

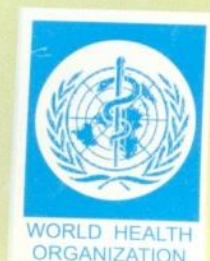
# FOOD-BASED DIETARY GUIDELINE FOR NIGERIA

*A Guide to healthy eating*



NUTRITION DIVISION  
FEDERAL MINISTRY OF HEALTH  
ABUJA

ENGLISH



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# **FOOD-BASED DIETARY GUIDELINES FOR NIGERIA**

**FEDERAL MINISTRY OF HEALTH  
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## **PREFACE**

The amount and type of food eaten is a fundamental determinant of human health. Diet is one of the major factors now linked to a wide range of diseases.

The International Conference on Nutrition (INC) jointly organised by FAO and WHO in Rome in 1992 enunciated various strategies and actions for improving nutritional status of people throughout the world. The plan of action for Nutrition adopted at this important conference called on "Governments to provide advice to the public by disseminating through the use of mass media and other appropriate means, qualitative and/or quantitative dietary guidelines relevant for different age groups and lifestyles and appropriate for the country's population."

In Nigeria, malnutrition and the widespread prevalence of communicable diseases have been recognised as major health and welfare problems. Available data have shown that a host of nutritional disorders such as Protein-Energy-Malnutrition, Vitamin A deficiency, Iron deficiency anaemia and Iodine deficiency disorders among others are of public health importance. The growth of children and size of adults reflects the effects of diet, infection, psychosocial, and genetic factors.

Diseases such as coronary heart disease, various cancers, hypertension, stroke and diabetes have also been linked to diet. These conditions have been identified as the commonest causes of premature death in developing countries including Nigeria especially among the affluent middle class.

"Dietary guidelines are sets of advisory statements that give dietary advice for the population in order to promote overall nutritional well-being and to address all diet-related conditions."

The development of food-based dietary guidelines for Nigeria has been recommended as a suitable instrument for improving food consumption and nutritional well being.

The dietary guidelines address various causes of malnutrition such as inadequate intake while making specific recommendations for different age groups such as infants, children, adults, the pregnant and lactating mothers as well as the elderly.

**DR. M. S. AMAESHI,  
DIRECTOR,  
COMMUNITY DEVELOPMENT  
AND POPULATION ACTIVITIES  
FEDERAL MINISTRY OF HEALTH**



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**DR. (MRS.) S. O. OMOJOKUN**  
**Consultant Special Grade 1**  
**Nutrition Division**  
**Federal Ministry of Health**

## **WORKING GROUP**

### **FMOH-**

Dr. M. S. Amaeshi  
Dr. (Mrs) S. O. Omojokun  
Mrs. O. Y. Adeniji  
Mrs. A. K. Orivri  
Mrs. L. N. Mowoe  
Mr. R. O. Osiyemi  
Mrs. K. O. Demehin  
Miss. R. R. Amodu  
Miss F. R. Kia  
Miss M. K. Onyemachi  
Mrs. A. F. Akapo

### **WHO-**

Dr. O. Bogunjoko  
Miss P. Bozegha

### **CONSULTANTS-**

Prof. T. Oguntona  
University of Agriculture,  
Abeokuta

Dr. (Mrs) C. Ndiokwelu  
Dept. of Dietetics,  
U.N.T.H., Enugu

Mallam S. S. Hassan  
Dept. of Community Health  
A.B.U., Zaria.

### **EDITORIAL COMMITTEE:**

Professor T. Oguntona (Consultant)  
Dr. (Mrs) S. O. Omojokun  
Mr. R. O. Osiyemi  
Mrs. K. O. Demehin



## 1.0

## INTRODUCTION

Nutritional and nutrition-related disorders continue to be a serious problem of public health importance in Nigeria with Protein-energy malnutrition (PEM) being the commonest and most serious form of malnutrition. The Nigeria Demographic and Health Survey (NDHS, 1990) indicated that 43% of children under five years were stunted and in 1993, the UNICEF/OAU Participatory Information Collection (PIC) study recorded 53% stunting, 11% wasting and 36% underweight among children of the same age group. Also, the National Micronutrient Survey (NMS, 1993) recorded equally high prevalence rates for under-nutrition (40% stunting, 23% wasting and 40% underweight), as well as specific micronutrient deficiencies. 62% of the women of child bearing age surveyed as well as 75% of the children were anaemic while one out of every 3 children was vitamin A deficient. For iodine deficiency disorders, an endemic goiter prevalence rate of 20% was reported. Low birth weight, a good indicator of maternal malnutrition has been put at 20% while 52% of all under-five deaths in Nigeria are associated with malnutrition.

While the problem of under-nutrition is yet to be contained with inspite of several efforts, over-nutrition with resultant chronic degenerative diseases is slowly becoming a public health concern. Recent studies have recorded 40% prevalence rate for obesity, 11.2% for hypertension and 2.2%, for Diabetes Mellitus (FMHSS, 1997). There is also increased incidence of coronary heart disease and various types of cancer. Though a smaller percentage of the population (mainly the urban affluent middle class) are affected, these are a very important few that constitute the core of decision makers who play a key role in the nation's economic development.

The causes of malnutrition be it under-nutrition or over-nutrition are many and complex and have been generally discussed using the conceptual framework that categorizes them into immediate causes, underlying causes and basic causes. The International Conference on Nutrition convened by FAO and WHO in Rome in December 1992 aimed at addressing all these causes by identifying and encouraging, among others, the use of strategies and actions that would improve food consumption and nutritional well being. The development and use of food-based dietary guidelines have been recommended as a suitable instrument for achieving these objectives. Dietary guidelines are sets of advisory statements that give dietary advice for the population in order to promote overall nutritional well being and to address all diet-related conditions (FAO/WHO, 1995).

The food-based guidelines for Nigeria address mainly the immediate causes of malnutrition which are inadequate dietary intake as well as diseases,



while also taking into consideration the functions of inadequate household food security, inadequate maternal and child care and inadequate health services, i.e. underlying causes of malnutrition. It is in this regard and in view of the roles of such factors as physical activity, smoking, stress and other environmental factors in the development of these degenerative diseases that some non-dietary recommendations were considered appropriate for inclusion in the guidelines.

These guidelines therefore attempt to deal with the nutritional problems of the poor and low-income groups, thus addressing adequacy of food intake in terms of frequency, quantity and quality (especially adequacy of energy and protein). It also deals with the nutritional problems of the affluent middle class, addressing excessive intakes of macronutrients (fat, carbohydrate and protein).

Specific food-based recommendations have been made for the following groups:

- Infants 0-6 months
- Infants 6-12 months
- Toddlers 12-24 months
- Children 25-60 months
- School-aged children 6-11 years
- Adolescents 12-18 years
- Adults
- Pregnant women
- Breast-feeding mothers
- The Elderly

Recommendations have also been made in relations to iron, vitamin A and iodine-rich food intake. In general terms and in everyday nutritional practice, the recommendations mean the following:

- Breast-feed new born infants exclusively for the first 6 months of life and thereafter continue breast-feeding up to 2 years. In addition, give adequate and nutritious complementary foods from 6 months.
- At every meal, give a variety of foods to ensure adequate diet.
- Increase consumption of fruits, vegetables, grains and legumes e.g. beans and soybeans
- Increase consumption of poultry and fish
- Use more fats from vegetable sources
- Decrease consumption of foods high in animal fat
- Decrease consumption of sugar and food high in sugar content



- Decrease consumption of salt and foods high in salt content.
- Drink water as much as possible daily.

It is hoped that if individuals adopt these guidelines and effect the recommended changes in their diet (by making wise food selections) as well as their lifestyles, morbidity and mortality rates due to malnutrition will be greatly reduced and the chances of long term, good health will be better enhanced.

**References:**

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4. FGN/UNICEF (1993) The Nutritional Status of Women and Children In Nigeria UNICE/Obafemi Awolowo University Participatory Information Collection (PIC)
5. FAO/WHO (1995) Joint FAO/WHO Technical Report Series 880, 1995



## **2.0 JUSTIFICATION FOR USING FOOD-BASED APPROACH RATHER THAN RDAs OR RNIs**

There are several dietary guidelines and nutritional recommendations, which are being used by policy makers and health professionals for the general populace. Such guidelines and recommendations include RDAs and RNIs, which are expressed in scientific terms and contain quantitative goals and recommendations for nutrient intakes. RDAs or RNIs are the levels of intake of essential nutrients that on the basis of scientific knowledge are judged to be adequate to meet the known nutrient needs of practically all healthy persons. However, RDAs/RNIs are commonly misunderstood and applied inappropriately by nutritionists and the public. This is because individuals do not know their true nutrient requirements and, their information about actual nutrient content of the foods they eat is incomplete.

Food based dietary guidelines (FBDGs) are essentially to provide dietary guidance as well as nutrition education for the general public in terms that are understandable to most consumers. They are practical means of assisting people to reach appropriate nutritional goals.

The advantages of FBDGs are more especially in the Nigerian context. Firstly, FBDGs are easily comprehensible since diets are made of foods, which are more than a mere collection of nutrients and therefore enable the average consumer to think in terms of foods rather than nutrients. Secondly, foods unlike nutrients, have social, cultural, ethnic, and family meanings, which can be incorporated into FBDGs. Also unlike RDAs or RNIs, FBDGs advice can be provisional based only on indirect evidence linking specific food consumption pattern with incidence of certain diseases. Lastly, while FBDGs give broad targets for achievements by individuals, RDAs (RNIs) specify the amount of nutrients to be consumed daily by an average individual.

### **3.0 GENERAL RECOMMENDATIONS**

The general recommendations aim at ensuring that the different age groups in all segments of the Nigerian population consume adequate amounts of food that contain the nutrients needed to attain and maintain good health. The recommendations also aim at reducing the growing prevalence of PEM as well as diet-related non-communicable diseases.

### **3.1 GOOD NUTRITION**

No single food by itself (except breast-milk) provides all the nutrients in the right amounts that will promote growth and maintain life. To achieve good nutrition therefore, it is necessary to consume as wide a variety of foods as possible from the age of 6 months.

#### **3.1.1 INFANTS (0-6 MONTHS)**

- Start exclusive breast-feeding immediately after birth and continue for 6 months.
- There should be no bottle-feeding.

#### **3.1.2. INFANTS (6 -12) MONTHS)**

- Continue breast-feeding
- Introduce complementary feeds made from a variety of cereals, tubers, legumes, fruits, animal foods and give with cup and spoon

#### **3.1.3. TODDLERS (12- 24 MONTHS)**

- Continue to breast-feed until child is 2 years
- Give enriched pap or mashed foods twice daily
- Give family diet made soft with less pepper and spices
- Give fruits and vegetables in season.

#### **3.1.4. CHILDREN (25 -60 MONTHS)**

- Give diet that contains a variety of foods in adequate amounts
- Add palm oil or vegetable oil to raise the energy level of complementary foods.
- Gradually increase food intake to 4-5 times daily as baby gets older
- Provide dark green leafy vegetables, yellow/orange coloured fruits, citrus fruits, cereals, legumes, tubers and foods of animal origin



- Limit the consumption of sugary food
- Continue feeding even when child is ill.

### **3.1.5 SCHOOL - AGED CHILDREN (6-11 YEARS)**

- Give diet that contains a variety of foods in adequate amounts
- Encourage consumption of good quality snacks, but limit the consumption of sugary snacks

### **3.1.6 ADOLESCENTS (12-18 YEARS)**

- Consume diet containing a variety of foods
- Most of the energy should be derived from roots/tubers, legumes, cereals, vegetables and less from animal foods
- An increase in total food intake is very important at this stage, so is the need to enjoy family meals
- Snacks especially pastry and carbonate drinks should not replace main meals. If you must eat out, make wise food choices.
- Liberal consumption of whatever fruits that are in season should be encouraged.
- Females need to eat more iron-containing foods like meat, fish, poultry, legumes, cereals as well as citrus fruits to enhance body's use of iron.

### **3.1.7 ADULTS (MALE AND FEMALE)**

Total food intake should take into consideration the level of physical activity. Individuals who do manual work need to consume more food than those who do sedentary work.

- Limit the fat intake from animal foods
- Diet should consist of as wide a variety of foods as possible e.g. cereals, legumes, roots/tubers, fruits, vegetables, fish, lean meat, local cheese (wara)
- Limit intake of salt, bullion cubes and sugar
- Liberal consumption of whatever fruits that are in season is encouraged.

### **3.18. PREGNANT WOMEN**

- Eat diet that contains a variety of foods in adequate amounts
- Consume enough food to ensure adequate weight gain

- Eat more of cereals, legumes, fruits, vegetables, dairy products and animal foods
- Take iron and folic acid supplements as prescribed
- Avoid alcohol, addictive substances and smoking

### 3.1.9 BREAST-FEEDING MOTHERS

- Eat diet that contains a variety of available food items like cereals, tubers, legumes, meat, fish, milk, fruits, vegetables, etc.
- Consume more of foods rich in iron such as liver, fish, beef, etc.
- Eat fruits in season at every meal
- Consume green leafy vegetables liberally
- Consume fluids as needed to quench thirst
- Avoid alcohol, addictive substances and smoking

### 3.1.10. THE ELDERLY

- Eat diets that are prepared from a variety of available foods e.g. cereals, tubers, fruits, vegetables, etc.
- Increase consumption of fish and fish-based diets
- Eat more of fruits and vegetables
- Eat more frequently

## 3.2 PHYSICAL ACTIVITY/EXERCISE

Physical activity whether as short periods of intense exercise or prolonged periods of modest activity on a daily basis generally have beneficial effects.

- Children and adolescents should engage in leisure time exercise
- Adults should undertake some form of exercise as recommended by their doctors.

## 3.3 HEALTHY LIFESTYLES

Some habits and lifestyles e.g. tobacco use and excessive alcohol consumption have been found to be bad for health.

Prolonged indulgence in these lifestyles predisposes to non-communicable diseases like cancer, diabetes, heart problems, and hypertension.



## **ALCOHOL**

Too much alcohol consumption can lead to risk of hypertension, liver damage, malnutrition and various cancers. There is also the problem of alcohol abuse.

- If you must drink, take alcohol in moderation
- Avoid drinking alcohol when driving a vehicle or operating any machinery.

## **TOBACCO**

Tobacco use is associated with lung cancers and other chronic disorders. Smoking during pregnancy can harm the developing baby and can result in low birth weight babies.

- Avoid the use of tobacco in any form

## 4.0 RECOMMENDATIONS

### DIETARY GUIDELINES FOR VARIOUS AGE-GROUPS AGAINST: PROTEIN-ENERGY-MALNUTRITION (PEM), MICRONUTRIENT DEFICIENCIES, AND DIET-RELATED NON- COMMUNICABLE DISEASES.

#### 4.1 PROTEIN-ENERGY-MALNUTRITION (PEM)

These dietary guidelines have been developed for the following age groups:

- \* Infants (0 -6 months)
- \* Infants (6 - 12 months)
- \* Toddlers (12- 24 months)
- \* Children (25- 60 months)
- \* School-aged children (6 -11 years)
- \* Adolescents (12-18 years)
- \* Adults
- \* Pregnant Women
- \* Breast-feeding Mothers
- \* The Elderly

##### 4.1.1 INFANTS (0- 6 Months)

- Start breast-feeding immediately after birth
- Breast-feed exclusively up to 6 months i.e. with no other foods/milk
- Do not give any other drinks e.g. water, gbomoro, agbo, honey, glucose drink etc, during the first 6 months
- Breast-feed on demand both day and night
- Breast-feed low birth weight babies (less than 2.5kg at birth) more frequently.

##### 4.1.2 INFANTS (6- 12 MONTHS)

- Continue to breast-feed as often as possible
- Give baby semi-solid foods twice a day and gradually increase to 4-5 times daily as baby gets older.
- Start feeding baby with semi-solid foods from usual family meals such as: Pap made from corn, guinea corn, millet, acha, etc. i.e. Kamu, Akamu,



- Ogi; Mashed foods e.g. yam, potatoes, rice, plantain, de-hauled beans etc
- Mix pap or mashed foods with the following:
    - Growth - promoting foods e.g. fish, crayfish, milk (if available) groundnuts, benniseed, soyabean powder, beans;
    - Fruits e.g. mashed banana, pawpaw or strained and diluted orange juice
    - Vegetables (cooked and mashed) and
    - Palm oil.
  - Feed baby with cup/plate and spoon. Do not use feeding bottles and pacifiers.

#### **4.1.3. TODDLERS (12-24 months)**

- Continue to breast-feed until child is 2 years old
- Give enriched pap or mashed foods twice daily (e.g. with crayfish, groundnuts)
- Additionally at meal times, give family diet made soft and with less pepper and spices
- Give nutritious snacks at least twice daily (e.g. Kuli-kuli, Akara, carrots, banana, wara)
- Give fruits and vegetables in season.

#### **NOTE:**

- Remember that feeding young children needs patience
- Take children for regular growth monitoring and promotion sessions
- Report any health problem to nearest health facility
- Provide adequate care and friendly surrounding e.g. smiling, playing, and eating with children
- Make sure baby takes all vaccinations.

#### **4.1.4 CHILDREN (25-60 MONTHS)**

- Give usual family foods \*3-5 times daily)
- Give more growth - promoting foods e.g. beans, fish, meat, milk and egg (if available)
- Give nutritious snacks in-between meals
- Give fruits and vegetables in season

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\* See guidelines for adults

- Use unbleached palm oil for cooking more frequently or add a teaspoon to food whenever palm oil is not used.

**NOTE**

- Continue attending Growth Monitoring and Promotion Sessions
- Keep food, body and surrounding clean
- Remember baby needs love and care
- Avoid use of unprescribed drugs and medications
- De-worm children regularly.

**4.1.5 SCHOOL AGED CHILDREN (6-11 years)**

- Continue feeding with usual adequate family diet
- Give more growth-promoting foods e.g. beans, fish, meat, milk and egg (if available)
- Establish healthy feeding habits by having regular family meals\*
- Prepare meals for the child to eat at school, if there are no school meal services
- Encourage consumption of nutritious snacks in form of fruits, groundnuts, wara, kuli-kuli etc.

**NOTE**

- Monitor the child's food choice/feeding habits and correct where necessary
- De-worm the child from time to time
- Report any ill health to the nearest health facility.

**4.1.6. ADOLESCENTS (12-18 Years)**

- Eat adequate diet prepared from available food items such as cereals, tubers, fruits, vegetables, meat, fish, milk etc.
- Establish healthy eating habits by having regular family meals
- Increase the amount of food eaten and the frequency (e.g. 4-5 meals a day including snacks)
- Take iron supplements as prescribed (for the adolescent girl)
- Snacks especially pastry and carbonated drinks should not replace main meals. If you must eat out, make wise food choices
- Liberal consumption of whatever fruits that are in season should be encouraged.

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\* See guidelines for adults



**NOTE:**

- Avoid tobacco, alcohol and any form of unprescribed drugs/medication.

**4.1.7. ADULTS (MALE & FEMALE)**

- Eat adequate diet prepared from available food items
- Eat varied diet at least 3 times daily and enough to satisfy hunger
- Use unbleached palm oil in preparing meals
- Eat more melon seeds, soyabeans, beans, locust beans, crayfish, groundnuts
- Use vegetable oil more frequently
- Establish healthy eating habits by having regular family meals
- Avoid over eating
- Minimize adding salt and bullion cubes to foods
- Avoid adding salt to foods after cooking (at table)
- Consume liberal amounts of green leafy vegetables even during dry season.
- Consume liberal amounts of fruits in season.

**NOTE:**

- Avoid use of tobacco
- If you must drink, take alcohol in moderation
- Avoid all forms of unprescribed drugs and substances
- Adults should undertake some form of exercise as recommended by their doctors.

**4.1.8. PREGNANT WOMEN**

- Eat adequate diet composed of a variety of available food items like cereals, tubers, legumes, fruits, vegetables, meat, milk, fish, etc.
- Increase the quantity/amount of food by 1/10 of what you usually eat before pregnancy especially after 6 months
- Establish healthy feeding habits by having regular family meals
- Eat iron and folate-rich foods like beef, liver, fish, pumpkin seeds and leaves, snails, nuts, etc.
- Take the routine prescribed iron/folate tablets.

**NOTE:**

- Avoid completely use of tobacco and alcohol
- Use only prescribed drugs and medications
- Space your birth to at least 2 years in between
- Attend regular Antenatal Clinics
- Report unusual feeling/ill health to nearest health facility
- Minimize heavy workload.

**4.1.9. BREAST-FEEDING MOTHER**

- Eat adequate diet composed of a variety of available food items like cereals, tubers, legumes, fruits, vegetables, meat, milk, fish, etc.
- Increase the quantity/amount of food by 1/5 of what you usually eat before pregnancy
- Eat fruits in season at each meal
- Consume liberal amounts of green leafy vegetables e.g. pumpkin leaves, seeds and spinach
- Eat more of foods rich in iron such as beef, liver, fish, snails, etc.
- Take the routine prescribed iron/folate tablets.

**NOTE:**

- Breast-feed baby exclusively
- Have adequate rest
- Avoid tobacco and alcohol
- Minimize heavy work load and exercise

**4.1.10. THE ELDERLY**

- Eat adequate amounts of foods prepared from a variety of available foods e.g. cereals, tubers, fruits, vegetables, meat, milk
- Eat more of fruits and vegetables
- Increase consumption of fish and fish-based diets
- Increase consumption of fermented semi-solid foods e.g. kunu, soyabean enriched pap, enriched agidi
- Eat more frequently

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\* See guidelines for adults



**NOTE:**

- Avoid tobacco and if you must drink, limit intake of alcohol
- Engage in family and community-based social activities
- Maintain usual activity/exercise
- Avoid isolation
- Encourage regular medical check up and report any ill health.

## 4.2

### MICRONUTRIENTS

Micronutrients are substances that are needed in small amounts by the body. They perform vital roles in growth, reproduction, brain function and resistance to disease among others. These guidelines are provided to ensure adequate intake of micronutrients by the general populace.

#### 4.2.1 IRON

Iron is a very important micronutrient, the lack of which can lead to anaemia. Generally, there are two forms of dietary iron:

- Iron from animal sources which are readily used by the body and
  - Iron from plant sources
- Iron-containing foods include; Liver, Meat, Fish, Snails, Pumpkin leaves and seeds, Legumes, Nuts, etc.

#### NOTE:

- Fresh fruits such as guava, African cherry (Agbalumo/udala), oranges and other citrus fruits contain Vitamin C. When consumed with meals, vitamin C aids body's use of iron, especially if animal foods like liver, meat, fish and poultry are lacking.
- Consumption of tea or coffee with meals should be discouraged because these beverages hinder the use of iron.

##### 4.2.1.1 INFANTS (0 -6 MONTHS)

- Breast-feed exclusively up to 6 months.

##### 4.2.1.2 INFANTS (6- 12 MONTHS)

- Continue to breast-feed as often as possible
- Introduce gradually nutritious complementary food such as pap mixed with groundnut or crayfish
- Give baby semi-solid foods from usual family meals
- Start feeding semi-solid foods twice a day and gradually increase to 4-5 times daily as baby gets older.
- Iron-rich foods like meat or liver should be introduced as early as possible.
- Give strained fruit juices made from citrus fruits like orange, tangerine etc.

##### 4.2.1.3 TODDLERS (12 -24 MONTHS)

- Continue to breast-feed until child is 2 years old

- Give enriched pap or mashed foods
- Give food from family diet made soft and with less pepper and spices.
- Increase the frequency of giving iron-rich foods like meat, liver, fish, etc.
- Give fresh fruits and vegetables in season with meals.

#### **4.2.1.4 CHILDREN (25-60 MONTHS)**

- Give food from family menu which should contain iron-rich foods like meat, fish, green leafy vegetables, etc.
- Give nutritious snacks in between meals
- Give fruits and vegetables in season with meals
- De-worm at regular intervals.

#### **4.2.1.5 SCHOOL-AGED CHILDREN (6-11 YEARS)**

- Continue feeding with usual family diet
- Give varied diet at least 3 times daily and just enough to satisfy hunger
- Establish healthy feeding habits by having regular family meals
- Encourage the consumption of snacks made from iron-rich foods and fruits
- Give fruits and vegetables in season with meals

#### **4.2.1.6 ADOLESCENTS ESPECIALLY THE GIRL (12 -18 YEARS)**

The adolescent girl should make efforts to increase her iron stores through consumption of iron - rich foods. However, in situations of increased iron needs it may be necessary to supplement with prescribed iron/folate tablets. This is necessary to prepare the adolescent girl for her future reproductive roles.

- Eat varied diet at least 3 times daily and enough to satisfy hunger
- Establish health, feeding habits by having regular family meals
- Eat more of iron-containing foods such as liver, meat, fish
- Take fresh fruits in season such as guava, mangoes, oranges, etc. liberally with meals.

#### **4.2.1.7 ADULTS (MALE AND FEMALE)**

- Eat more of iron-rich foods such as liver, fish, meat, pumpkin seeds and leaves, etc.
- Eat more fruits and vegetables



**NOTE:**

- Avoid taking tea or coffee with meals

**4.2.1.8 PREGNANT WOMEN**

- Adult females should increase iron stores through consumption of iron-rich foods
- Eat sufficient amounts of iron-containing foods like liver, organ meats, meat, fish, poultry, pumpkin seeds and leaves, nuts, legumes, dark green leafy vegetables.
- Take fresh fruits in season such as guava, mangoes, oranges, etc. liberally with meals.

**NOTE:**

- Take iron and folic acid supplementation as prescribed
- Take medicine to control malaria as prescribed
- Report any illness to the nearest health facility
- Avoid taking tea or coffee with meals
- Avoid use of tobacco

**4.2.1.9 BREAST-FEEDING MOTHERS**

- Build iron stores through regular consumption of iron-rich foods such as liver, fish, meat, pumpkin etc.
- Take fresh fruits in season with meals

**NOTE:**

- Take iron and folic acid supplementation as prescribed
- Take medicine to control malaria as prescribed
- Report any illness to the nearest health facility
- Avoid taking tea or coffee with meals
- Avoid use of tobacco

**4.1.1.10 THE ELDERLY**

- Eat more of iron-rich foods such as liver, fish, meat, pumpkin seeds and leaves, etc.
- Eat more fruits and vegetables

**NOTE:**

- Take iron and folic acid supplementation as prescribed
- Take medicine to control malaria as prescribed
- Report any illness to the nearest health facility
- Avoid taking tea or coffee with meals
- Avoid use of tobacco

**4.2.2 VITAMIN A**

Vitamin A is needed for proper functioning of the eyes, resistance to diseases and growth promotion in children. Its absence can lead to blindness, poor growth and reproduction and even death.

These guidelines are to ensure adequate intake of vitamin A to prevent problems associated with its deficiency.

Foods such as liver, milk, fish, butter, local cheese (wara) have appreciable quantities of vitamin A.

The following fruits and vegetables can also ensure enough quantity of vitamin A when regularly consumed: green leafy vegetables, carrots, pumpkin pawpaw, mangoes, red palm oil (unbleached), sweet potatoes (yellow variety).

**4.2.2.1 INFANT (0 -6 MONTHS)**

- Feed baby colostrums i.e. the first milk from mothers breast after delivery, it is rich in vitamin A.
- Exclusive breast-feeding for the first 6 months of life will provide enough quantity of vitamin A needed for healthy growth

**4.2.2.2 INFANTS (6 - 12 MONTHS)**

- Continue breast-feeding
- Introduce vitamin A rich foods like liver, mashed pawpaw, strained citrus fruit juice, etc
- Use unbleached palm oil in cooking and also add a teaspoon to the baby's pap or mashed food, if palm oil was not used in cooking.

**4.2.2.3 TODDLERS (12 - 24 MONTHS)**

- Enrich family foods with milk, liver, ground crayfish, soft pawpaw, soft carrots
- Use palm oil in cooking

#### **4.2.2.4 CHILDREN (25 -60 MONTHS)**

- Give some amounts of liver, milk, dark green leafy vegetables with every meal
- Use palm oil in cooking
- Give mangoes, pawpaw, carrots, etc. as snacks.

#### **4.2.2.5. SCHOOL-AGED CHILDREN (6 -11 YEARS)**

- Give foods rich in vitamin A-liver, milk, dark green leafy vegetables
- Use palm oil in cooking
- Give snacks like mangoes, pawpaw, carrots

#### **4.2.2.6 ADOLESCENTS (12 -18 YEARS)**

- Encourage the consumption of more vitamin A-rich foods like liver, fish, milk, meat to meet the demands of growth and development.
- Encourage the consumption of meals prepared with vitamin A-rich foods
- Yellow/orange coloured fruits such as pawpaw, mangoes, should be consumed liberally to build up vitamin A stores in the body.
- Encourage the consumption of dark-green leafy vegetables like spinach and yellow/orange coloured vegetables like carrots.
- Eat foods cooked with unbleached palm oil.

#### **4.2.2.7 ADULTS (MALE AND FEMALE)**

- Eat meals prepared with vitamin A-rich foods
- Consume yellow/orange coloured fruits like pawpaw, mangoes, liberally
- Use unbleached palm oil in cooking
- Consume liberally dark-green leafy vegetables like spinach and yellow/orange coloured vegetables like carrots.

#### **4.2.2.8 PREGNANT WOMEN**

- Eat more vitamin A-rich foods (liver, milk, meat) than when not pregnant
- Eat fruits such as mangoes, pawpaw, pumpkin, regularly
- Use palm oil in cooking
- Consume liberally dark-green leafy vegetables like spinach and yellow/orange coloured vegetable like carrots.



#### **4.2.2.9 BREAST-FEEDING MOTHERS**

- Eat more vitamin A-rich foods -liver, milk, meat, etc
- Eat generous amounts of fruits such as mangoes, pawpaw and pumpkin
- Use unbleached palm oil in cooking
- Consume liberally dark-green leafy vegetables like spinach and yellow/orange coloured vegetables like carrots.

#### **4.2.2.10 THE ELDERLY**

- Eat meals prepared with vitamin A-rich foods
- Consume fruits like pawpaw, mangoes, liberally
- Use unbleached palm oil in cooking
- Consume liberally dark-green leafy vegetables like spinach and yellow/orange coloured vegetables like carrots

#### **NOTE:**

- In areas where vitamin A deficiency is of public health concern, vitamin A supplementation under supervision should be considered.

#### **4.2.3 IODINE**

- Iodine is a very important micronutrient. It is necessary for growth, proper functioning of the thyroid and ensuring normal brain development. Deficiency of iodine can lead to among others; goiter, reduced growth and reversible brain damage. These guidelines suggest ways of ensuring adequate iodine intake by all segments of the population.

Foods that are rich in iodine include: fish (not fresh water fish), crabs, shrimps/prawns, edible seaweed (kelp)

##### **4.2.3.1 INFANTS (0 - 6 MONTHS)**

- Breast-feed exclusively

##### **4.2.3.2 INFANTS (6 - 12 MONTHS)**

- Continue breast-feeding
- Add ground shrimps, prawns to complementary foods
- Give food from family menu cooked with iodized salt.

##### **4.2.3.3 TODDLERS (12 -24 MONTHS)**

- Continue breast-feeding

- Continue to give meals containing sea-foods such as crab, fish, shrimps, etc.
- Give meals from family food cooked with iodized salt.

#### **4.2.3.4 CHILDREN (25-60 MONTHS)**

- Seafood such as crabs, fish, shrimps should be regular components of family menu.
- Eat meals prepared from family food cooked with iodized salt.

#### **4.2.3.5 SCHOOL-AGED CHILDREN (6-11 YEARS)**

- Seafood such as crabs, fish, shrimps should continue to be a regular component of family menu
- Eat meals prepared with iodized salt

#### **4.2.3.6 ADOLESCENTS (12-18 YEARS)**

- Consumption of iodine-rich foods such as fish, shrimps, crab etc should be encouraged
- Eat foods cooked with iodized salt

#### **4.2.3.7 ADULTS (MALE AND FEMALE)**

- Consume regularly iodine-rich foods such as fish, crabs etc.
- Use iodized salt in cooking.

#### **4.2.3.8 PREGNANT WOMEN**

- Consume regularly iodine-rich foods such as fish, shrimps, etc.
- Seafood like fish, crabs, shrimps should be consumed more than before pregnancy.
- Use iodized salt in cooking

#### **4.2.3.9 BREAST-FEEDING MOTHERS**

- Seafood should feature prominently in the diet
- Use iodized salt in cooking

#### **4.2.3.10 THE ELDERLY**

- Seafood should feature prominently in the diet
- Use iodized salt in cooking

## 4.3

## DIET-RELATED DISEASES

## INTRODUCTION

Recent studies have shown that over-nutrition with resultant diet-related diseases is gradually becoming a public health problem in Nigeria. Dietary guidelines have therefore been developed for the following emerging diet-related diseases in our society:

- Cardiovascular Diseases
- Diabetes mellitus
- Obesity

## 4.3.1 CARDIOVASCULAR DISEASES

Cardiovascular diseases are diseases that affect the heart and blood vessels. These can manifest in form of hypertension, high blood pressure, high blood cholesterol, stroke and other heart problems. Many factors predispose to these conditions including high fat intake and obesity. It is therefore desirable to maintain body weight appropriate for age and size (height) by controlling the intake of the following foods:

| USE  | REDUCE-IN-TAKE   | AVOID  |
|--|--|--|
| <b><u>FATTY FOODS</u></b><br>Fish: low fat fish like tilapia stock-fish etc, lean meat, chicken / turkey without skins, snails, game (bush meat) | Fatty meat/fish such as hump (tozo), tongue, cow tail, skin (ponmo), bacon sausage, hamburger, mackerel                        | Organ meat like liver, kidney, brain (kwanya), intestine |
| <b><u>DAIRY PRODUCTS</u></b><br>skimmed milk, low-fat cheese and yoghurt   | Full-cream evaporated milk, fat, butter, cheese, Condensed full - cream milk, full cream powdered milk.                        |  |
| <b><u>FATS/OILS</u></b><br>Corn oil, sunflower oil<br>Soyabean oil and<br>Groundnut oil  | Oils rich in saturated fats e.g. palm oil, coconut oil, palm kernel oil, lard, chicken fat, Turkey fat, pear (Ube) Ogbona etc. | Coconut  |



| USE/TAKE  | REDUCE IN-TAKE  | AVOID   |
|---|---|---|
| <b><u>FRIED FOODS</u></b>   | Fried foods, e.g. puff-puff, doughnut, chin-chin, etc.  |   |
| <b><u>BAKED PRODUCTS</u></b>  | Pastries such as meat pie, sausage roll's, chocolate cookies, Cakes                                   |   |
| <b><u>FRUITS</u></b><br>Oranges, grapefruits and tangerine  |   | Avocado,  |
| <b><u>SOLUBLE FIBRE-CONTAINING FOODS</u></b><br>Cowpeas, beans, broad beans, pigeon peas etc.                               | Bambara nuts, groundnuts, soyabeans.  |   |
| <b><u>STARCHY FOODS/ CEREALS</u></b><br>Yam, cassava, plantain (green), rice, guinea corn, whole wheat, maize, millet, etc. | Refined (processed) food such as semovita, corn-vita, banking flour, spaghetti, macaroni noodles etc. |   |
| <b><u>SUGARY FOODS</u></b>  | Refined sugar and foods:-<br>Containing added sugar.  | Sweetened carbonated drinks (soft drinks) jam, marmalade.   |
| <b><u>SALT</u></b>  | Cooking Salt  | Salty foods such as corned-beef, sardine, bullion cubes and MSG (Mono-sodium glutamate) salted fish/ meat.<br>Adding of salt to cooked food at tables |

| USE/TAKE              | REDUCE IN-TAKE | AVOID  |
|-----------------------|----------------|--|
| <b><u>ALCOHOL</u></b> |                | Alcohol e.g Ogogoro,<br>Palm wine, gin sherry<br>Champagne, alcoholic<br>Wines, beer, stout etc. |
| <b><u>TOBACCO</u></b> |                | Tobacco, Cigarettes,<br>Cigar, snuff   |

**NOTE:**

- Cook or boil food instead of frying
- If hypertensive, reduce salt intake to the barest minimum
- The following simple exercises are encouraged and can be used in weight control by people with cardiovascular problems. Strolling, brisk walking, jogging, skipping, swimming, climbing stairs, gardening, tennis, squash (not less than 20 minutes. exercise 3 times a week). For middle aged adults these exercises should be based on medical advice.

**4.3.2 DIABETES MELLITUS**

This is a disorder in which the blood sugar level is higher than normal, and is often associated with obesity, hypertension and cardiovascular diseases. For this reason, the dietary guidelines for diabetes mellitus have taken into consideration the effects of the associated disorders.

| USE   | REDUCE IN-TAKE  | AVOID                                    |
|---|---|--|
| <b><u>STARCHY FOODS</u></b><br>Whole grain e.g. maize,<br>Millet, guinea corn, acha,<br>roots/tubers e.g. water<br>Yam, Irish potatoes, bitter<br>Yam(esuru) plantain<br>(unripe) | Yam, cassava (Akpu, fufu),<br>highly refined flour products<br>such as semolina, cassava flour. | Sweet potatoes, ripe<br>plantain, banana |

| USE   | REDUCE IN-TAKE   | AVOID   |
|---|--|---|
| <b><u>SUGARY FOODS</u></b><br>Fresh diluted fruit juices especially lemon/lime juice, unsweetened tea   | Baked beans, tomato ketchup  | Sugarcane, honey, dates (debino) sugarcane sweet (Alewa) soft drinks, Ice Creams, lolly pops, cocoa-based beverages, candies. Sweets marmalades jellies, Chocolate bars, coffee if hypertensive |
| <b><u>VEGETABLES</u></b><br>Green leafy vegetable with every meal. Fresh vegetable-based salads, garden egg leaves, Squeeze-washed bitter-leaves. Vegetable soup, garden eggs, cucumber as snacks.<br><br>Thickened soup e.g. Ukpo, Achi, Akparata, Ofo, Cowpea, pumpkin (Kebewa), etc. | Starchy thickeners used in preparing soups, such as cocoyam, yam, flour, starch, gari, etc.                      |   |
| <b><u>FATTY FOODS</u></b><br>Fish -Low fat fish e.g. tilapia, stockfish/cod. Lean meat e.g. chicken/turkey without skin, snail, game (bush meat)  | Fatty meat/fish such as hump (tozo), tongue, cowtail, intestine, skin ponmo, bacon, sausage, hamburger, mackerel | Organ meats like liver, kidney, brain (Kwanya)  |
| <b><u>DAIRY PRODUCTS</u></b><br>Skimmed milk, low fat Cheese, yoghurt   | Full cream evaporated milk, cheese, condensed full cream milk, full cream powdered milk.                         | Butter, ice-cream   |



| USE/TAKE   | REDUCE IN-TAKE   | AVOID   |
|--|--|---|
| <b><u>FATS/OILS</u></b><br>Corn oil, sunflower oil,<br>Soyebean oil, groundnut<br>oil, margarine   | Oils rich in saturated<br>fats e.g. palm oil,<br>coconut oil, palm<br>Kernel oil | Fats from animal<br>sources e.g. lard,<br>butter, chicken fat<br>turkey fat.  |
| <b><u>FRUITS</u></b><br>One or two portions of<br>Fruits a day. At least two<br>of the fruits in season<br>once or twice a day like<br>oranges, guava, mangoes |  | Avocad pear, African<br>pear (Ube), coconut.  |
| <b><u>SALT</u></b>   | Salt in cooking  | Salty foods, such as<br>Corned beef, sardine etc,<br>bullion cubes, (mono<br>sodium glutamate in<br>order to reduce salt<br>intake). Adding salt to<br>cooked food at table |
| <b><u>ALCOHOL/<br/>TOBACCO</u></b>   |  | Alcohol, smoking  |

**NOTE:**

- If hypertensive, reduce salt intake to the barest minimum
  - The following simple exercises are encouraged and can be used in weight control in diabetic subject. Exercises such as: brisk walking, swimming, cycling, dancing (all exercises should not be less than 20 minutes, 3 times a week)
  - All exercises should be under medical supervision
  - Can have carbonated drink (soda water) but if hypertensive should consult the doctor or physician
  - Always remember to take drugs if on insulin and oral hypoglycemic
- Please consult a dietician: for the specific amounts of food that should be consumed if on insulin injection.

### 4.3.3 OBESITY

Obesity is a condition in which an individual's body weight in relation to his/her height is above that which is desirable for good health.

These dietary guidelines encourage obese individuals to adopt eating habits that will lead to gradual weight loss. The guidelines are so simple that if adhered to, can become a way of life.

### TOTAL FOOD INTAKE

It is desirable to maintain body weight appropriate for age and size by controlling total food intake. Water intake may be increased for example to control appetite. Also the amounts of food eaten at each meal could be reduced.

In addition, second helpings (extra food) during mealtime should be avoided.

| USE  | REDUCE IN-TAKE   | AVOID  |
|--|--|--|
| <b><u>STARCHY FOODS</u></b><br>Whole grains like corn, millet, guinea corn; roots and tubers e.g. yam, Cocoyam, cassava, etc.            | Refined cereals and tubers such as wheat flour, cassava flour (elubo) yam flour etc. | Pastries such as buns, puff-puff, meat pie, cakes, etc.  |
| <b><u>SUGARY FOODS</u></b><br>Fresh unsweetened diluted fruits juice especially lemon/lime, Unsweetened carbonated water e.g. soda water | Baked beans, tomato ketchup, canned fruits and juices                                | Sugar cane, honey, date (debino), sugar cane sweet (Alewa), soft drink, chocolate drinks, Ice-creams, lolly pops, Cocoa-based beverages, candies, sweets, marmalades, jam, jellies and chocolate bars. |
| <b><u>LEGUMES/NUTS</u></b><br>Foods containing soluble fibre such as beans, soyabeans flour  | Nuts such as coconut, Groundnut, palm kernel nuts                                    |  |

| USE/TAKE  | REDUCE IN-TAKE   | AVOID   |
|---|--|---|
| <b><u>VEGETABLES</u></b><br>More vegetables at each Meal. Eat garden eggs, garden egg leaves, cucumber, carrots, fresh vegetable salad, and green vegetables, including squeeze washed bitter leaves and zogale leaves. |  |   |
| <b><u>FRUITS</u></b><br>One or two portions of fruits daily like oranges grapefruits, any fruits in seasons.  |  | Avocado pear and African pear (Ube)   |
| <b><u>FATTY FOODS</u></b><br>Fish-Low fat fish such as Tilapia, stockfish and Sawa; lean meat, chicken/ Turkey without skin, snail, Games (bush meat)   | Fatty meat/fish such as hump (tozo), tongue cowtail, intestine, skin (ponmo), bacon, sausage, hamburger, mackerel. | Organ meats like liver kidney, brain (Kwanya), egg if blood cholesterol is high |
| <b><u>DAIRY PRODUCTS</u></b><br>Skimmed milk, low-fat cheese and low-fat yoghurt  | Full cream evaporated milk, Condensed milk including local cheese (wara) full cream Powderdered milk               | Animal fat butter   |
| <b><u>FATS/OILS</u></b><br>Corn oil, sunflower oil, soyabean oil, groundnut oil, margarine  | Oils rich in Saturated fats e.g. palm oil coconut oil, Palm Kernel oil   | Fats from animal source e. g. chicken, turkey, lards and butter                 |
| <b><u>ALCOHOL/ TOBACCO</u></b>  |  | Drinking alcohol, smoking tobacco   |



**NOTE:**

- Cook and boil food instead of frying
- Exercise regularly (at least for 20 minutes 3 times per week)
- Exercises such as: brisk walking, swimming, climbing stairs, skipping and jogging (for older children, adolescents and Young adults) will help you loose weight.
- Ensure regular weight monitoring
- For properly planned diet, please consult your dietician

**ADDITIONAL TIPS**

- Weight recycling frequent fluctuation in body weight and skipping of meals are not desirable.
- Sit down - Train yourself to eat while sitting e.g. on mats or at table. It is easy to overeat when meals are grabbed on the run.
- Slow down - Eat slowly enough to give your body time to release the enzyme that tells your brain when you have had all you need.
- Do not give up - Failing in your diet once or twice does not mean the effort is hopeless. Simply acknowledge that you overate. Get back to plan.
- Reward yourself - Treat yourself with a special favourite snack for each week that you maintain your new weight (when desired weight is reached).