyam, cassava leaves, banana and corn. Amadou is concerned that this diet might be unbalanced. Nono says it is not a problem because he read that eating a low-fat, low-sugar, and high-vegetable diet is better for health.

Who is right ? Justify.

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5

At the party, Sandrine laughed at Fanta who had fruit juice as a drink. She tells Fanta that she likes to have fun by mixing whiskey with soda. Fanta tells her that this mixture is catastrophic.

Help Fanta to explain why.

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6

Bakary has the habit of cycling for 30 minutes every evening except on weekends. Since it makes a total of less than three hours a week, he wonders if it's enough. His friend Achu tells him that it would be better to do like him, an intense 2 hour football game on Wednesday and Sunday afternoons. But Bakary isn't sure.

Who among the two has a more appropriate physical activity ?

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Self-evaluation...

7

Ngo Kamla's mates made so much fun of her because of her weight that she decided to go on a diet. Based on what she heard on TV, she stopped all fried foods and all sweet products. As she does not like doing physical activity, she decided to do gymnastics for 2 hours in the morning on weekends, and also decided to eat only natural products. She is happy because she is rapidly losing weight.

What do you think about her efforts?

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8

Tchinda is a sugar addict. He tried everything to stop, but he couldn't. His nutritionist told him that he could have a fairly balanced diet by consuming sweet things occasionally. But she gave him recommendations. So now he hesitates before making certain choices. **Can you help him?**

- What should he choose between a mocha cream and a bowl of fruit salad?
- What should he choose between a soda and fruit juice?
- What should he choose between a glass of pineapple juice and 2 slices of pineapple?

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9

Yanda has decided to become a vegetarian.

What advice can you give her to avoid the risk of nutritional deficiencies?

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10

Self-evaluation...

10

Effla likes long TV series, of which he watches several episodes in a row while eating chips.

Do you think this is a good idea, why ?

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11

My conclusion and my commitment.

How about you ? Which resolutions did you take while reading this guide ? What did you decide concerning your diet and physical activity ?

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My notes and my decisions

A series of horizontal lines for writing notes. The first line is a dashed orange line, followed by 25 solid black dotted lines.



My notes and my decisions

A series of horizontal lines for writing notes. The first line is a dashed orange line, followed by 25 solid black dotted lines.



My notes and my decisions

A series of horizontal lines for writing notes. The first line is a dashed orange line, followed by 25 solid black lines.



My notes and my decisions

A series of horizontal lines for writing notes, starting with a dashed orange line followed by multiple dotted black lines.



Professor Eugene SOBNGWI. MD, PhD, FAAS, FCAS

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