



SNS COLLEGE OF TECHNOLOGY

**An Autonomous Institution
Coimbatore - 35**

Accredited by NBA – AICTE and Accredited by NACC – UGC with 'A+ Grade
Approved by AICTE, New Delhi and Affiliated to Anna University, Chennai.

DEPARTMENT OF FOOD TECHNOLOGY

19FTO302-FOOD NUTRITION

III – YEAR VI SEMESTER


UNIT-II RAD AND MEAL PLAN USING RDA



INTRODUCTION

What is RDA?





WHAT ARE RDAS AND DRIS?

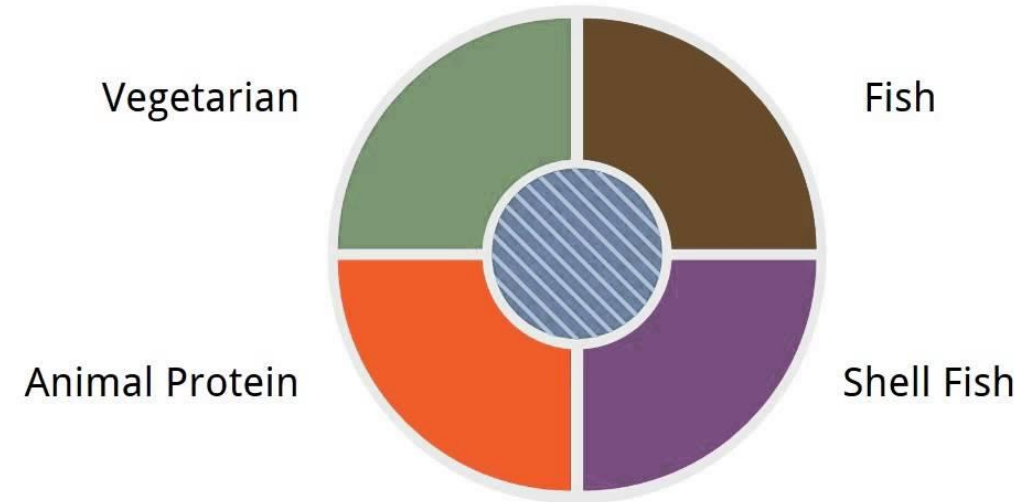
RDAs is the levels of intake of essential nutrients that are judged to be adequate to meet the known needs of practically all healthy persons.

DRIs is a general term for a set of reference values used to plan and assess nutrient intakes of healthy people.

Level of intake to meet out the daily requirement which are decided by Food and Nutrition Board



Recommended Daily Allowance Scenarios



The first edition of the *Recommended Dietary Allowances* (RDAs) was published in 1943 during World War II with the objective of **“providing standards to serve as a goal for good nutrition.”** It defined, in **“accordance with newer information, the recommended daily allowances for the various dietary essentials for people of different ages”** (NRC, 1943).



RDA



- ⊘ Amount of the nutrient sufficient for the maintenance of health in nearly all people.
- ⊘ For all nutrients, except energy,
- ⊘ $RDA = \text{minimum requirement} + \text{safety margin}$
- ⊘ RDA doesn't apply to sick people.





HISTROY OF RDA



- ❖ In 1944 by the Nutrition Advisory Committee of Indian Research Fund Association (IRFA)
- ❖ now ICMR (Indian Council of Medical Research)
- ❖ ICMR Nutrition Advisory Committee revised RDA for Indians on calories and proteins in 1960
- ❖ Such a revision and updating of the nutrient requirement on RDA of Indians was done by Expert Groups of the ICMR in 1978 and 1988



Purpose of RDA:



- ❖ National Family Health Survey and UNICEF Reports , 46% of preschool children and 30% of adults in India suffer from moderate and severe grades of protein-calorie malnutrition.
- ❖ Over 50% women (particularly pregnant women) and children suffer from iron deficiency anemia (IDA),
- ❖ Diseases such as obesity, diabetes, hypertension, cardiovascular diseases and cancers
- ❖ Iodine Deficiency Disease (IDD) has been considerably reduced after the introduction of universal iodized salt.



Factors that effects RDA



- ⊗ RDA of an individual depends on many factors like:
- ⊗ Age
- ⊗ Sex
- ⊗ Physical work- sedentary, Moderate Hard (heavy)
- ⊗ Physiological stress- Pregnancy lactation



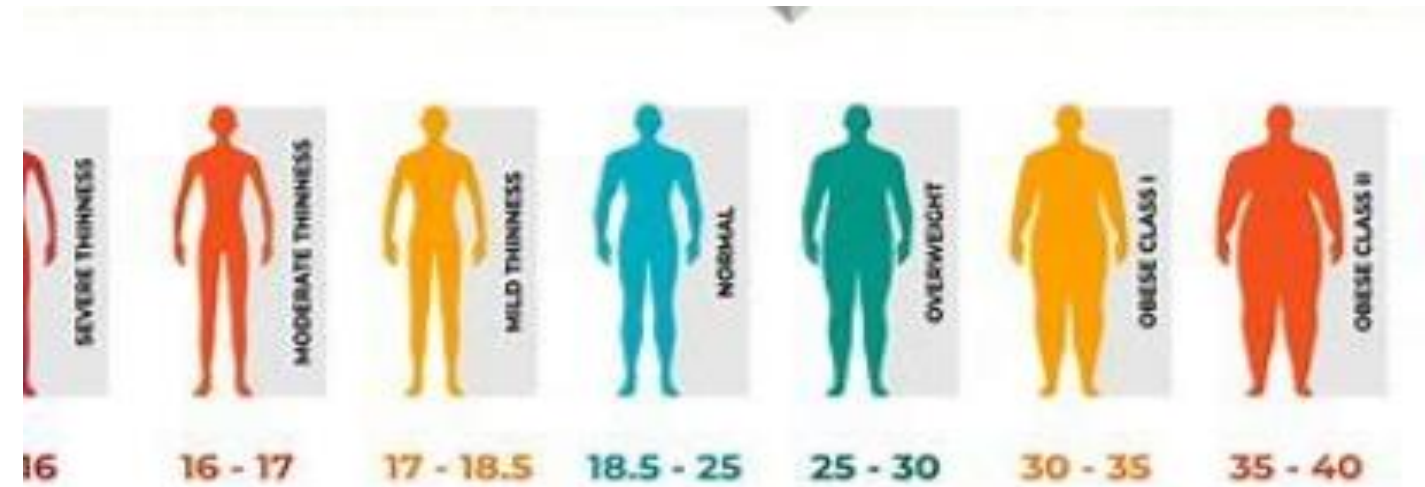
RDA FOR INDIANS



- ICMR has defined well nourished Indian adults who had satisfactory growth during childhood.
- Scientists have prescribed RDA for adults, depending on the level of activity of individual.
- Sedentary workers: those who sit & work using brain & hands. Eg: teachers, clerks, typists, officers.
- Moderate workers: those who work vigorously for a few hours using many parts of the body like hands, feet & muscles. Eg: postman, servant, housewife doing all household work.
- Heavy workers: use different parts of body for several hours. Eg: rickshaw pullers, coolies, workers in mines, sports person, masons etc



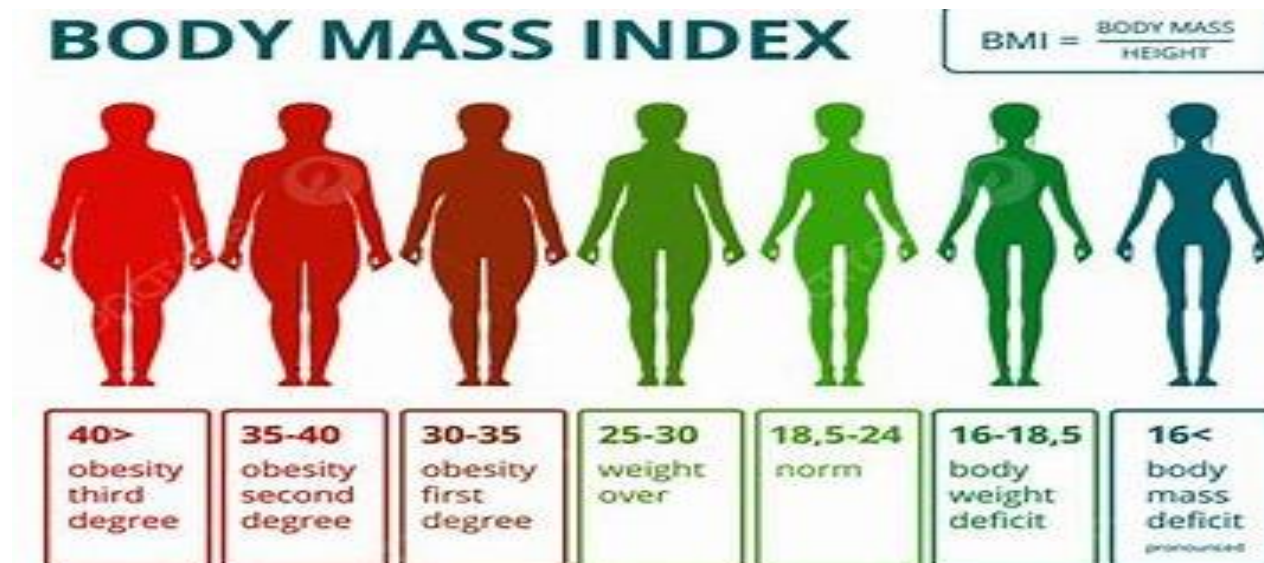
Reference man



- between 20-39 yrs of age,
- Weighs 60kg,
- Free from disease & physically fit for active work,
- Employed for 8hrs,
- 4-6 hrs sitting & moving about,
- 2hrs in walking or household duties,
- 8hrs in bed



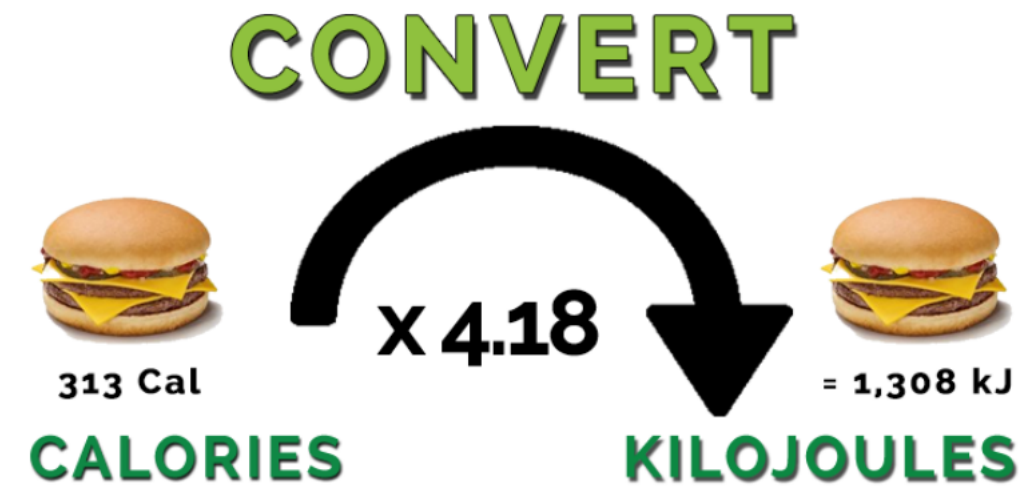
Reference woman



- Between 20-39 yrs of age,
- Healthy & weighs 50kg,
- May be engaged 8hrs in general household work or in light industry or in any other moderately active work,
- 8hrs in bed,
- Spends 4-6hrs sitting or moving around in light activity,
- 2hrs walking or active recreation or household .



ENERGY REQUIREMENTS



The unit of energy, which has been in use in nutrition for a long time, is kilocalories (kcal).

Physical activity ratio(PAR)= Energy cost of an activity per minute/energy cost of basal metabolism per minute.



ENERGY REQUIREMENTS



Group	Age	Body weight (kg)	Net energy(kcal/d)	Protein (g/d)	Visible fat (g/d)	Calcium (mg/d)	Iron (mg/d)	Zinc (mg/d)
Men	Sedentary work	60	2320	60	25	600	17	12
	Moderate work		2730		30		21	10
	Heavy work		3490		40			
Women	Sedentary work	55	1900	55	20	600	21	10
	Moderate work		2230		25			
	Heavy work		2850		30			
	Pregnant		+350	78	30	1200	35	12
	lactating		+600	74	30	1200	21	

Group	Age	Body Weight	Net Energy (kcal/D)	Protein (g/D)	Visible Fat (G/D)	Calcium (Mg/D)	Iron (Mg/D)	Zinc (Mg/D)
Infants	0-6 months	5.4	92kcal/kg/d	1.16g/kg/d	-	500	46ug/kg/d	-
	6-12 months	8.4	80kcal/kg/d	1.69g/kg/d	19		05	-
	Children	1-3 yrs	12.9	1060	16.7		17	600
4-6 yrs		18.0	1350	20.1	25	13	7	
7-9yrs		25.1	1690	29.5	30	16	8	
Boys	10-12 yrs	34.3	2190	39.9	35	800	21	9
	13-15 yrs	47.6	2750	54.3	45		800	32

Group	Age	Body Weight	Net Energy (Kcal/D)	Protein (g/D)	Visible Fat(g/D)	Calcium(mg/D)	Iron(mg/D)	Zinc(mg/D)
Girls	10-12 yrs	35.0	2010	40.4	35	800	27	9
	13-15 yrs	46.6	2330	51.9	40	800	27	11



Main Objective of RDA:

“on nutrition problems in connection with national defense,”

Apart from it

- ❖ for planning and procuring food supplies
- ❖ for population subgroups;
- ❖ for interpreting food consumption records of individuals and populations; or establishing standards
- ❖ for food assistance programs;
- ❖ for evaluating the adequacy of food supplies in meeting national nutritional needs;
- ❖ for designing nutrition education programs;
- ❖ for developing new products in industry; and
- ❖ for establishing guidelines
- ❖ for nutrition labeling of foods.



Meal Plan

Food groups	Portion size(g)	Man (No. of portions)	Woman (No. of portions)
Cereals and millets	30	12	9
Pulses (Vegetarians)	30	2	2
Pulses (Non-vegetarians)	30	1	1
Milk and milk products	100	3	3
Vegetables	100	3	3
Fruits	100	1	1
Fats and oils	5	5	4
Sugars	5	5	4



THANK YOU