

## BALANCE DIET FOR ALL AGE GROUP

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### ABSTRACTS

For maintaining good health and physical efficiency, the diet should provide adequate amounts of all nutrients, For designing balance diet, it is essential to know the daily requirements of different nutrients. The amount of nutrients needed by individuals vary with different ages, activities and sex. The recommendation are given for adult men, women, children and infants. Variation in energy needs according to activity are indicated during adulthood. Specially requirements of pregnancy and lactation are also covered in the recommendations. Balance diet is important for the physical, mental and emotional development of an individual.

**KEYWORDS:** Health, balance diet, carbohydrates, protein, vitamins, micronutrients, macronutrients.

### INTRODUCTION

A balance diet is vital element for a long as well as healthy life, however *selecting the* right diet plan is definitely an intimidating task. An eating plan is considered to be balanced whether it consists of the right amounts of carbohydrates, healthy proteins, vitamins and

minerals also fulfill the calorie needs of our body, Instead we should follow a well balanced diet plan & consume everything in moderation.

**Definition:** A diet may be define as the kinds of food on which a person or group lives. A balance diet is define as one which contain a variety of food in such quantities and proportion that the need for energy, amino acid, vitamins, minerals, fats, carbohydrates and other nutrient is adequately met for maintaining health, vitality and general well-being and also make a small provision for extra nutrients to with stand short duration of leanness.

A balance diet has become an accepted means to safeguard a population from nutritional deficiencies.

In constructing balanced diet, the following principles should be done in mind.

- (a) First and foremost, the daily requirement of protein should be met. This amount to 10-20% of the daily energy intake.
- (b) Next comes the fat requirement, which should be limited to 15-30% Of the daily energy intake.
- (c) Carbohydrates rich in natural fiber should be constitute the remaining food energy and the requirement of micronutrient should be met.

In other words we can say that a normal diet then can only be called as BALANCE DIET when it provide proper nutrition to an individual in order to gain a healthy body.

Now the question arises that what is nutrition?

- “Nutrition” may be defined as the science of food and its relationship to health.
- It is concerned primarily with the part played by nutrients in body growth, development and maintenance.
- The word nutrient or “food factor” is used for specific dietary constituents such as protein, vitamins and minerals.
- Good nutrition means maintaining and nutritional status that enables up to grow well and enjoy good health.
- Most of the people know that a balance of good nutrition and physical activity can help them to reach and maintain a healthy weight .But the benefits of good nutrition go beyond weight. Good nutrition can also.

- (1) Improve cardiovascular and other body system functions, mental well-being, school/cognitive performance and wound healing or recovery from illness or injury.

(2) Reduce the risk for disease, including heart disease, diabetes, stroke, some cancers and osteoporosis.

(3) Increase energy and body's ability to fight of illness.

## NURIENTS

Nutrients are organic or inorganic complexes contained in food. There are about 50 different nutrients which are normally supplied through the food we eat. Each nutrient has specific functions in the body. Most natural food contain more than one nutrient. These may be divided into.

(i) **MACRONUTRIENTS:** These are the protein, carbohydrates and fats which are often called "proximate principles" because they form the main bulk of food. In the Indian dietary, they contribute to the total energy intake in the following proportion.

Protein: 7 to 15%

Fat: 10 to 30%

Carbohydrates: 65 to 80%

(ii) **MICRONUTRIENTS:** These are vitamins and minerals. They are called micronutrients because they are required in small amounts which may vary from a fraction of a milligram to several grams.

## MINERALAS

More than 50 chemical elements are found in human body, which are required for growth, repair and regulation of vital body function.

These can be divided in to the major groups.

(a) **Major minerals:** Calcium, phosphorus, sodium, potassium, magnesium

(b) **Trace elements:** Iron, iodine, fluorine, zinc, copper, cobalt, chromium, manganese, molybdenum, selenium, nickel, tin, silicon, vanadium.

These are element required by the body in quantities of less than a few mg/day.

Many more have been added to the in the last few years'

(c) **Trace contaminants with no know function:** Lead, mercury, barium, boron, aluminum.

The bioavailability of minerals such as iron & zinc may be low in a total vegetarian diet. Besides large amount of dietary fiber may interfere with proper absorption.

Trace element should not be used as dietary supplements since, excessive amount can have injurious effects.

**Basic concepts:** The science of human nutrition is mainly concerned with defining the nutritional requirements for the promotion, protection and maintenance of health in all groups of the population. Such knowledge is necessary in order to assess the nutritional adequacy of diet for growth of infants, children and adolescents and for maintenance of health in adults of both sexes & during pregnancy and lactation in women.

In the context a variety of terms have been used to define the amount requirements, minimum requirements, recommended intakes, or allowances and safe level of intake.

Of these, the term “recommended dietary intake or allowance”(RDA) has been widely accepted.

**Recommended dietary allowance (RDA):** The average daily dietary nutrient intake level sufficient to meet the nutrient requirement of nearly all (97-98%) healthy individuals in a particular life stage of gender group.

**Adequate intake:** A recommended average daily intake level based on observed or experimentally determined approximation or estimated of nutrient intake by a group of apparently healthy people, that are assumed to be adequate- used when an RDA can not be determined. In the Indian context, this is referred to as “acceptable intake”.

**Tolerable upper intake level(UL):** The highest average daily nutrient intake level that is likely to pose no risk of adverse health effects for almost all individuals in the general population. As intake increases above the UL, the potential risk of adverse.

**Estimated average requirement (EA):** The average daily nutrient intake level estimated in a particular life stage and gender group.

Nutritional requirement of person is relate to a one's, age, profession and state of health. There are several stage of life such as early childhood, adolescence, pregnancy and illness when nutritional needs are of special importance.

A balance diet, therefore, has to be formulated keeping in mind the specific situation. Now, let us study the additional requirements of diet during these stage.

### 1. Nutritional needs for different age groups

- Energy and protein are needed for building of new tissues.
- In stages of life when new tissues are being formed the need of protein and energy rich carbohydrate is much more.
- The two periods of special need are from birth to 2-3 years and during adolescent. The rate of growth in the period from birth to six months is very rapid and nutritional requirement of the body is very high in this period. During this period, an infant required more than double the amount of energy per kg of body weight as required by an adult man doing heavy work.

Similarly, a 12-15 year old girl required about 1000kj of energy from oxidation of carbohydrates and fats and about 50g of protein per day. Therefore, during this day period that is the early childhood and adolescent (12-15yrs) the diet should contain sufficient amount of protein and energy supplying nutrients.

- On other hand a healthy adult needs protein only for maintenance. Therefore he does not require much protein.
- Growing children also requires large amounts of minerals like calcium and phosphorus for the formation of bones.
- Milk is a good source of both calcium and phosphorus. Therefore growing children should take sufficient amount of milk. Growing children also need iron for red blood cells. They also required vitamins such as vit, A for healthy eyesight and vit. C for general health.

### 2. Nutrition needs for person in different occupations

Persons involved in heavy work such as rickshaw –pullers, construction worker, coolies, milk worker etc, require food, which is rich in energy supplying nutrients that is carbohydrates and fats. Such person may not require large amount of protein in their food.

On other hand, person doing lighter work requires less energy.

Athletes also need energy and protein rich food.

### 3. Nutritional need during pregnancy and lactation

- Protein and energy are needed for building new tissues. During pregnancy growth of tissues place at very fast speed. Extra protein and carbohydrates are needed in the diet of the mother to produce about 8kg of body tissues during pregnancy.

- As growth is more rapid during last 3 months of pregnancy, the demand for protein and energy is greatest at this stage.
- During pregnancy, the need for minerals such as iron, calcium and iodine increases. The expectant mother also has an increased need for vit. –A, C and B2(riboflavin).
- When a mother nurses her baby, her requirement for protein also become high. It is the body protein which converted in to milk protein. The requirement of protein varies with the stages of lactations and the amount of milk produced.

#### **4. Nutritional needs for patients and during recovery**

Patient and the persons recovering from disease need additional energy and proteins, for building new tissues.

If a person suffers, from some ailment that involves loss or degeneration of body tissue then his need for protein may be more.

For example, loss of blood due to some accident or surgery results in increased need of protein to make for the loss of blood.

#### **Mother's milk is the best food for infants**

Besides having excellent nutritional value, it is always clean. In most of the cases, mother's is the sufficient to satisfy the needs of the baby during the first 4-6 months.

Mother's milk is the rich in carbohydrates, protein, vitamins and other nutrient and is easily digested. During the first 2-3 days after the birth of the baby the breast does not secrete milk but secretes yellowish fluid called colostrums.

Colostrums is rich in nutrient and also contains antibodies which protect the body against infectious disease.

Breast feeding is specially important where people live in unhygienic environments.

After the six months volume of mother's milk decreases. At the same time baby's need for various nutrients increases. At this stage, his food may be supplemented with cow's milk, rice, potato, banana, fruits juices and other cereals.

Balance diets formulated by the Indian Council of Medical Research are given below.

**BALANCED DIETS**

(Quantities are given in grams)

Food items	Adult man			Adult woman			Children		Adolescent	
	Sedentary	Moderate work	Heavy work	Sedentary	Moderate work	Heavy work	1-3 yrs	4-6 yrs	Boys 10-12 yrs	Girls 10-12 yrs
Cereals	460	520	670	410	440	575	175	270	420	380
Pulses	40	50	60	40	45	50	35	35	45	45
Leafy vegetable	40	40	40	40	100	50	40	50	50	50
Other vegetable	60	70	80	80	40	100	20	30	50	50
Roots & tubers	50	60	80	80	50	60	10	20	30	30
Milk	150	200	250	250	150	200	300	250	250	250
Oil & fats	40	45	65	65	25	40	15	25	40	35
Sugar or jaggery	30	35	35	55	20	40	30	40	45	45

**BALANCE DIET CHART**

To maintain a healthy body, its important to fallow a balance diet plan which comprises all the basic nutrients required by our body. Therefore, here is a balanced diet chart for daily use, which contain food items to be included in our daily diet plan.

Since most of us are unaware of the correct proportions of nutrients and minerals required in the body consequently lack them. This eventually leads to various health related problems & debilitating disease like cardiovascular elements, diabetes, osteoporosis and stroke.

These chart cover the nutrients & calories required by people of all age group. However, since the nutritional requirement differs from person to person, it's recommended to consult a dietitian who can make a personalized balanced diet chart according to age, weight, sex and physical activity of a person.

**RDAs during pregnancy**

- 300 Kcal, 15g protein, 600mg calcium and about 10 mg iron, 300mg folic acid are needed than the normal women.

**One day menu plan for pregnant women**

Breakfast	Besan paratha-2, curd- 1 katori or omlet( 2 -eggs), bread 4 slice
Mid day morning	Fruit juice/ fruits chat One cup tea with roasted channas(black grams)
Lunch	Rice-1 plate, dhal-1 katori,chappati 1 or 2, green salad, raita , green vegetables
Evening tea time	Milk -1 cup, biscuits -4-6
Dinner	Roti- 2 or 3, dhal/meat 1 –katori, gegetables, kheer/ fruit custard

**RDAs during lactation (0-6months)**

	<b>Sedentary worker</b>	<b>Moderate worker</b>	<b>Heavy worker</b>
	2425	2775	3475
Protein	75	75	75
Fat(g)	45	45	45
Calcium(mg/d)	1000	1000	1000
Iron(mf/d)	30	30	30
Retinol( $\mu$ g/d)	950	950	950
B-Carotene ( $\mu$ g/d)	3800	3800	3800
Thiamine( mg/d)	1.2	1.4	1.5
Riboflavin( mg/d)	1.4	1.6	1.8
Niacin (mg/d)	16	18	20
Pyridoxine( mg/d)	2.5	2.5	2.5
Folic acid( $\mu$ g/d)	150	150	150
cynocobalamine( $\mu$ g/d)	1.5	1.5	1.5
Vitamine -C mg/d)	80	80	80

**One day menu plan for lactating mother**

Work sedentary,energy-2557, protein -75g, calcium-1000g

	<b>Exchange</b>	<b>Amount</b>
Early morning	Milk with sugar, biscuit	One glass(200ml), 4
Break fast	Bread with butter/ boiled eggs with milk/ milk with cornflakes	4 slices/2/200ml
Mid morning	Panjiri and tea	1 katori, 1 cup
Lunch	Green leafy –vegetables, curd, chappaties, rice, salad	1 katori,1 katori, 2, 1 plate, 1 plate
Evening tea time	Fruits chaat, banana shake, or sprouts with one cup tea	
Dinner	Daal/Bengal gram/meat, chappaties,rice	1 katori,3-4, one plate
Bed time	Milk with protinax/kheer	

**Weaning foods for infants**

<b>Infant's age</b>	<b>Food stuff</b>	<b>Form in which given</b>	<b>Amount</b>	<b>Frequency</b>
6 months	Fruit juice	Juice mixed with sugar	Start with 1 or 2 spoons increase to 30 ml Start with 2 spoons and increase to 40 ml	One time per day
	Dal soup	Clear Soup with little salt With little salt		
	Green leafy vegetables soup	With sugar or		

	Rice gruel Cows milk	salt With sugar		
7-8 months	Cereals Banana Egg yolk	Cooked in water or milk Mashed banana with curd/milk Half boiled egg yolk	2 tsf in a cup of water Start with 2 tsf & increase to 50g	2 times Once a day Once a day
9-10 months	Starchy vegetables Cereal and pulses Vegetables Suji kheer Custard Seaian	Mashed boiled potato Simi solid khichari, Dalia with sugar Mashed boiled vegetables Suji with milh & sugar In milk semisolid Sewain in milk	Start 1 tsf & increase to 50g Start with small amount & increase to half katori Start with small amount to small katori	Once a day Once a day Once a day Once a day
11-12 months	Egg Custard Dalia Khichari Potatoes Fruits Soft biscuits	Soft boiled Semi solid Soft prepration in milk & sugar Well cooked vegetables in khichari Mashed with little salt Apple, mango, melon, banana Biscuit cooked in milk	1 egg 1 katori 1 katori 1 katori 1 ½ 1 to 2 biscuit	Once a day Once a day Once a day Once a day Once a day Once a day

**Balance diet for preschool children (in grams).**

Food items	1-3 yrs	4-6yrs
Cereals	175	270
Pluses	35	35
Leafy vegetable	40	50
Other vegetables	20	30
R00ts & tubers	10	20
Milk	300	250
Oils & fat	15	25
Sugar & jiggery	30	40

**Balance diet for school going children (7-12 yrs)**

Food items	Quantity
Cereals	300-400
Pluses	45
Leafy vegetables	50
Other vegetables	50
Roots & tubers	30
Milk	250
Fat & oil	40
Sugar & jaggery	45

**CONCLUSION**

From above discussion, it must become clear that while formulating a balance diet for particular individual we have to keep in mind the age, sex, state and nature of the work of the individual. Most of the time we didn't eat a proper balanced diet. However this is not due to unavailability but because of prevalent food habits. For example eating only rice and potato is not enough because it does not provide necessary protein required for growth and maintenance of the body.

Similarly, only fish and meat can not keep one healthy because it may not supply necessary minerals and vitamins, vegetable, milk and fruits, which provide minerals and vitamins, have therefore to be included in our diet.

A dietary pattern varies widely in different part of the world. It is generally develops around the kinds of food produced or imported depending up on the climatic conditions of the region, economic capacity, religion, customs, tastes and habits of the people. Balance diet can prevent infection, disease and Promote healthy body growth, Control weight and Keeps us mentally fit, maintain external health too i.e. glowing skin and shiny hairs.

We can experiences good health not just by adopting a balance diet, it has to be combine with proper amount of sleep and exercise, we will gain not only a healthy body but also a healthy mind.

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