

FOOD-BASED DIETARY GUIDELINES FOR BELIZE





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Ministry of Health
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Forward of MINISTER

Acronyms

CNCD	Chronic non- communicable Diseases
INCAP	Nutrition Institute of Central America and Panama
FAO	Food and Agriculture Organization
CFNI	Caribbean Food and Nutrition Institute
Kcal	kilocalorie
FBDG	Food Based Dietary Guideline
HECOPAB	Health Education and Community Participation Bureau
QUADS	Quality Assurance Development Services
PAHO	Pan American Health Organization
BAHA	Belize Agricultural Health Authority
HFLE	Health and Family Life Education

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INSTITUTIONS REPRESENTED IN THE MULTI-SECTORAL GROUP

1. Ministry of Health

- Nutrition Unit
- Public Health Unit
- Health Education and Community Participation Bureau (HECOPAB)

2. Karl Heusner Memorial Hospital

3. Ministry of Agriculture

- National Food & Nutrition Security Commission

4. Ministry of Education

- School Health Unit
- Quality Assurance Development Services (QUADS)
 - ❖ Health and Family Life Educators

5. Belize Agricultural Health Authority (BAHA)

6. Nutrition Institute of Central America and Panama (INCAP)

7. Caribbean Food & Nutrition Institute (CFNI)

8. Pan American Health Organization (PAHO)

9. Private Nutritionists:

- Mrs. Sandra Collins
- Ms. Gilda Richardson

TASK FORCE MEMBERS

In order to provide support and advice in the development and implementation of the Food Based Dietary Guidelines, a Task Force was appointed. The Task Force comprised the following:

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INTRODUCTION

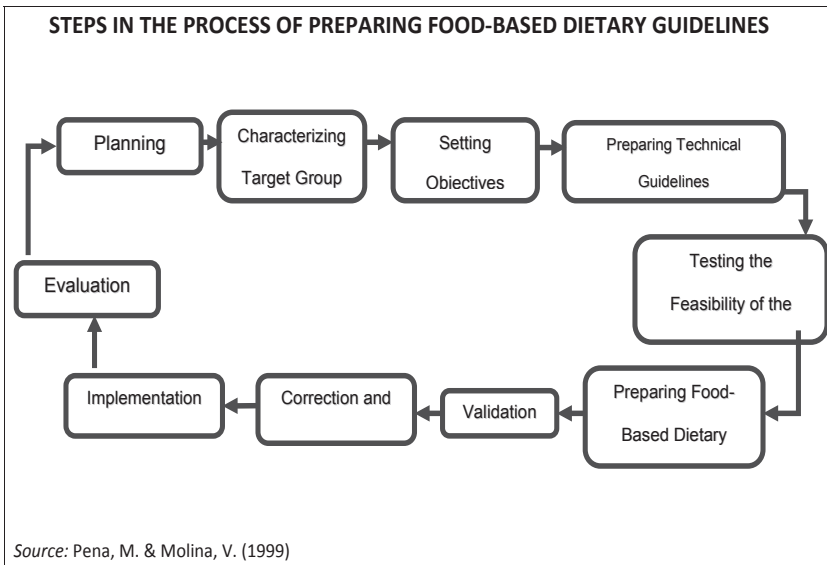
A National Food Based Dietary Guideline (FBDG) is an important educational tool that converts scientific information on nutritional requirements and food composition into simple, population-based language. The guidelines provide technical advice about ways to improve diets and health in a manner that is easy for the public to understand. It should be noted that the guidelines are developed for the general healthy population from two years of age upwards and can be used by health care providers, policy makers, community leaders, educators and the public at large.

The Food Based Dietary Guidelines for Belize are developed to meet the following population objectives:

- Encourage healthy food choices in respect of variety, quality and quantity
- Limit the intake of fat, sugar and sodium
- Reduce the prevalence of overweight and obesity
- Reduce the incidence and prevalence of chronic non-communicable diseases (CNCDs) among Belizeans
- Promote increased consumption of fruits and vegetables
- Improve the food handling practices of Belizeans
- Reduce the incidence and prevalence of micronutrient deficiency diseases
- Promote increased levels of physical activity among Belizeans

PROCESS USED IN THE DEVELOPMENT OF FOOD BASED DIETARY GUIDELINES

The process of developing Food-Based Dietary Guidelines consists of various detailed steps. The model used in Belize (Figure1) was developed for Latin America by the Nutrition Institute of Central America and Panama (INCAP) and published by Pena and Molina (1999), but was first published in Spanish by Molina et. al.(1995). A detailed documentation of the process used in developing FBDGs in the Caribbean can be found in the FAO publication: *Developing Food-based Dietary Guidelines: A manual from the English-speaking Caribbean* (FAO 2007).



The Body's Need for Food and Nutrients

Macronutrients – Carbohydrates, Proteins, Fats

CARBOHYDRATES: They provide the basic fuel for our bodies.

Functions:

As an Energy Source – We get about 4 calories (units of energy) from every gram of carbohydrate we eat. Many carbohydrate foods can be grown all year round. These food sources are often inexpensive.

As a Primer – Carbohydrates serve as a “primer” for the body to utilize fat, which provide the major part of the body's energy.

For Sparing Protein – The calories from carbohydrates allow the protein to be “spared” for its vital function - body-building and repair

Food sources:

- ❖ All local provisions e.g.- banana, breadfruit, cocoa, plantain, sweet potatoes, cassava
- ❖ Cereals e.g. – oats, rice, flour
- ❖ Pasta

PROTEINS: Form part of all living organisms.

One (1) gram of protein provides the body with four (4) calories.

Functions:

Growth, development and maintenance of the body – proteins provide the body with materials for the growth of new tissues and for replacing old and worn out tissues.

As a source of energy – when the body does not have enough carbohydrates and fats, protein is used to provide energy

Provision of important body materials:

Enzymes – which help the body use food

Hormones – which help regulate body functions

Antibodies – which guard against diseases

Food sources:

- ❖ All foods from animals e.g. – Meat, fish, milk, eggs, cheese
- ❖ All legumes e.g. – red kidney beans, lentils, black beans, pinto beans

FATS: Fats are important to the body for various reasons. Note, however that they provide the most energy from food in that one (1) gram of Fat provides nine (9) calories. Fats are solid at room temperature while oils are liquid at room temperature.

Functions:

- ❖ Source of Energy
- ❖ Protect vital organs and keep the body warm in cold environments
- ❖ Needed for the body to absorb and use Vitamins A, D, E and K
- ❖ Form part of the body's structure and provide important chemicals that the body needs for proper functioning
- ❖ Add flavour to food.

Food sources: All fats and oils, avocado, coconut, peanuts, cashews, peanut butter, meats and poultry with fat.

Micronutrients – Vitamins, Minerals

A. Vitamins: A group of nutrients which are necessary for normal growth and the maintenance and repair of body cells. The group is divided into *Water soluble* and *Fat soluble*

- i. *Water soluble vitamins:* Vitamin C and the B Vitamins. These vitamins are quickly absorbed into the blood and body cells. Excesses of these vitamins are not stored by the body but are passed out in the urine. Therefore we need to include these vitamins in our diets every day.

Food sources:

B Vitamins – beef, pork, whole grain legumes, nuts, milk, fish, vegetables, eggs

Vitamin C – fruits especially citrus fruits, (oranges, grape fruit, limes), guava, and vegetables especially tomatoes, sweet peppers, cabbage

- ii. *Fat soluble vitamins:* Vitamins A, D, E, and K are all Fat soluble vitamins. These vitamins are absorbed into the cells of the body very slowly. Excess amounts of these vitamins are stored in the liver to meet later needs.

Food sources:

Vitamin A – green and yellow fruits and vegetables, milk, butter, liver, fish, oils, cheese

Vitamin D – cod liver oil, eggs, dairy products

Vitamin E – seeds, green leafy vegetables, margarines, shortenings

Vitamin K – Green leafy vegetables

B. Minerals: Minerals are substances which the body needs in very small amounts. Minerals are used to speed up chemical processes such as digestion and absorption in the body. Minerals can be divided into two groups – macro and micro Minerals.

Macro-Minerals: Iron, Calcium, Potassium, Sodium,

Micro-Minerals: Zinc, Iodine, Fluorine

Functions: Minerals help to:

- keep bones and teeth strong
- regulate vital processes such as digestion
- use of oxygen for energy and growth.

Food sources:

Iron: Dark green leafy vegetables, liver, peas and beans

Calcium: Milk, sardines, dark green leafy vegetables

Potassium: Fruits, vegetables, coconut water

Zinc: Meats, eggs, whole grains

Sodium: Table salt, processed foods, some drinks, salty snacks

Iodine: Sea water fish, iodized salt

Fluorine: Drinking water

Water: Although not technically called a nutrient, water is very important to the body. Two- thirds of the human body is composed of water

Functions:

- ❖ Serves as a transport system for all nutrients
- ❖ Washes out waste from the body
- ❖ Helps to keep body temperature stable

*The source of information for this section “The Body’s Need for Food and Nutrients” was taken from **Nutrition Made Simple**, a Caribbean Food and Nutrition Institute (CFNI) Publication 2002*

FOOD-BASED DIETARY GUIDELINES FOR BELIZE

- 1. CHOOSE DIFFERENT TYPES OF FOODS FROM ALL THE FOOD GROUPS DAILY**
- 2. EAT MORE OF DIFFERENT TYPES OF LOCAL FRUITS DAILY**
- 3. EAT MORE VEGETABLES DAILY. CHOOSE DIFFERENT TYPES**
- 4. CHOOSE TO EAT WHOLE GRAIN AND GROUND FOODS MORE FREQUENTLY**
- 5. LIMIT YOUR INTAKE OF FATS, SUGAR AND SALT**
- 6. USE NATURAL SEASONINGS IN FOOD PREPARATION AND COOKING**
- 7. PRACTISE GOOD HYGIENE WHEN BUYING, STORING, PREPARING AND COOKING FOODS**
- 8. KEEP ACTIVE. MAKE PHYSICAL ACTIVITY A PART OF YOUR DAILY ROUTINE**

UNDERSTANDING AND PRACTISING EACH GUIDELINE

GUIDELINE ONE:

CHOOSE DIFFERENT TYPES OF FOODS FROM ALL THE FOOD GROUPS DAILY

As much as possible try to use foods from all the food groups every day



USE THE 'BASKET' TO HELP YOU MAKE YOUR CHOICES

TIPS

- Vary your choices within each food group from day to day. This is because all foods in each group do not always contain the same type of nutrients. For example Guava is rich in Vitamin C while Papaya is rich in Vitamin A, although they both belong to the **Fruit Group**.
- To cut cost, grow some foods of your own in the backyard or in containers.
- Use foods when they are in season and the price is low and the quality good.

- When cooking use different types of cooking methods such as baking, boiling and steaming.
- When planning meals think of variety in colour, taste, texture and nutrient – *“Variety is the spice of life”*.

BENEFITS

Eating different types of foods from the six food groups will ensure that your body receives all the nutrients and other substances it needs to work and keep healthy.

GUIDELINE TWO:

EAT MORE OF DIFFERENT TYPES OF LOCAL FRUITS DAILY

Fruits provide the body with important substances such as vitamins, minerals, anti-oxidants, water and fibre. In addition fruits add interesting colours and flavours to meals.

TIPS:

HOW TO EAT MORE FRUITS

- Eat a fruit each morning with breakfast
- Eat fruits for snacks
- Use fruits as part of a meal
- Prepare fruit salads for desserts instead of puddings and cakes
- Blend fruits and freeze them and use as 'smoothies'
- Use fruits to make 'snow ice' and 'fruit blocks'
- Add fruits to vegetable salads and cereals
- Use fruits to make interesting drinks
- Eat local fruits when in season



BENEFITS

- Allows for easy bowel movement
- Makes your skin 'glow'
- Builds stronger immune system
- Provides protection from disease

GUIDELINE THREE:

EAT MORE VEGETABLES DAILY. CHOOSE DIFFERENT TYPES

Vegetables, like fruits, provide the body with important substances such as vitamins, minerals, anti-oxidants, water and fibre. In addition they add interesting colours, textures and flavours to the diet.

TIPS:

HOW TO EAT MORE VEGETABLES

- Add vegetables to meat and rice dishes
- Use vegetables as part of a meal
- Add vegetables to soups
- Prepare vegetable salads
- Stir-fry two or three different vegetables
- Use vegetables to make interesting drinks (carrot, pumpkin, cucumber, beet)
- Eat local vegetables when in season



BENEFITS

- Allows for easy bowel movement
- Makes your skin 'glow'
- Builds stronger immune system
- Provides protection against disease
- Prevents obesity

GUIDELINE FOUR:

CHOOSE TO EAT WHOLE GRAIN AND GROUND FOODS MORE FREQUENTLY

Whole grains include foods such as peas, beans and nuts. Also included among these foods are whole wheat products (flour, pasta, bread) brown rice, flax seeds. **Ground foods**, as the name suggests are our favourite starchy foods which are sometimes grown underground such as potato, cassava and yams. However, there are some ground foods that are grown above ground and on trees such as bananas, plantains and breadfruit!

TIPS:

HOW TO EAT MORE WHOLE GRAIN AND GROUND FOODS

- Use breadfruit and green bananas to make interesting salads
- Use more potatoes – different types in different ways – bake, boil, roast, steam, stew.
- Always include a whole grain product or a ground food in every meal
- Use less packaged foods
- When purchasing foods choose whole grain products instead of refined ones



BENEFITS

- More energy and vitality
- Better control of blood sugar levels
- Allows for easier bowel movement
- Better weight control

GUIDELINE FIVE:

LIMIT YOUR INTAKE OF FATS, SUGAR AND SALT

Fats in the diet provide flavour and a feeling of fullness and satisfaction. **However, too much fats can be dangerous to your health.** Foods that are high in fat include fries, bacon, ham, fried foods (chicken, fish), cheese, mayonnaise, butter, salad dressing, margarine, full cream milk, avocado, dried coconut.

Foods that contain a **high amount of salt** include corned beef, canned sausage, pig's snout, pig's tail, soy sauce.

Foods that contain a **high amount of sugar** include soft drinks, box drinks, cakes, ice cream, puddings, sweets, jams and jellies, condensed milk.

TIPS:

HOW TO USE LESS FATS

- Choose to bake, steam, roast, grill or stir-fry foods instead of frying
- Remove skin and fat from chicken and meats before cooking
- Eat a meatless meal once or twice per week
- Read food labels to check fat content
- Cook with little or no added fat
- Avoid high-fat salad dressings

BENEFITS

- Prevention and reduction of overweight and obesity
- Prevention of certain diseases such as diabetes, cancer and hypertension
- Decreased risk of heart and blood vessel diseases

HOW TO USE LESS SUGAR

- Read labels to check sugar content
- Use fruits in porridge instead of sugar e.g banana slices on top of porridge
- Replace sweet drinks with water
- Use local fruits and vegetables for snacks instead of sugary snacks
- Add less sugar when preparing foods and drinks

BENEFITS

- Better weight control
- Better control of blood sugar levels
- Less problems with dental caries/tooth decay

HOW TO USE LESS SALT

- Choose less salty snacks - use unsalted peanuts instead of salted ones
- Read food labels
- Use fresh meat and fish instead of salted ones
- Do not add salt to food at table
- Reduce the amount of salt used in cooking

BENEFITS

- Good control of blood pressure levels
- Decreased risk of heart and blood vessel diseases

GUIDELINE SIX:

USE NATURAL SEASONINGS IN FOOD PREPARATION AND COOKING

Salty and processed seasonings are high in sodium. Sodium is one of the main dietary contributors to hypertension (high blood pressure). It is much healthier to use natural seasonings in food preparation and cooking

TIPS:

HOW TO USE MORE NATURAL SEASONINGS

- Use fresh seasonings such as thyme, onion, garlic, ginger
- Grow your own herbs in a container or in a kitchen garden
- Try new seasonings such as the leaves and juice of limes, lemons and oranges
- Avoid the use of commercial seasonings
- Read food labels and look for words such as: salt, brine, Sodium chloride, sodium bicarbonate, MSG (Mono Sodium Glutamate), sodium saccharin and sodium nitrate.

BENEFITS

- Prevents and controls high blood pressure
- Protects against diseases of the blood vessels
- Protects against some cancers

GUIDELINE SEVEN:

PRACTISE GOOD HYGIENE WHEN BUYING, STORING, PREPARING AND COOKING FOODS

Food safety is important to healthy living. Several diseases may be transmitted through foods if the foods are not properly cooked, handled or stored. Good health is dependent on the consumption of good, quality – safe foods.



TIPS:

HOW TO PRACTISE GOOD HYGIENE WHEN BUYING FOODS

- Buy foods from reputable establishments – clean and free of pests
- Select fresh and wholesome foods. Buy foods that look and smell clean
- Buy foods from persons who have valid “Food Handlers” permit

HOW TO PRACTISE GOOD HYGIENE WHEN STORING FOODS

- Store dry foods in covered air-tight containers
- Do not leave cooked food at room temperature for more than 2 hours
- Keep food storage areas free from insects, pests and other animals

HOW TO PRACTISE GOOD HYGIENE WHEN PREPARING FOODS

- Wash hands before handling food and often during food preparation
- Use safe water, or treat it to make it safe
- Wash and sanitize all surfaces and equipment used for food preparation

HOW TO PRACTISE GOOD HYGIENE WHEN COOKING FOODS

- Cook foods thoroughly, especially meat, poultry, eggs and seafood
- Reheat cooked food thoroughly
- Keep cooked food piping hot prior to serving

BENEFITS

- Prevention of food-borne diseases
- Prevention of some cancers
- Improved digestion and absorption of food

GUIDELINE EIGHT:

KEEP ACTIVE. MAKE PHYSICAL ACTIVITY A PART OF YOUR DAILY ROUTINE

Increased physical activity increases both mental and physical energy. Moving the body frequently uses up energy. Being less active increases the risk of overweight and obesity which could lead to several severe health problems. So, Get Moving!!

TIPS:

HOW TO BE MORE PHYSICALLY ACTIVE

- Use the stairs instead of the elevator
- When going short distances, try walking instead of driving
- Walk to the neighbour instead of using the telephone
- Get involved in some community sporting activity
- Park your vehicle a little distance away from your destination and walk the rest of the way
- Play physical games with family members



BENEFITS

Physical Activity:

- Boosts your confidence and self esteem
- Makes you sleep better
- Keeps your muscles in good condition
- Reduces stress
- Helps control obesity, hypertension and diabetes
- Maintains healthy body weight

HOW TO EAT HEALTHY

Portion Sizes

A **serving** is the usual amount individuals get at home or get when they eat out.

A **portion** is a measured amount which equates with a specific caloric value. In order to maintain a healthy body weight it is important that careful attention is paid to the portion size of foods consumed

Examples of Portion Sizes:

Starchy Foods:

*Portions which give **70 calories***

Examples: 1 slice sandwich bread; 6 water crackers; 1/2 cup rice; 1/2 cup cornmeal; 1 medium Green Banana

Foods from Animals:

*Portions which give **73 calories***

Examples: (cooked)- 1 small drumstick; 1 small chicken wing; 1 match box sized piece of Liver; 1/4 cup flaked salted fish

*Portions which give **75 calories***

Examples: (cooked) 1Tbsp boneless goat /beef; ¼ cup Tuna, mackerel (canned) ; 1 large Sardine (oil drained); 1 medium egg, 2Tbs minced meat; 1 small piece Pig Tail- ; 1 ‘1 inch’ cube cheese

Peas, Beans and Nuts:

*Portions which give **73 calories***

Examples: ¼ cup Red beans or lentils; 16 peanuts, 7 cashew nuts

Fruits:

*Portions which give **40 calories:***

Examples: ½ Grapefruit; 1 small orange; ½ cup unsweetened fruit juice ; 2/3 cup coconut water; 1 small ripe banana; 1 cup cubed watermelon; 1 small apple; 2 medium prunes

Vegetables:

*Portions which give **36 calories***

Examples: 1/2 cup Pumpkin (cooked); 1/2 cup Carrot (cooked); 3/4 cup, String beans (cooked). Vegetables which contain negligible amounts of carbohydrates can be eaten in any desired amounts. Such vegetables are dark green leafy vegetables, cucumber, tomatoes, cauliflower, egg plant and okra

Fats and oils:

*Portions which give **45 calories***

1 tsp margarine/ peanut butter/ oil/ butter; approximately 1/8 of an average avocado; 2 tbsp coconut (dried, grated)

Sugars and Sweeteners:

*Portions which give **20 calories***

Example: 1 teaspoon sugar, 1 teaspoon honey, 2 tablespoons jam/ jelly

SELECTING PORTIONS BASED ON ENERGY NEEDS

The diets outlined below can be used to help plan your meals. The following is only a **GUIDE**. If your activity level is moderate, you may choose the 2200 Kcal diet. Persons wishing to lose weight could use the 1600 Kcal diet. Those involved in strenuous activity, for example, construction and farming may choose to use the 2800 Kcal diet. Always seek clarification from the appropriate Health Care Professional before you decide on your diet plan.

Food Group	Number of Portions of Food Per Diet		
	1600 Kcal	2200 Kcal	2800 Kcal
Starchy Foods	10	14	18
Legumes	1	1	2
Foods from Animals	5	7	8
Vegetables	2	2	2
Fruits	3	3	3
Fats and Oils	3	5	7
Sugars & Sweeteners	4 tsp	7 tsp	11 tsp
TOTAL	1615	2195	2793

HEALTHY RECIPES FOR YOU TO TRY

SPINACH BURRITOS

- 2 oz cooked spinach
- 1 medium onion diced
- 2 stems cilantro chopped
- 3 ounces Cheese (grated)
- 2 tbsp coconut oil
- 2 medium whole wheat flour tortillas
- 1 tsp complete seasoning

METHOD

1. Place coconut oil and onions and cilantro in a skillet over medium heat.
2. Add cooked spinach .
3. When mixture begins to boil, remove from heat
4. Spoon spinach mixture into tortilla
5. Add some grated cheese, roll up tortilla and Serve

BREADFRUIT SALAD

1 medium breadfruit (diced)

½ cup cooked peas

1 small head lettuce

½ cup diced cooked carrot

1 large tomato

3 tablespoons mayonnaise

METHOD

1. Prepare and steam breadfruit. Peel and cut into 1 inch pieces.
2. Mix with peas, carrots and dressing.
3. Arrange with washed lettuce and sliced tomatoes as desired.

FRESH FRUIT CUP (5-6 Servings)

1 cup orange sections

1 cup grapefruit sections

1 cup firm, ripe papaya cubes or balls

1 large, firm ripe banana, peeled, cut in thin circles or semi-circles

1 cup orange juice.

METHOD

1. Combine fruits, orange juice and any juices from the preparation of the other fruits.
2. Toss lightly and add freshly grated nutmeg and a dash of bitters, or wine. Chill or serve with cracked ice.

STIR-FRIED VEGETABLES (5 – 6 Servings)

1 medium-sized, ripe sweet pepper, cut in thin strips
1 large chocho/christophene peeled and cut into match stick pieces
1 large carrot cut in thin circles
½ cup chopped onion
1 tablespoon cooking oil
1 clove garlic, minced
1 tablespoon soy sauce
1 tablespoon grated, fresh ginger
1 teaspoon cornstarch
½ cup water

METHOD

1. Heat oil in frying pan.
2. Add ginger, garlic, vegetables and soy-sauce. Stir briskly.
3. Cover and cook over high heat. Stir for 2 - 3 minutes.
4. Mix cornstarch with water and stir into vegetables until Sauce thickens.

GREEN BANANA SALAD

3 large green bananas
2 medium sized carrots
½ onion thinly sliced
¼ green pepper sliced
3 tbsp low fat margarine
Complete seasoning to taste

METHOD

Boil Carrots and bananas until done. Cook, peel and dice.
Combine bananas, carrots, onions green pepper and mix with margarine. Serve on Freshly washed local lettuce leaves

PEPPER FISH WITH GARLIC AND CABBAGE

4 pieces fillet fish (1lb fillet fish)
2 Limes juiced
2 tbsp coconut oil
1 green Habanero seeded and minced
1 clove garlic minced finely
Large cabbage leaves

METHOD

1. Wash fish in lime juice , drain well
2. Place oil in skillet and heat until very hot
3. Fry fish until light brown but not dry
4. Place fish in a single layer and spread habanero and garlic on top
5. Place cabbage leaves on top , add ¼ cup water then cover
6. Simmer for about 15 minutes
7. Serve each fish on a cooked cabbage leaf

Glossary

Antioxidant	Substances with disease fighting properties that protect cells from damage by other substances called free radicals.
Chronic Disease	A disease that takes a long time to develop, and is not contagious. Chronic diseases cannot be cured but they can be controlled through diet, lifestyle modifications and medication.
Kilocalorie (Kcal)	A unit of energy measurement that is calculated and expressed in relation to nutrition.
Macro-nutrients	Nutrients required in the body in fairly large amounts- carbohydrates, fats, protein.
Micro-nutrients	Nutrients needed by the body in very small quantities. They are absolutely essential to regulate and control body processes to sustain life and health. In human nutrition, the micronutrients are vitamins and minerals.
Nutrients	Substances found in food that are necessary for the metabolic processes of the body.
Phytochemical	Naturally occurring, biologically active chemical compounds in plants.
Portion	A measured amount of food or drink which equates with a specific caloric value.
Sauté	To cook slightly in a small amount of fat or liquid.
Serving	The usual amount of food an individual gets at home or when they eat out.

