



## BALANCED DIET

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### ABSTRACT

The expression balanced diet and the ways intended to attain a well balanced diet has been discussed in this article. To the humans the prevailing theory of balanced diet has postulated that the requirement for successful growth, mental development has been met when supply of proteins, vitamins, carbohydrates, fats etc are adequate. A properly planned menu plan daily with all the nutrients in adequate amounts helps in maintaining good health and fitness. So in the present article balanced diet, the importance of having a balanced diet and dietary charts for different age groups like men women and children has been provided. While considering diet we have to be conscious of some foods like caffeine and alcohol which are discussed here in order to maintain good health. These foods in large amounts cause serious health effects which lead to several socio-economic problems and even to death. So the ways and means to maintain a well balanced diet has been discussed here to live a long healthy life.

**Key words:** Balanced diet, vitamins, proteins, carbohydrates, minerals, fats.

### INTRODUCTION:

India being a sub tropical country with varied food habits, it is very important to have a balanced diet for all groups of people. Hence it is highly important to consider balanced diet as a part and parcel of every one's life. Here we discuss importance of diet consequences of not having it and the sample menu plan for different age groups.

#### Food:

It is anything eaten or drunk which meets the needs of energy, building, regulation and protection of body.<sup>(1)</sup>

#### Balanced diet:

Balanced diet is the one which consists of all required nutrients in adequate amounts for proper maintenance and regulation of body.<sup>(2)</sup>

#### Importance of balanced diet:

A balanced diet should be composed of macronutrients like proteins, carbohydrates and fats and micronutrients like vitamins and minerals and water which collectively helps to maintain and regulate the body functions. It is

responsible for proper maintenance of immune system and helps to maintain good health.<sup>(3)</sup>

**Carbohydrates**-These play an important role in providing energy needed by our body.<sup>(1)</sup>

**Proteins**-These help in building of new tissues, maintenance and repair of the body.<sup>(1)</sup>

**Fats**-These are concentrated sources of energy, carriers of fat soluble vitamins.<sup>(1)</sup>

**Vitamins**-These help in maintaining normal growth, functions of the body and normal body processes.<sup>(1)</sup>

**Minerals**-These are used for building of bones, teeth, formation of structural parts of body tissues and helps in body building.<sup>(1)</sup>

**Hydration:** Water is an important component of balanced diet, it helps in regulating temperature, transport and absorption of nutrients and elimination of waste products.<sup>(1)</sup>

#### Consequences of not having a balanced diet:

Lack of a proper balanced diet in children, adult men, women and geriatrics lead to malnutrition and are prone to several health problems.

### VITAMINS:

Vitamins are regarded as organic compounds required in small amounts to perform specific biological function for normal maintenance, optimum growth and health of people.<sup>(4)</sup>

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**Classification:**

**1) Water soluble vitamins:** <sup>(4)</sup>

a) B-Complex (B<sub>1</sub>, B<sub>2</sub>, Niacin, B<sub>6</sub>, Biotin, Pantothenic acid, Folic acid, B<sub>12</sub>) <sup>(4)</sup>

b) Ascorbic acid <sup>(4)</sup>

**2) Fat soluble vitamins** <sup>(4)</sup>

a) Vitamin A <sup>(4)</sup>

b) Vitamin B <sup>(4)</sup>

c) Vitamin E <sup>(4)</sup>

d) Vitamin K <sup>(4)</sup>

**Vitamin A** <sup>(4)</sup>

Vitamin A contain vitamers such as retinol, retinal and retinoic acid.

Sources:

Liver, kidney, egg yolk, milk, yellow and dark green vegetables like spinach, carrots, pumpkin and sweet potatoes. <sup>(4)</sup>

Functions: <sup>(4)</sup>

- Vitamin A is essential to maintain healthy epithelial tissue of the body.
- Retinol and retinoic acid involved in synthesis of transferrin which play an important role in heme synthesis.
- Vitamin A is essential for maintenance of immune system.
- Cholesterol synthesis requires vitamin A.

**Table 1:** Recommended dietary allowance of vitamin A per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	400
Men	9-13	600
Men	14-50yrs and above	900
Women	9-13	600
Women	14-50yrs and above	700
Pregnancy	14 – 18	750
Pregnancy	19 – 50	770
Lactation	14 – 18	1200
Lactation	19 – 50	1300

Deficiency of Vitamin A leads to: <sup>(4)</sup>

Nightblindness,,Xerophthalmia,Keratomalaciaret ardatation of growth and reproductive system is adversely affected.

**Vitamin D:** <sup>(4)</sup>

Sources: <sup>(4)</sup>

Fatty fish, fish liver oils, milk, eggs, fats and oils, mushrooms, confectioneries and exposure of skin to sunlight for synthesis of vitamin D.

Functions: <sup>(4)</sup>

- Calcitriol is biologically active form of vitamin D. It regulates the plasma levels of calcium and phosphate.

- Calcitriol increases intestinal absorption of calcium and phosphate.

- Calcitriol binds with cystolic receptor to form calcitriol-receptor complex.

- This complex interacts with specific DNA leading to the synthesis of a specific calcium binding protein, this increases calcium uptake by intestine.

- It is involved in regulation of specific genes.

- It acts as an antioxidant.

Action of calcitriol on bone: <sup>(4)</sup>

Calcitriol stimulates calcium uptake for deposition as calcium phosphate. Thus calcitriol is essential for bone formation.

Action of calcitriol on kidney: <sup>(4)</sup>

Calcitriol is involved in minimizing the excretion of calcium and phosphate through the kidney, by decreasing their excretion and enhancing reabsorption.

**Table 2:** Recommended dietary allowance of vitamin D per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	5
Men	9-50	5
Men	50yrs and above	10
Women	9-50	5
Women	50yrs and above	10
Pregnancy	14 – 50	5
Lactation	14 – 50	5

Deficiency of vitamin D leads to: <sup>(4)</sup>

- Rickets in children are characterized by bone deformities which result in bow-leg and osteomalacia, osteoporosis in adults.

- Occurs in strict vegetarians, chronic alcoholics and those with liver and kidney diseases.

**Vitamin E:** <sup>(4)</sup>

It is naturally occurring anti-oxidant and so called anti- sterility vitamin.

Sources: <sup>(4)</sup>

Oils, wheat, cotton seed oil, peanut oil, corn oil, sunflower oil, meat, milk, butter and eggs.

Functions: <sup>(4)</sup>

- Vitamin E is essential for maintaining cell membrane structure and integrity.
- It prevents the peroxidation of polyunsaturated fatty acids in various tissues and cell membranes.
- It is associated with reproductive functions and prevents sterility.
- Increases synthesis of heme by enhancing activity of enzymes.
- Required for cellular respiration.
- Prevents oxidation.

**Table 3:** Recommended dietary allowance of vitamin E per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	7
Men	9-13	11
Men	14-50yrs and above	15
Women	9-13	11
Women	14-50yrs and above	15
Pregnancy	14 – 50	15
Lactation	14 – 50	19

Deficiency of vitamin E leads to:

Sterility, degenerative changes in muscle, megaloblastic anemia and increased fragility of erythrocytes.

**Vitamin K:** <sup>(4)</sup>

Vitamin K helps in blood clotting.

Sources: <sup>(4)</sup>

Cabbage, cauliflower, tomatoes, spinach and other green vegetables, egg yolk, meat, liver, cheese and dairy products.

Functions: <sup>(4)</sup>

- Involved in blood clotting.
- Post translational modifications of certain blood clotting factors.

**Table 4:** Recommended dietary allowance of vitamin K per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	55
Men	9-13	60
Men	14-18	75
Men	19 – 50yrs and above	120
Women	9-13	60
Women	14-18	75
Women	19 – 50yrs and above	90

Pregnancy and Lactation	14 – 18	75
Pregnancy and Lactation	19 – 50	90

Deficiency of vitamin K leads to: <sup>(4)</sup>

- Deficiency of vitamin K leads to lack of active prothrombin, due to which blood coagulation is adversely effected.
- Vitamin K deficiency occurs due to faulty absorption.

**Ascorbic acid:** <sup>(4)</sup>

Vitamin C is water soluble.

Sources: <sup>(4)</sup>

Citrus fruits, gooseberry, guava, green leafy vegetables, tomatoes and milk.

Functions: <sup>(4)</sup>

Ascorbic acid aids in

- Collagen formation
- Iron and hemoglobin metabolism
- Tryptophan metabolism
- Folic acid metabolism
- Synthesis of corticosteroid hormones
- Synthesis of immunoglobulins
- 

**Table 5:** Recommended dietary allowance of vitamin C per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	25
Men	9-13	45
Men	14-18	75
Men	19 – 50yrs and above	90
Women	9-13	45
Women	14-18	65
Women	19 – 50yrs and above	75
Pregnancy	14 – 18	80
Pregnancy	19 -50	85
Lactation	14 – 18	115
Lactation	19 -50	120

Deficiency of vitamin C leads to: <sup>(4)</sup>

Loose teeth, anemia, sore gums, scurvy, swollen joints, fragile blood vessels and delayed wound healing.

**Thiamine** <sup>(4)</sup> (**Vitamin B<sub>1</sub>, Anti- beri-beri vitamin**):

Sources: <sup>(4)</sup>

Cereals, pulses, oilseeds, yeasts, pork, liver, heart, kidney and milk.

Functions: <sup>(4)</sup>

- The enzyme pyruvate dehydrogenase catalyses the irreversible conversion of

pyruvate to acetylCoA is dependent on TPP(Thiamine pyrophosphate).

- Enzyme transketolase is dependent on TPP.
- It plays an important role in transmission of nerve impulse.

**Table 6:** Recommended dietary allowance of vitamin B<sub>1</sub> per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	0.6
Men	9-13	0.9
Men	14-18	1.2
Men	19 – 50yrs and above	1.2
Women	9-13	0.9
Women	14-18	1
Women	19 – 50yrs and above	1.1
Pregnancy	14 – 50	1.4
Lactation	14 – 50	1.4

Deficiency of vitamin B<sub>1</sub> leads to:<sup>(4)</sup>

- Beri-beri, loss of appetite, weakness, constipation and nausea.
- Carbohydrate metabolism is impaired.
- Impairment of nerve impulse.
- Wet-beri-beri causes edema of legs, face, trunk and raise in systolic blood pressure.
- Dry- beri-beri causes neurological manifestations which results in peripheral neuritis.
- Infantile- beri-beri causes restlessness and vomiting.

**Riboflavin (Vitamin B<sub>2</sub>):**<sup>(4)</sup>

Riboflavin takes part in cellular oxidation and reduction reactions.

Sources:<sup>(4)</sup>

Milk, milk products, meat, eggs, liver, kidney, cereals, fruits, vegetables and fish.

Functions:<sup>(4)</sup>

They participate in redox reactions, the coenzymes of riboflavin are involved in carbohydrate, lipid, protein and purine metabolism.

**Table 7:** Recommended dietary allowance of vitamin B<sub>2</sub> per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	0.6
Men	9-13	0.9
Men	14-18	1.3
Men	19 – 50yrs and above	1.3

Women	9-13	0.9
Women	14-18	1
Women	19 – 50yrs and above	1.1
Pregnancy	14 – 50	1.4
Lactation	14 – 50	1.4

Deficiency of vitamin B<sub>2</sub> leads to:<sup>(4)</sup>

Cheilosis, Glossitis and Dermatitis.

**Niacin:**<sup>(4)</sup>

Niacin is known as pellagra preventive vitamin.

Sources:<sup>(4)</sup>

Yeast, liver, whole grains, pulses, cereals, beans, peanuts, milk, fish, eggs and vegetables.

Functions:<sup>(4)</sup>

These are involved in oxidation-reduction reactions.

**Table 8:** Recommended dietary allowance of niacin per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	8
Men	9-13	12
Men	14-50yrs and above	16
Women	9-13	12
Women	14-50yrs and above	14
Pregnancy	14 – 50	18
Lactation	14 – 50	17

Deficiency of niacin leads to:<sup>(4)</sup>

- Pellagra, it involves skin, gastrointestinal tract and central nervous system disorders.
- The symptoms of pellagra are commonly referred to as three D's it also progresses in that order Dermatitis, Diarrhoea and Dementia.

**Pyridoxine (Vitamin B<sub>6</sub>):**<sup>(4)</sup>

It is used to collectively represent three compounds like Pyridoxine, Pyridoxal and Pyridoxamine.

Sources:<sup>(4)</sup>

Egg yolk, fish, milk, corn, cabbage, roots and tubers.

Functions:<sup>(4)</sup>

Pyridoxal phosphate (PLP), the co-enzyme of vitamin B<sub>6</sub> plays an important role in

- Transamination
- Decarboxylation
- Synthesis of catecholamines
- Plays an important role in heme formation

**Table 9:** Recommended dietary allowance of pyridoxine per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	0.6
Men	9-13	1
Men	14-18	1.3
Men	19-50	1.3
Men	50 years and above	1.7
Women	9-13	1
Women	14-18	1.2
Women	19-50	1.3
Women	50 years and above	1.5
Pregnancy	19 – 50yrs and above	1.9
Lactation	19 – 50yrs and above	2.0

Deficiency of pyridoxine leads to:<sup>(4)</sup>  
Neurological symptoms like depression, irritability, nervousness, mental confusion, convulsions and peripheral neuropathy.

**Biotin:**<sup>(11)</sup>

Biotin (anti-egg white injury factor)

Sources:<sup>(4)</sup>

Animal and plant foods, the rich sources are liver, kidney, egg yolk, milk, tomatoes and grains.

Functions:<sup>(4)</sup>

- It plays an important role in gluconeogenesis(which takes place in liver and involves the conversion of non-carbohydrates to glucose).
- citric acid cycle(which takes part in mitochondrial matrix which involves oxidation of carbohydrates, fats and amino acids).
- It has a prominent role in Fatty acid synthesis.

**Table 10:** Recommended dietary allowance of biotin per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	12
Men	9-13	20
Men	14-18	25
Men	19-50	30
Men	50 years and above	30
Women	9-13	20
Women	14-18	25
Women	19-50	30
Women	50 years and above	30
Pregnancy	19 – 50yrs and above	30
Pregnancy	19 – 50yrs and above	35

Deficiency of biotin leads to:<sup>(4)</sup>

Anemia, loss of appetite, nausea, dermatitis and glossitis.

**Pantothenic Acid:**<sup>(4)</sup>

It is chik-anti-dermatitis factor.

Sources:<sup>(4)</sup>

Egg, liver, meat, yeast and milk.

Functions:<sup>(4)</sup>

It is a coenzyme of metabolic integration, it is a component of fatty acid synthase complex.

**Table 11:** Recommended dietary allowance of Pantothenic acid per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in mg)
Children	4-8	3
Men	9-13	4
Men	14-50 and above	5
Women	9-13	4
Women	14-50 and above	5
Pregnancy	14 – 50	6
Lactation	14 – 50	7

Deficiency of Pantothenic acid leads to:<sup>(4)</sup>

Burning feet syndrome, anemia, fatty liver and decreased fatty acid synthesis.

**Folic acid:**<sup>(4)</sup>

Sources:<sup>(4)</sup>

Green leafy vegetables, whole grains, cereals, liver, kidney, yeast and eggs.

Functions:<sup>(4)</sup>

The following compounds are synthesized with the help of folic acid

- 1) Purines
- 2) Pyrimidines
- 3) Glycine, serine and choline

**Table 12:** Recommended dietary allowance of folic acid per day.<sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	200
Men	9-13	300
Men	14-18	400
Men	19-50 and above	400
Women	9-13	300
Women	14-18	400
Women	19-50 and above	400
Pregnancy	14 – 18	600
Pregnancy	19 – 50	600
Lactation	14 – 18	500
Lactation	19 – 50	500



Deficiency of folic acid leads to: <sup>(4)</sup>

- Due to inadequate dietary intake, defective absorption, use of anticonvulsant drugs.
- Decreased production of purines is observed which impairs DNA synthesis.
- Decreased maturation of erythrocytes leading to macrocytic anemia.
- Deficiency in pregnant women may cause neural defects.

**Cyanocobalamin (Vitamin B<sub>12</sub>):** <sup>(4)</sup>

Vitamin B<sub>12</sub> is also known anti-pernicious anemia vitamin.

Sources: <sup>(4)</sup>

Liver, kidney, milk, curd, eggs, fish, pork and chicken and Curd, it is better source than milk.

Functions: <sup>(4)</sup>

It helps in the synthesis of Homocysteine → Methionine.

It involves the isomerization of methylmalonyl CoA → Succinyl CoA.

Deficiency of vitamin B<sub>12</sub> leads to: <sup>(4)</sup>

- Pernicious anemia, decreased number of erythrocytes and neurological manifestations.
- Deficiency associated with neuronal degeneration and demyelination of nervous system.

**Balanced diet for infants, men, women and geriatrics:**

- Balanced diet is different for children, men, women and geriatrics, this is because of altered physiology in all these groups. Infants system is less developed when compared with adults and geriatrics.
- Women and men also have difference due to difference in physiology.
- Geriatrics also have an altered physiology due to age effect.

**Balanced diet for Children** <sup>(2)</sup>

Children in this age socialize and try to adapt as per his environment and develops new flavors as the mental development is continuously increasing, in this age lots of varieties of foods can be included to gain energy and to have sound health.

The following dietary chart and menu plan can be adopted in order to maintain a proper balanced diet for children .

**Table 13:** Recommended dietary allowance of vitamin B<sub>12</sub> per day. <sup>(9)</sup>

Gender	Age range (years)	Diet allowance per day (in µg)
Children	4-8	1.2
Men	9-13	1.8
Men	14-18	2.4
Men	19-50 and above	2.4
Women	9-13	1.8
Women	14-18	2.4
Women	19-50 and above	2.4
Pregnancy	14 – 50	2.6
Lactation	14 – 50	2.8

**Table 14:** Dietary chart for children.

	Pre-school children				School Children			
	1-3 yrs		4-6 yrs		7-9 yrs		10-12 yrs	
	Veg (g)	Non-veg (g)	Veg (g)	Non-veg (g)	Veg (g)	Non-veg (g)	Veg (g)	Non-veg (g)
Cereals	150	150	200	200	250	250	320	320
Pulses	50	40	60	50	70	60	70	60
Green leafy veg.	50	50	75	75	75	75	100	100
Other vegetables Roots and tubers	30	30	50	50	50	50	75	75
Fruits	50	50	50	50	50	50	50	50
Milk	300	200	250	200	250	200	250	200
Fats & oils	20	20	25	25	30	30	35	35
Meat & fish	-	30	-	30	-	30	-	30
Egg	-	30	-	30	-	30	-	30
Sugar & jaggery	30	30	40	40	50	50	50	50

**Table 15:** Sample menu plan for children

Breakfast	Milk Bread with butter Egg boiled and fried	1 Glass 1 Slice 1
Lunch	Chapati Rice Dall Potato curry Curd	½ or Phulka 1 ½ cup ½ cup 1 cup ½ cup
Mid afternoon	Banana or orange Milk Two tea spoon roasted nuts	1 small 1 Glass
Dinner	Tomato/palak soup Chapati Rice Pumpkin vegetables Dal Curds	½ Bowl ½ or Phulka 1 ½ cup ½ cup ½ cup ½ cup

**Balanced diet for Adolescents<sup>(2)</sup>**

- This phase of life includes lots of alterations not only in physique but also in sexual characters that develop in puberty.
- At this time the body requires extra calories and proteins, there is increased demand for iodine, boys grow a little bit slower than girls depending upon the basal metabolic rates.

- This age is vulnerable especially for adolescent girls they are conscious of figure and try to cut off most of the nutritive diet which lead to malnutrition.
- The following dietary chart and menu plan can be adopted in order to maintain a proper balanced diet for Adolescents.

**Table 16:** Dietary chart for Adolescents.

	Boys				Girls	
	13 yrs		16 – 18 yrs		13 – 18 yrs	
	Veg(g)	Non-veg(g)	Veg (g)	Non-veg (g)	Veg(g)	Non-veg (g)
Cereals	430	430	450	450	350	350
Pulses	70	50	70	50	70	50
Green leafy veg.	100	100	100	100	150	150
Other vegetables Roots and tubers	75	75	75	75	75	75
Fruits	30	30	30	30	30	30
Milk	250	150	250	150	250	100
Fats & oils	35	40	45	50	35	40
Meat & fish	-	30	-	30	-	30
Egg	-	30	-	30	-	30
Sugar & jaggery	30	30	40	40	30	30
Ground nuts	-	-	50	50	-	-

**Table 17:** Sample menu plan for Adolescents.

Breakfast	Milk Bread with butter Egg boiled and fried	1 Glass 3 Slices 1
Lunch	Chapati Rice Dall Potato curry Curd	½ or Phulka 1 ½ cup ½ cup 1 cup ½ cup
Mid afternoon	Banana or orange Milk roasted nuts	1 small 1Glass 2 tea spoons
Dinner	Tomato/palak soup Chapati Rice Pumpkin vegetables Dal Curds	½ Bowl ½ or Phulka 1 ½cup ½ cup ½cup ½cup

**Adult Woman (2):**

Women require a separate plan compared to men because of different physiological functions in women because of menopause and menstrual cycle.

The following dietary chart and menu plan can be adopted in order to maintain a proper balanced diet for Adult woman.

**Table 18:** Dietary chart for Adult Woman.

	Sedentary work		Moderate work		Heavy work		Additional Allowance	
	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)	Pregnancy	Lactation
Cereals	300	300	350	350	475	475	50	100
Pulses	60	45	70	55	70	55	-	10
Green leafy vegetables	125	125	125	125	125	125	25	25
Other leafy vegetables	75	75	75	75	100	100	-	-
Roots and tubers	50	50	75	75	100	100	-	-
Fruits	30	30	30	30	30	30	-	-
Milk	200	100	200	100	200	100	-	15
Fats and oils	30	35	35	40	40	45	-	-
Sugars and jaggery	30	30	30	30	40	40	10	20
Meat and Fish	-	30	-	30	-	30	-	-
Eggs	-	30	-	30	-	30	-	-
Ground nuts	-	-	-	-	40	30	-	-

**Table 19:** Sample menu plan for Adult Woman

Food group	Foods & servings	Amount(g)	Energy (kcal)	Protein (g)	Vit A Value (mcg)	Iron mg
1.	Rice (4)	100	340	7		3.0
	Chapati (5)	125	425	15		14.4
	Bread (2)	40	98	3		0.2
2.	Dal (2)	56	170	11		2.9
	Milk (1)	150	100	5	240	0.3
	Egg (1)	50	86	7	300	1.0
3.	a) Amaranth(1)	50	22	2	2760	13.0
	b) Guava (1)	50	24	-		
4.	Brinjal (1)	50	15	1	65	0.4
	French Beans (1)	50	12	1		
	Potato (1)	75	73	1		
5.	Jaggery, Sugar	15, 25	57, 100	-	-	1.7
	Oil	20	180	-	-	-
	Vanaspati	15	135	-	112	-
	Ghee / Butter	10	90	-	73	-
	Total Intake			1927	53	3500



**Adult Man <sup>(2)</sup>:**

Men require a diet with high calories because of their higher muscularity.

The following dietary chart and menu plan can be adopted in order to maintain a proper balanced diet for Adult man.

**Table 20: Dietary chart for Adult Man.**

	Sedentary work		Moderate work		Heavy work	
	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)
Cereals	400	400	475	475	650	650
Pulses	70	55	80	65	80	80
Green leafy vegetables	100	100	125	125	125	125
Other leafy vegetables	75	75	75	75	100	100
Fruits	30	30	30	30	30	30
Milk	200	100	200	100	200	100
Fats and oils	35	40	40	40	50	50
Meat and Fish	-	30	-	30	-	30
Eggs	-	30	-	30	-	30
Sugars and jaggery	30	30	40	40	55	55
Ground nuts	-	-	-	-	50	80

**Table 21: Sample menu plan for Adult Man**

Food groups	Food and servings	Amount(g)	Energy(kcal)	Protein(g)	Vit A(mcg)	Iron(mg)
1.	Chapati(6)	100	340	7	-	3.0
	Rice(4)	150	510	18	-	17.2
	Bread(2)	4 slices	196	6	-	0.4
2.	Dal(2)	50	170	11	-	2.9
	Milk(2)	300	200	10	480	0.6
	Eggs(2)	100	170	13	600	2.1
3.	Palak(1)	50	13	1	2,709	55
	Orange(1)	50	24	-	0-550	0.1
4.	Brinjal(1)	50	12	1	-	0.4
	Cauliflower(1)	50	15	1	-	0.7
	Potato(1)	75	75	-	-	0.5
5.	Jaggery	20g	76	-	-	-
	Sugar	20g	205	-	-	-
	Oil	20g	225	-	-	-
	Vanaspati	20g	180	-	150	-

**Geriatrics (60 yrs and above)<sup>(2)</sup>:**

- Many elderly people remain physically active consequently require a varied diet in amounts which differ slightly from the needs of other population.
- A diet of old person should be such that it should help them to maintain good health.
- The food intake may be limited due to absence of certain foods because of some illness such as diabetes, hypertension.
- Digestion may be impaired due to improper chewing.

- The lower metabolic rates in the elderly reduce caloric requirement in them and this result in deficiency of proteins which can be supplemented by supplying eggs, milk, meat. Feeding should be in smaller amounts but must be frequently served for good metabolism.

The following dietary chart and menu plan can be adopted in order to maintain a proper balanced diet for geriatrics.

**Table 22:** Dietary chart for Geriatrics

	Sedentary work		Moderate work		Heavy work	
	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)	Veg(g)	Non veg(g)
Cereals	250-350	250-350	300-400	300-400	400-575	400-575
Pulses	50-60	40-50	60-70	50-60	60-70	50-70
Green leafy vegetables(Men)	100-110	100-110	100-110	100-110	100-110	100-110
Green leafy vegetables(Woman)	80-90	80-90	100-110	100-110	100-110	100-110
Other leafy vegetables	60-70	60-70	60-70	60-70	80-90	80-90
Fruits	20-30	20-30	20-30	20-30	20-30	20-30
Milk	200	100	200	100	200	100
Fats and oils	15-25	20-30	25-35	25-35	30-40	30-40
Meat and Fish	-	20-25	-	20-25	-	20-25
Eggs	-	15-25	-	15-25	-	15-25
Ground nuts					30-40	30-40
Sugars and Jaggery	20-25	20-25	25-35	25-35	35-40	35-40

**Table 23:** Sample menu plan for Geriatrics

Breakfast	Tea	1cup
	Bread	3slices with butter
	Egg	1
	Banana	1
Lunch	Chapati	1
	Rice	½cup
	Dal	1cup
	Alupalak	1 cup
	Curds	½cup
	Orange or sweetlime	1
Snacks	Tea	1cup
	Biscuits	2-3
Dinner	Chapati	1
	Rice	1cup
	Dal	1cup
	Curd	½cup
Bedtime	Banana or apple	1
	Milk	1Glass

**DISADVANTAGES OF SOME FOODS:**

**ALCOHOL:**

**Addiction:**

When addicted, one’s life begins to revolve around and he cannot stop using them, he never stop it despite of several negative consequences.<sup>(6)</sup>

**Withdrawl:**

Symptoms of alcohol withdrawl include shakiness, nausea, hallucinations.<sup>(6)</sup>

**Health problems:<sup>(7)</sup>**

- Excessive alcohol consumption increases risk of heart complications, rise in blood pressure, and lead to blockage in arteries of brain.
- In excess amounts it may result in pancreas, mouth, pharynx, oesophagus and liver cancers.

- Atrophy of brain, cirrhosis, suicidal tendencies, sudden death in case of cardiovascular problems.

**Socio-economic problems:**

- Alcohol consumption causes several socio-economic problems like experiencing injuries at a higher rate when compared to non users the incidence of road accidents suicides and violence are higher in alcoholics.
- Many alcohol users had missed going to work, frequently borrowed money and faced a lack of respect from employees and colleagues.

**Alcohol consumption is contraindicated during administration of:<sup>(7)</sup>**

Anti-coagulants, β-blockers, Antihistaminics and Antibiotics. The alcohol drinking guidelines set by National health and medical research council are :<sup>(8)</sup>

1. Not more than 4 standard drinks a day.

2. Not more than 6 standard drinks on any one day.

A standard drink is: <sup>(8)</sup>

1. 1 can or stibble of medium beer (3-10%).
2. A 100ml glass of wine (8-14%).
3. 1nip of spirits (20-70%).

- Caffeine is present in tea, coffee, chocolates, cocoa etc
- In moderate doses caffeine causes increased mental arousal and alertness.
- In high doses caffeine raises heart rate and promotes release of fatty acids. It causes anxiety, dizziness and headache and causes withdrawal symptoms.

**CAFFEINATED DRINKS: <sup>(8)</sup>**

**Table 24:** Effects of caffeine as intake increases <sup>(8)</sup>

Moderate 600mg (2 cups)	Large amounts more than 600mg(2 cups)	Long term effects more than 600mg(2 cups)
Become more alert	Get headache	Find sleeping difficulty
Heart rate increases	Feel restlessness	Worry more
Urinals with more frequency	Feel nervous	Depression
Body temp raises	Become delirious	Have stomach upsets
More acid produced in digestive system	Find difficulty to sleep	May become addicted

**Table 25:** Caffeine contents of various drinks <sup>(8)</sup>

Food	Amounts of caffeine
Instant coffee	60-100mg
Fresh coffee	80-350mg
Tea	80-90mg
Coca drinks	35mg per 250ml
Other caffeinated soft drinks	106mg per ml
cocoa	10-70mg per
Chocolate bars	20-60 mg per 20g bar

**CONCLUSION:**

Balanced diet is very important for every person in their day to day life. It is of immense response to maintain proper health. It is particularly important for children and geriatrics because children need a good balanced healthy diet for proper growth as it is the stage of physical and mental development. Geriatrics also needs a well balanced diet because maintaining good diet helps to retain good health. Balanced diet is vital for all people in order to have proper mental and physical development. It is important for women to have good strength during menstrual and menopause phases So, while maintaining a well balanced diet we have to consider about some foods which should be taken in a controlled manner like alcohol and caffeine, irrational consumption of these foods causes several serious health disorders. So by this, I conclude that a well balanced diet with a well managed physical exercise helps in maintaining good sound health and helps in living a long life without health problems.

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