



# **SNS COLLEGE OF ALLIED HEALTH SCIENCES**

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## **TOPICS:**

- 1. BALANCED DIET**
- 2. NUTRITIONAL DEFICIENCIES**









# Balanced Diet



- Contains an adequate amount of all the nutrients required by the body to grow, remain healthy and be disease-free.
- Provides the necessary energy requirement, protects against vitamin, mineral, and other nutritional deficiencies, and builds up immunity.
- A balanced meal helps provide the body with all the nutrients it needs to maintain normal growth and repair functions, strengthen bones, supports brain development
- Helps boost immunity, reduces the risk of developing Type 2 Diabetes, cardiovascular diseases, and some cancers, maintains a healthy weight, and helps recover quickly from diseases and trauma.



# 7 Essential Components of A Balanced Diet



- Proteins, carbohydrates, fats or lipids, micronutrients such as vitamins and minerals, fibre and water are the essential components of a well-balanced diet.
- **Carbohydrates** - Carbohydrates provide you with energy, which should constitute 50-60% of your diet.
- Sources of healthy carbs are-
  - Whole grains like Oats
  - Whole wheat
  - Legumes
  - Millets like ragi, barley
  - Vegetables



- **Protein** - Helps you build muscles and develops skin and hair. It should constitute 10-12% of your diet.
- Sources of protein are-
  - Legumes and beans, soyabean
  - Poultry-Chicken
  - Seafood- Fish, Crab, Prawn, Lobster
  - Eggs
  - Nuts and Seeds
  - Yoghurt
- **Fat** - Helps to maintain body temperature and help absorb fat-soluble vitamins A, D, E &K if choose a right fat
- Sources of healthy fat are -
  - Avocados
  - Nuts
  - Seeds
  - Extra virgin Olive oil
  - Fatty fish- Salmon





- **Vitamins** - Performs biological functions for normal maintenance of optimum growth and health
- Sources of vitamins are -
  - Fruits
  - Vegetables
  - Poultry
  - Seeds
  - Nuts
- **Minerals** - Promote the growth of organs. Some essential minerals are iron, calcium, potassium, iodine, and sodium.
- Sources of minerals are -
  - Fish
  - Meat
  - Beans
  - Cereals
  - Nuts & Seeds





- **Fibre** - Fibre helps in digestion and also helps in lowering your [cholesterol](#) levels and [controlling sugar levels](#).
- Sources of fibre are -
  - Oats and Brown rice
  - Beans
  - Whole grains
  - Nuts & seeds
- **Water** - Should take at least eight glasses of water as it hydrates your body and is used in body functions.





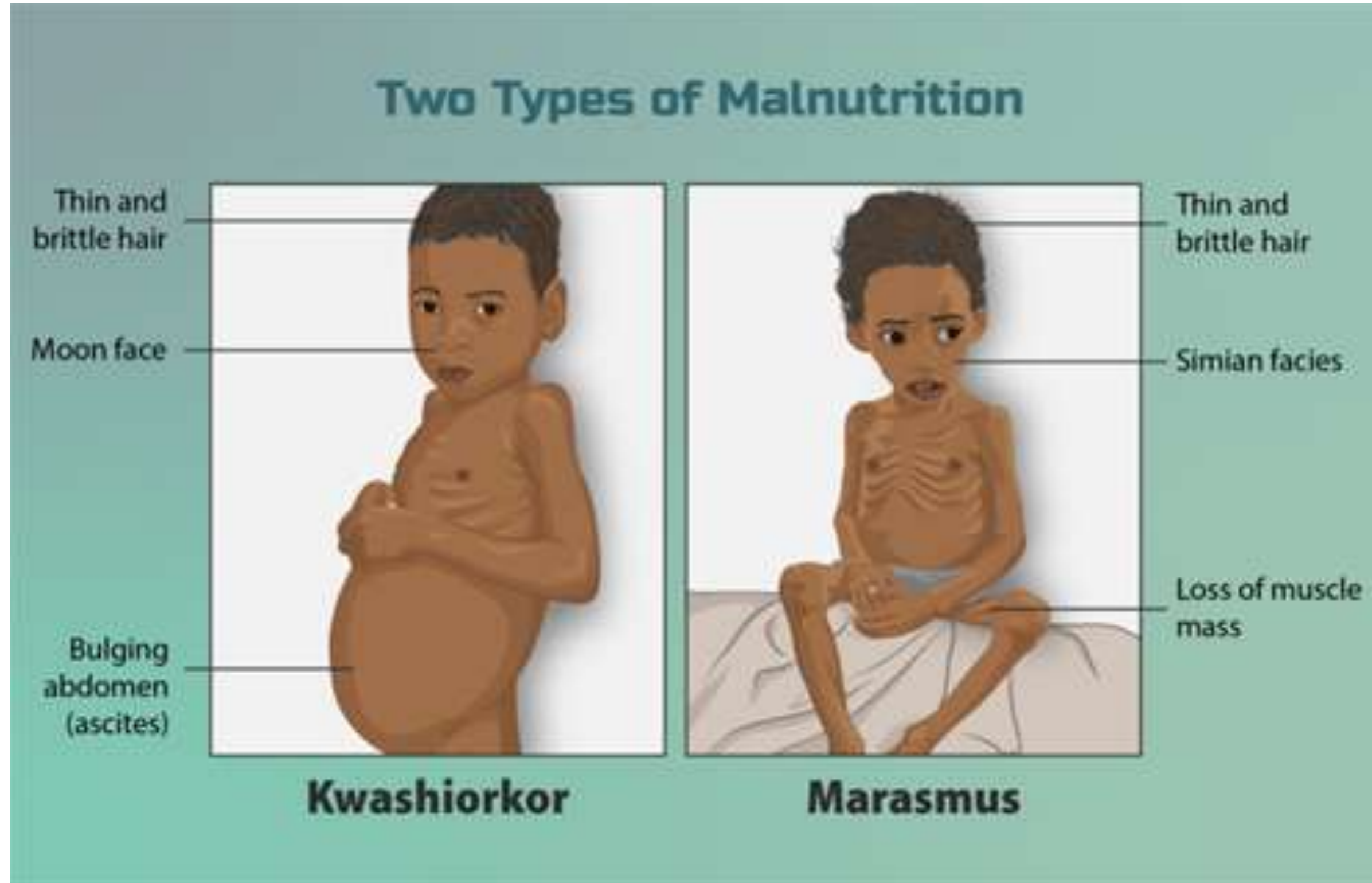
# Importance



- Meet the nutritional demands of the body and prevent malnutrition
- Keep up energy levels and maintain normal body functions
- Boost the immune system and optimise cell repair
- Prevent lifestyle diseases such as Type 2 Diabetes, [Cardiovascular diseases](#), and some [cancers](#)
- Strengthen bones, muscles, skin, teeth, and eyes
- Help support healthy pregnancies



# NUTRITIONAL DEFICIENCIES





# NUTRITIONAL DEFICIENCIES



- Both Marasmus and Kwashiorkor are caused due to nutritional deficiencies.
- The causes, symptoms, treatments for both the deficiency disorders vary.

## **Marasmus:**

- Marasmus is a type of nutrition energy deficiency disorder, is mainly caused due to the deficiency of nutrients such as protein, carbohydrates and fats.
- Mainly occurs due to poverty and food scarcity.

## **Kwashiorkor**

- Kwashiorkor is a type of nutrition deficiency disorder, which results from a severe protein deficiency.
- Most common in rural areas, especially in the sub-urban regions and areas with low food supply are more prone to this disease.



# Marasmus



- Is a severe form of [malnutrition](#) — specifically, protein-energy undernutrition.
- It results from an overall lack of calories.
- Deficiency of all macronutrients: carbohydrates, fats, and protein.
- People with this are visibly depleted, severely underweight and emaciated (Thin & Weak).
- Children may be stunted in size and development. Prolonged marasmus leads to starvation.
- Marasmus has a wasted and shriveled appearance - lean and wrinkled skin by shrinkage





## Risks



- Marasmus can affect anyone who lacks overall nutrition.
- Particularly affects children, especially infants, who require more calories to support their growing bodies.
- More common in developing countries with widespread poverty and food scarcity, and where parasites and infectious diseases may contribute to calorie depletion.
- In the developed world, elderly people in nursing homes and hospitals or who live alone with few resources are more at risk.



- When the body is deprived of energy from food, it begins to feed on its own tissues — first [adipose tissue \(body fat\)](#) and then [muscle](#).
- It also begins shutting down some of its functions to conserve energy.
- Cardiac activity slows down, causing low heart rate, low blood pressure and low body temperature.
- Children with chronic marasmus will not have the physical resources to grow and develop as they should.
- They may be stunted in size or have developmental delays or intellectual disabilities.



# Causes



- Poverty and food scarcity.
- Wasting diseases such as [AIDS](#).
- Infections that cause [chronic diarrhea](#).
- [Anorexia](#) (Eating disorder - intense fear of gaining weight.)
- Inadequate [breastfeeding](#) or early weaning of infants.
- [Child abuse/neglect](#).
- [Elder abuse/neglect](#).





## External Signs

- Visible wasting of fat and muscle.
- Prominent skeleton.
- Head appears large for the body.
- Face may appear old and wizened.
- Dry, loose skin (skin atrophy).
- Dry, brittle hair or [hair loss](#).
- Lethargy and weakness.
- Weight loss of more than 40%.
- [BMI](#) below 16.

## Symptoms

- [Dehydration](#).
- [Electrolyte imbalances](#).
- [Low blood pressure](#).
- [Slow heart rate](#).
- [Low body temperature](#).
- Gastrointestinal [malabsorption](#).
- Stunted growth.
- [Developmental delays](#).
- [Anemia](#).
- [Osteomalacia](#) or rickets.





# Kwashiorkor



- Occurs in people who may have access to carbohydrates — bread, grains or starches - but especially deficient in protein, as well as some key micronutrients in their diet.
- People with kwashiorkor may not be deprived of calories in general but are deprived of protein-rich foods.
- Causes fluid retention in the tissues ([edema](#)), which distinguishes kwashiorkor from other forms of [malnutrition](#).
- People with kwashiorkor may look emaciated in their limbs but swollen in their hands and feet, face and belly.
- The [distended abdomen](#) typical of kwashiorkor can be misleading in people who are actually critically malnourished.



- Kwashiorkor is rare in developed countries.
- It's mostly found in developing countries with high rates of poverty and food scarcity.
- Poor sanitary conditions and a high prevalence of infectious diseases also help set the stage for malnutrition.
- Can affect all ages, but it's most common in children, especially between the ages of 3 to 5 - have recently transitioned from [breastfeeding](#) to a less adequate diet — one higher in carbohydrates but lower in protein and other nutrients.





## Signs and Symptoms

- Edema (swelling with fluid, especially in the ankles and feet).
- [Bloated stomach](#) (a build-up of fluid in the abdominal cavity).
- Dry, brittle hair, [hair loss](#) and loss of pigment in hair.
- [Dermatitis](#) — dry, peeling skin, scaly patches or red patches.
- [Enlarged liver](#), a symptom of [fatty liver disease](#).
- [Dehydration](#).
- Loss of appetite ([anorexia](#)).
- Irritability and [fatigue](#).
- Stunted growth in children.

## Complications

- [Hypoglycemia](#) (low blood sugar).
- [Hypothermia](#) (low body temperature).
- [Hypovolemia](#) (low blood volume)
- [Electrolyte](#) imbalances
- [Immune system](#) failure
- [Cirrhosis of the liver](#) and [liver failure](#).
- [Small intestinal bacterial overgrowth](#).
- Growth and [developmental delays in children](#).
- Starvation and death.





# Assessment



1. Balanced Diet?
2. Components of Balanced Diet?
3. Mention Nutritional Deficiencies?
4. Difference between Marasmus and Kwashiorkor?



**THANK YOU**