Concept of Balanced Diet

Important definitions

- **Health:** it is defines as the state of complete physical, mental and social wellbeing and not merely the absence of diseases.

- **RDA (Required Dietary Allowance):** the average daily nutrient intake level sufficient to meet the nutrient requirement of all healthy individuals in a particular life-stage and gender group.

Important definitions

- **Diet:** The kinds of food that a person, animal, or community habitually eats.
- In nutrition, diet is the sum of food consumed by a person or other organism.
- The word diet often implies the use of specific intake of nutrition for health or weight-management reasons.
- **Balance diet:** A diet consisting of a variety of different types of food and providing adequate amounts of the nutrients necessary for good health.

What is a balanced diet?

- A balanced diet is one which provides all the nutrients in required amounts and proper proportions. It can easily be achieved through a blend of the five basic food groups.
- The quantities of foods needed to meet the nutrient requirements vary with :

- age,
- gender,
- physiological status and
- physical activity.

What is a balanced diet?

- A balanced diet the energy should come from-

- Around 50-60% of total calories from carbohydrates, preferably from complex carbohydrates,
- about 10-15% from proteins and
- 20-30% from both visible and invisible fat.

What does a balanced diet do?

- Meets nutritional requirements
- Provides phytochemicals (plant derived chemicals)
- Improves immunity
- Helps to cope up stress
- Develops optimum cognitive ability

Factors to be considered for a balanced diet

- Important factors that need to be considered when formulating a balanced diet are:

① Food groups and nutrient contents

② Nutrient requirement of individuals

③ Menu planning

④ Socio-economic factors

⑤ Cultural and religious factors

The five food group system

The five food group system

According to the food guide, the *five food groups* are:

1. Pulse-milk-egg-meat-fish group of body-building foods
2. Protective vegetable and fruits group
   - **(a)** Green and yellow vegetables and fruits group
   - **(b)** Amla-guava-citrus fruits group
3. Other vegetables and fruits group
4. Cereals and millets group
5. Oils, fats and sugars group

Nutrient contribution by each food group

Food Groups	Foods Included in the Group	Principal Nutrients in the Group
1. Body-building foods (A) Milk	Whole, skim, dry, evaporated, condensed milk, cheese, ice-cream, yoghurt, curds	The milk group is the best source of calcium and riboflavin. It also contains protein, phosphorus carbohydrate, thiamine, and vitamin D. Whole milk contains in addition to fat, vitamin A. Do not substitute calcium tablets because they do not contain protein and riboflavin. Do not substitute cream because it is the fat content of milk. Do not substitute condensed milk because it has a very high sugar content.
(B) Meat, poultry, fish and eggs	Mutton, *kheema* (minced meat), fish, shellfish, crabs, crusta-ceans, chicken, eggs	Meat, poultry, fish and eggs supply protein, iron, thiamine, niacin, fat, phosphorus and some riboflavin. Liver is an excellent source of vitamin A and iron. Saltwater fish contains iodine. Eggs have protein, iron, thiamine, phosphorus, riboflavin and the yolk has vitamin A and fat.
(C) *Dal*, nuts and oil-seeds	*Tur, mung, masur* and several legumes and their *dals*. Nuts include peanuts, coconuts almonds, pistachios and walnuts. Oilseeds include sesame (*til*), garden cress seeds (*haliv*), etc.	This group supplies protein, iron and thiamine. However, the protein in legumes is of a lower quality than that found in meat, fish and eggs. The nuts supply fat, protein, iron, thiamine, riboflavin and niacin.

2. Protective vegetables and fruits group (A) Yellow and orange fruits and vegetables and leafy vegetables	All leafy vegetables (*sag*, *kee-rai*, *palak*) cabbage, onion tops, carrots, orange mango, papaya.	The dark green and yellow vegetables are a rich source of vitamin A. The leafy vegetables are rich source of iron, fibre and some amounts of vitamins and minerals.
(B) Vitamin C-rich group	All citrus fruits like *amlas*, lemon, guava, lime, orange, grapefruit, tomato and vegetables like drumstick, cabbage, etc.	Rich sources of vitamin C.
3. Other vegetables and fruits, roots and tubers	Brinjal, French beans, *gavar*, *papdi*, yam, potatoes, onions, cucumber, *dudhi*, beetroot. bananas, grapes, melons, apples.	Potatoes have thiamine, iron, vitamin C, besides being rich in starch. Other vegetables supply small amount of vitamins and minerals besides supplying good amount of fibre. Vegetables and fruits from this group should not be used to substitute vegetables and fruits from group. 2 (A) and (B). i.e. the vitamin A and C-supplying foods.

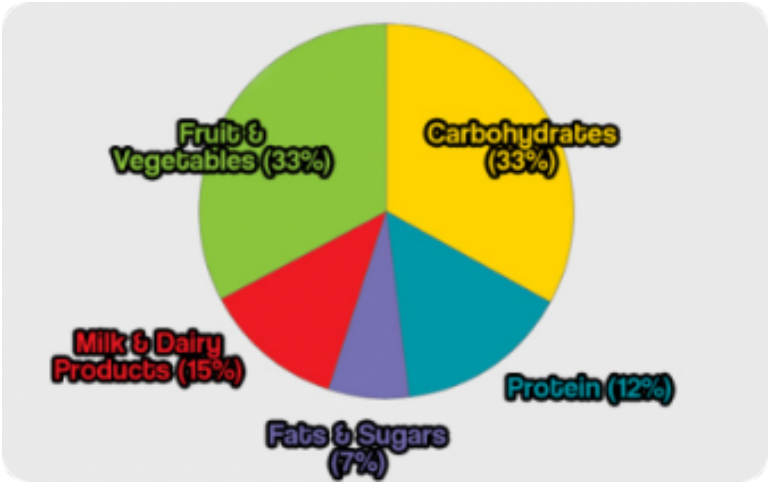
4. Cereals and millets	Rice, wheat, *jowar*, *bajra*, *ragi*, maize and their products such as *suji*, (*rawa*), rice flakes (*poha*), puffed rice (*kurmura*), vermicelli, spaghetti, bread, pizza, noodles.	All cereals contain starch and some incomplete protein. To achieve protein of high biological value, combine cereal and pulse preparation. Whole grain cereals contain thiamine and cellulose. Polished grains (e.g. polished rice) are of poorer nutritive value than their whole grain counterparts. Bread manufactured by the large companies which is pre-sliced contains added nutrients like lysine and is of better quality than the ordinary baked ones. *Poha* or riceflakes also supply some amount to iron.
5. Oils and fats, sugar and jaggery	All oils like groundnut, mustard, *til*, sunflower, corn, soya etc. All fats such as *ghee*, butter, *vanaspati*. Sugar like *khadisakhar* (large crystals) table sugar, sugar cubes, powdered sugar, etc.	Supply calories (1 g = 9 cal) and essential fatty acids. Oils containing the PUFA* (Poly-unsaturated fatty acids) are advised for consumption (corn oil safflower oil and soya oil) than the oils containing saturated fatty acids. Refined oils arc enriched with vitamins A and D. *Ghee*, butter and *vanaspati* contain saturated fatty acids hence consumption must be limited. Good source of vitamins A and D. Sugar and jaggery supply only energy (1 g = 4 cal).

Dietary guidelines

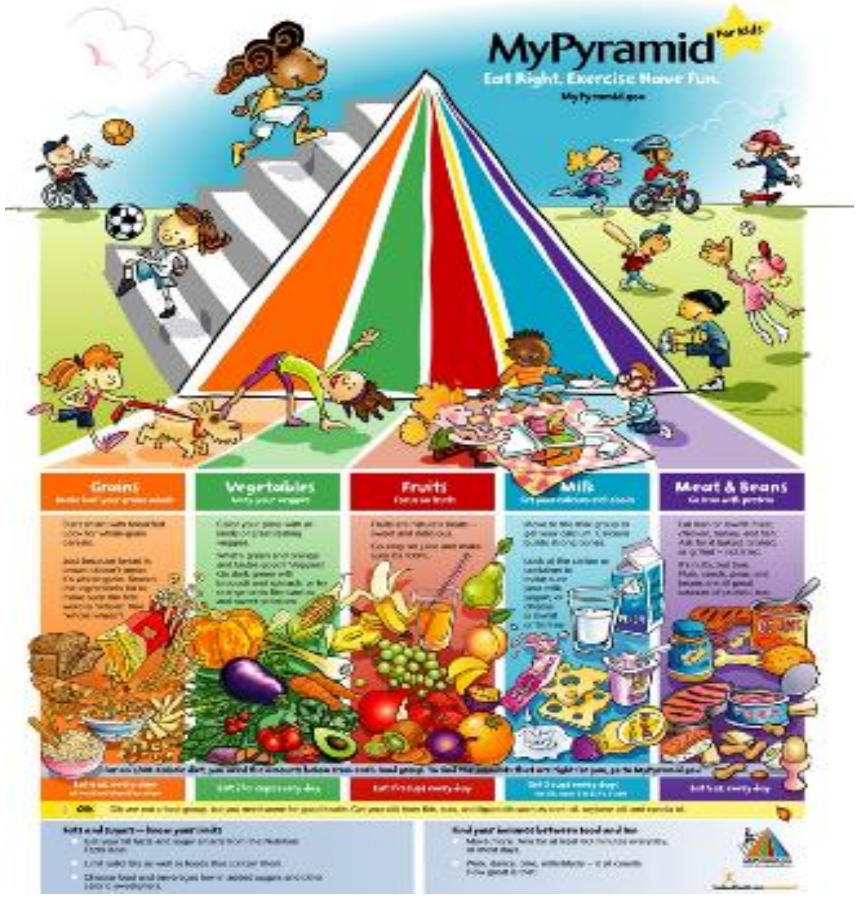
- These are developed mainly as a public health tool whereby foods are categorized into food groups and the guideline diet is then presented as suggested relative proportions of these food groups.
- The number and definition of food groups can vary depending on the country of origin, and typically reflects the common cultural diet in that country
- The appropriate food-based dietary guidelines, can help identify food groups in excess or inadequacy and hence suggest changes for improving overall diet quality. In addition, provided overall energy intake is appropriate, adherence to these guidelines will more likely lead to adequate relative intakes of macronutrients and micronutrients.

Food guide for Bangladesh

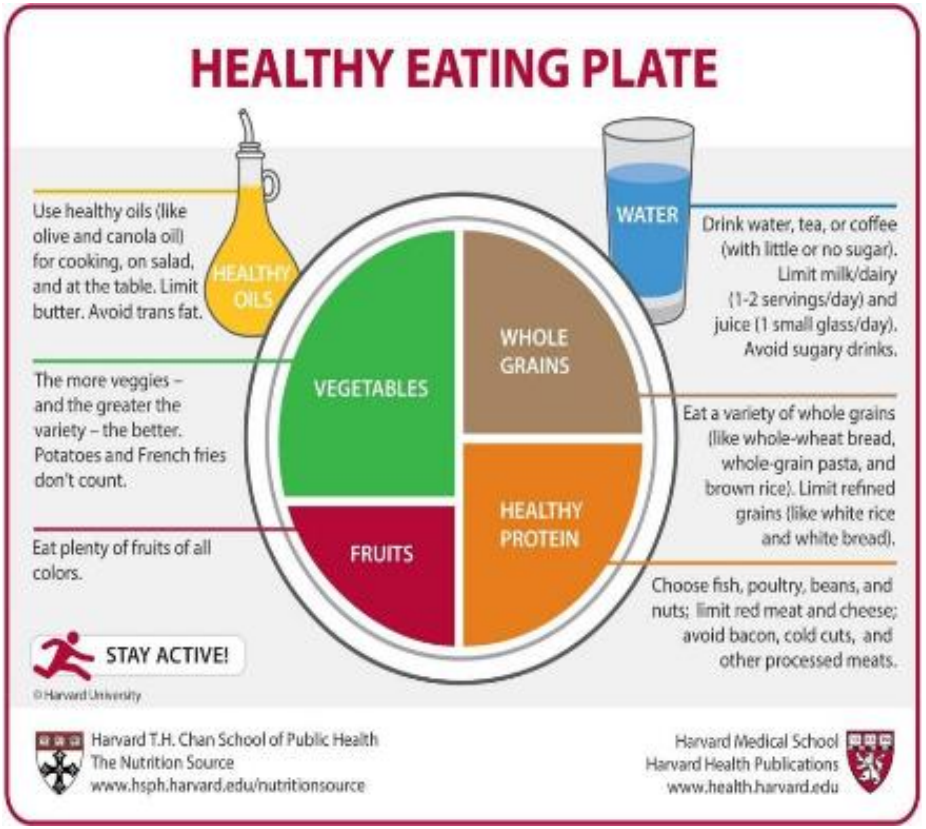
In the UK, the FSA depicts a healthy diet based on five food groups whose relative proportions are shown as segments on a plate, promoted as the ‘eatwell plate’



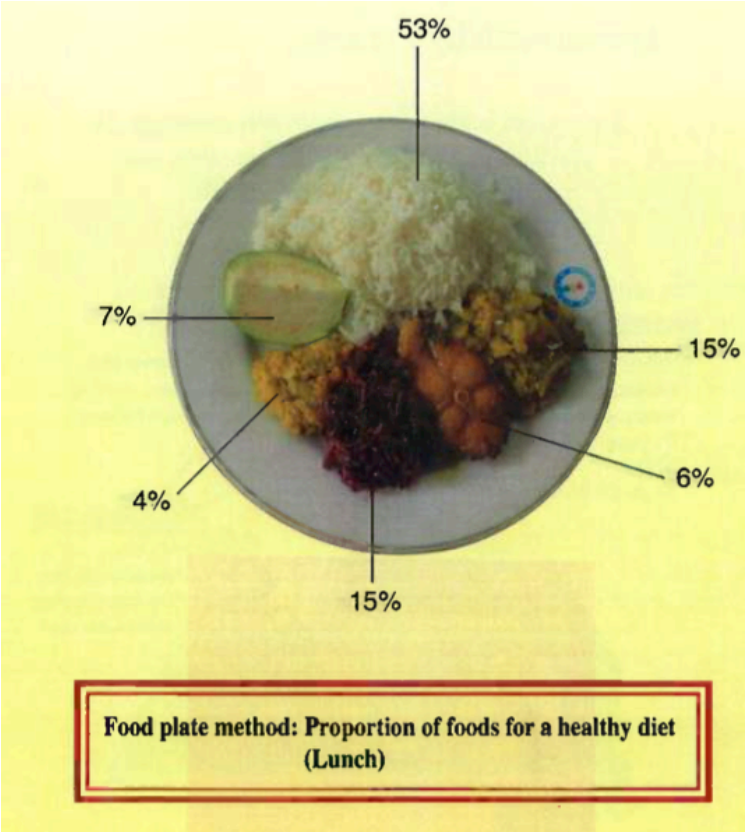
In the US, the United States Department of Agriculture (USDA) Center for Nutrition Policy and Promotion endorses the My Pyramid Food Guidance System, presenting the diet as comprising six food groups.



In an effort to rebrand itself, the food pyramid was replaced in 2011 with MyPlate. It cleverly depicts a place setting divided into five food groups.



Proportion of food in a healthy diet



Food plate method: Proportion of foods for a healthy diet (Lunch)

The proportion of food items (in percent) for a healthy lunch is proposed by the food plate method (Nahar et al., 2013) that could be met through traditional food items in Bangladesh.

According to the benchmarks, 53% will be rice or wheat or any carbohydrate like mashed potato. Mixed vegetables are 15% while leafy vegetables are 15%. Many options are available in preparing this menu. Meat or fish could account for 6%, and plant protein lentil accounts for 4% of the prescribed diet. The remaining 7% is for fruits of seasonal origin.

General guidelines for formulating a balanced diet

- Include foods from all food groups to avoid monotony
- If cereals and pulses form the main proportion of the diet, they should be taken in combination to provide good quality protein. The ratio of pulses to cereals should be 1:7 or 1:8 in the diet. Because larger quantity is consumed, small deficits will remain regarding protein quality

- Vegetables and fruits being good sources if vitamins and minerals as well as dietary fibers, their regular consumption should be ensured.
- Milk can be a good source of protein in case of vegetarians. However, milk or milk products must be included in regular diets as well
- Adequate amounts of fats and oil should be present in the diet in order to utilize certain nutrients especially fat-soluble vitamins well. Too much consumption is to be restricted even by younger individuals
- Diet should be adequate both qualitatively and quantitatively

- Individual preferences of foods are to be considered while formulating a balanced diet
- Factors associated with food availability e.g. seasonal variation, geographical location, production, etc are also to be considered
- Any special condition e.g. food allergy, lactose intolerance etc. must be handled with care by avoiding specific foods that might cause irritation
- The diet should be economic to the individual.