

Balanced Diet

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Balanced Diet

- ▶ One which contains a **variety** of foods in such **quantities and proportions** that the need of **energy, amino acids, vitamins, minerals, fats, carbohydrate and other nutrients** is adequately met for **maintaining health, vitality and general wellbeing** and also makes a small provision for **extra nutrients** to withstand short duration of leanness.

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- ▶ **Balanced diet is a blend of items from the four basic food groups**
 1. Cereals, millets and pulses
 2. Vegetables and fruits
 3. Milk and milk products, egg, meat and fish
 4. Oils & fats and nuts & oilseeds
 - ▶ **The quantities of food needed vary with**
 - ▶ Age
 - ▶ Gender
 - ▶ Physiological status (Pregnancy, Lactation)
 - ▶ Physical activity (Sedentary, Moderate, Vigorous)

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- ▶ **A balanced diet should provide around**
 - ▶ 50-60% of total calories from carbohydrates, preferably from complex carbo-hydrates
 - ▶ about 10-15% from proteins and
 - ▶ 20-30% from both visible and invisible fat

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- ▶ In addition, a balanced diet should provide other non-nutrients such as **dietary fibre, antioxidants and phytochemicals** which bestow positive health benefits.
 - ▶ **Antioxidants** such as vitamins C and E, beta-carotene, riboflavin and selenium protect the human body from free radical damage.
 - ▶ Other **phytochemicals** such as polyphenols, flavones, etc., also afford protection against oxidant damage.
 - ▶ Spices like turmeric, ginger, garlic, cumin and cloves are rich in antioxidants.

What are recommended dietary allowances (RDA)?

- ▶ RDAs are estimates of nutrients to be consumed daily to ensure the requirements of all individuals in a given population.
- ▶ RDA includes a margin of safety, to cover variation between individuals, dietary traditions and practices.
- ▶ Needs caution when applied for an individual person

What are recommended dietary allowances (RDA)?

- ▶ **RDAs values are for**
 - ▶ physiological groups such as infants, pre-schoolers, children, adolescents, pregnant women, lactating mothers, and adult men and women
 - ▶ according to their physical activity
- ▶ **The values are not watertight**
 - ▶ fluctuations in intake are allowed
 - ▶ average requirements need to be satisfied over a period of time

**RECOMMENDED DIETARY ALLOWANCES FOR INDIANS
(Macronutrients and Minerals)**

Group	Particulars	Body wt. kg	Net Energy Kcal/d	Protein g/d	Visible Fat g/day	Calcium mg/d	Iron mg/d
Man	Sedentary work	60	2320	60	25	600	17
	Moderate work		2730		30		
	Heavy work		3490		40		
Woman	Sedentary work	55	1900	55	20	600	21
	Moderate work		2230		25		
	Heavy work		2850		30		
	Pregnant woman		+350	82.2	30	1200	3 5
	Lactation 0-6 months		+600	77.9	30	1200	25
	6-12 months		+520	70.2	30		
Infants	0-6 months	5.4	92 Kcal/kg/d	1.16 g/kg/d	–	500	--
	6-12 months	8.4	80 Kcal/kg/d	1.69 g/kg/d	19		46 µg/kg/day
Children	1-3 years	12.9	1060	16.7	27	600	09
	4-6 years	18	1350	20.1	25		13
	7-9 years	25.1	1690	29.5	30		16
Boys	10-12 years	34.3	2190	39.9	35	800	21
Girls	10-12 years	35.0	2010	40.4	35	800	27
Boys	13-15 years	47.6	2750	54.3	45	800	32
Girls	13-15 years	46.6	2330	51.9	40	800	27
Boys	16-17 years	55.4	3020	61.5	50	800	28
Girls	16-17 years	52.1	2440	55.5	35	800	26

**RECOMMENDED DIETARY ALLOWANCES FOR INDIANS
(Vitamins)**

Group	Particulars	Vit. A µg/d		Thiamin mg/d	Riboflavin mg/d	Niacin equivalent mg/d	Pyridoxin mg/d	Ascorbic acid mg/d	Dietary folate µg/d	Vit. B ₁₂ µg/d	Magnesium mg/d	Zinc mg/d
		Retinol	β-carotene									
Man	Sedentary work	600	4800	1.2	1.4	16	2.0	40	200	1	340	12
	Moderate work			1.4	1.6	18						
	Heavy work			1.7	2.1	21						
Woman	Sedentary work	600	4800	1	1.1	12	2.0	40	200	1	310	10
	Moderate work			1.1	1.3	14						
	Heavy work			1.4	1.7	16						
	Pregnant woman	800	6400	+0.2	+0.3	+2	2.5	60	500	1.2	310	12
	Lactation 0-6 months	950	7600	+0.3	+0.4	+4	2.5	80	300	1.5		
	6-12 months			+0.2	+0.3	+3	2.5					
Infants	0-6 months	-	-	0.2	0.3	710µg/kg	0.1	25	25	0.2	30	-
	6-12 months	350	2800	0.3	0.4	650µg/kg	0.4				45	-
Children	1-3 years	400	3200	0.5	0.6	8	0.9	40	80	0.2-1.0	50	5
	4-6 years			0.7	0.8	11	0.9		100		70	7
	7-9 years			600	4800	0.8	1.0		13		1.6	120
Boys	10-12 years	600	4800	1.1	1.3	15	1.6	40	140	0.2-1.0	120	9
Girls	10-12 years			1.0	1.2	13	1.6				160	9
Boys	13-15 years			1.4	1.6	16	2.0	40	150		165	11
Girls	13-15 years			1.2	1.4	14	2.0				210	11
Boys	16-17 years			1.5	1.8	17	2.0	40	200		195	12
Girls	16-17 years			1.0	1.2	14	2.0				235	12

**Balanced Diet for Adults - Sedentary/ Moderate/ Heavy Activity
(Number of portions)**

	g/portion	Type of work					
		Sedentary		Moderate		Heavy	
		Man	Woman	Man	Woman	Man	Woman
Cereals & millets	30	12.5	9	15	11	20	16
Pulses	30	2.5	2	3	2.5	4	3
Milk & milk products	100 ml	3	3	3	3	3	3
Roots & tubers	100	2	2	2	2	2	2
Green leafy vegetables	100	1	1	1	1	1	1
Other vegetables	100	2	2	2	2	2	2
Fruits	100	1	1	1	1	1	1
Sugar	5	4	4	6	6	11	9
Fat	5	5	4	6	5	8	6

**Balanced Diet for Infants, Children and Adolescents
(Number of Portions)**

Food groups	g/ portion	Infants 6-12 months	Years								
			1 - 3	4 - 6	7 - 9	10 - 12		13 - 15		16 - 18	
						Girls	Boys	Girls	Boys	Girls	Boys
Cereals & millets	30	0.5	2	4	6	8	10	11	14	11	15
Pulses	30	0.25	1	1.0	2	2	2	2	2.5	2.5	3
Milk (ml) & milk products	100	4a	5	5	5	5	5	5	5	5	5
Roots & tubers	100	0.5	0.5	1	1	1	1	1	1.5	2	2
Green leafy vegetables	100	0.25	0.5	0.5	1	1	1	1	1	1	1
Other vegetables	100	0.25	0.5	1	1	2	2	2	2	2	2
Fruits	100	1	1	1	1	1	1	1	1	1	1
Sugar	5	2	3	4	4	6	6	5	4	5	6
Fat/ oil (visible)	5	4	5	5	6	7	7	8	9	7	10

BALANCED DIET FOR ADULT MAN (SEDENTARY)

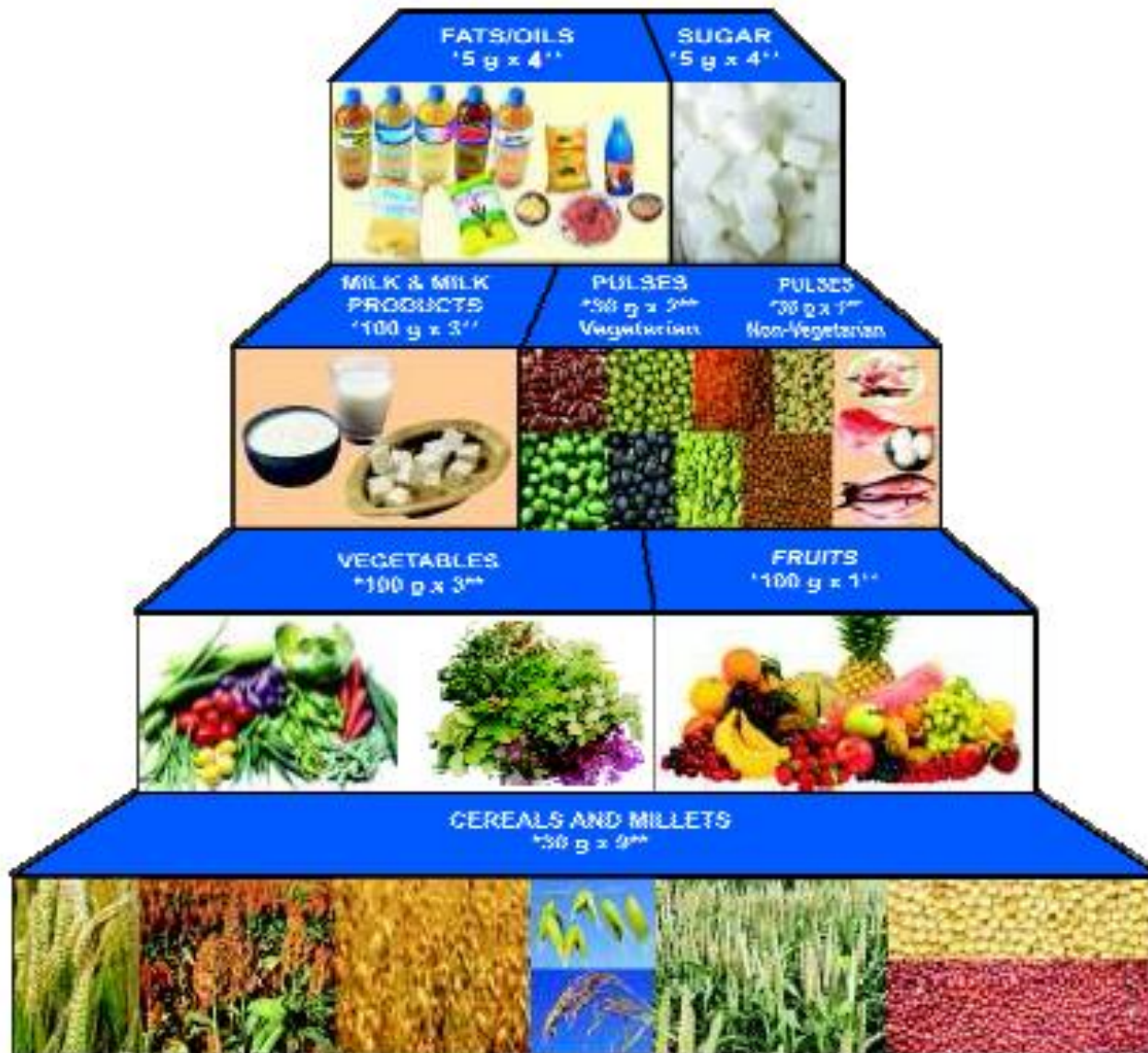


* Portion Size.

** No. of Portions

Elderly man: Reduce 3 portions of cereals and millets and add an extra serving of fruit

BALANCED DIET FOR ADULT WOMAN (SEDENTARY)



SAMPLE MEAL PLAN FOR ADULT MAN (SEDENTARY)

Meal Time	Food Group	Raw	Cooked Recipe	Servings Amounts
Breakfast	Milk	100 ml	Milk or Tea or Coffee Breakfast Item	1/2 Cup
	Sugar	15 g		2 Cups 1 Cup
Lunch	Cereals	120 g	Rice	2 Cups
	Pulses	20 g	Pulkas	2 Nos.
	Vegetables	150 g	Dhal	1/2 Cup
	Vegetables	50 g	Veg. curry	3/4 Cup
	Milk	100 ml	Veg. salad	7-8 Slices
Tea	Cereals	50 g	Snack	
	Milk	50 ml	Tea	1 Cup
	Sugar	10 g		
Dinner	Cereals	120 g	Rice	2 Cups
	Pulses	20 g	Pulkas	2 Nos.
	Vegetables	150 g	Dhal	1/2 Cup
	Milk (Curd)	50 ml	Veg. curry	3/4 Cup
	Vegetables	50 g		
	Fruit	100 g	Seasonal	1 Medium

1 Cup = 200 ml

SAMPLE MEAL PLAN FOR ADULT WOMAN (SEDENTARY)

Meal Time	Food Group	Raw Amounts	Cooked Recipe	Servings
Breakfast	Milk	100 ml	Milk or	1/2 Cup
	Sugar	10 g	Tea or	2 Cups
			Coffee	1 Cup
	Cereals Pulses	50 g 20 g	Breakfast Item	
Lunch	Cereals	100 g	Rice	1 Cup
			Pulkas	2 Nos.
	Pulses	20 g	Dhal	1/2 Cup
	Vegetables	100 g	Veg. curry	1/2 Cup
	Vegetables	50 g	Veg. salad	7-8 Slices
	Milk	100 ml	Curd	1/2 Cup
Tea	Cereals	50 g	Snack	
	Milk	50 ml	Tea	1 Cup
	Sugar	10 g		
Dinner	Cereals	100 g	Rice	1 Cup
			Phulkas	2 Nos.
	Pulses	20 g	Dhal	1/2 Cup
	Vegetables	100 g	Veg. curry	1/2 Cup
	Milk (Curd)	50 ml		
	Vegetables	50 g		
	Fruit	100 g	Seasonal	1 Medium

----- 1 Cup = 200 ml -----

Dietary Goals

- ▶ Dietary fat should be limited to 20-30% of total daily intake
- ▶ Saturated fats- not >10%
- ▶ Unsaturated vegetable oils –remaining requirement
- ▶ Avoid excessive refined carbohydrates but rich in natural fiber
- ▶ Proteins-10-15% of daily intake
- ▶ Salt intake –up to 5 gm /day/person
- ▶ Junk foods-empty calories should be reduced

Food Pyramid



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Dietary Guidelines

1. Eat variety of foods to ensure a balanced diet
2. Ensure provision of extra food and healthcare to pregnant and lactating women.
3. Promote exclusive breastfeeding for six months and encourage breastfeeding till two years.
4. Feed home based semi solid foods to the infant after six months.
5. Ensure adequate and appropriate diets for children and adolescents both in health and sickness.

Dietary Guidelines

6. Eat plenty of vegetables and fruits.
7. Ensure moderate use of edible oils and animal foods and very less use of ghee/ butter/ vanaspati.
8. Overeating should be avoided to prevent overweight and obesity.
9. Use salt in moderation/ Restrict salt intake to minimum.
10. Ensure the use of safe and clean foods.

Dietary Guidelines

11. Practice right cooking methods and healthy eating habits.
12. Drink plenty of water and take beverages in moderation.
13. Minimize the use of processed foods rich in salt, sugar and fats (junk food).
14. Include micronutrient rich foods in the diets of elderly people to enable them to be fit and active.
15. Exercise regularly and be physically active to maintain ideal body

Further Reading

- ▶ Dietary Guidelines for Indians published by National Institute for Nutrition, Hyderabad
- ▶ Textbook of Public Health & Community Medicine, RajVir Bhalwar (Edi), Published by Department of Community Medicine, Armed Forces Medical College, Pune