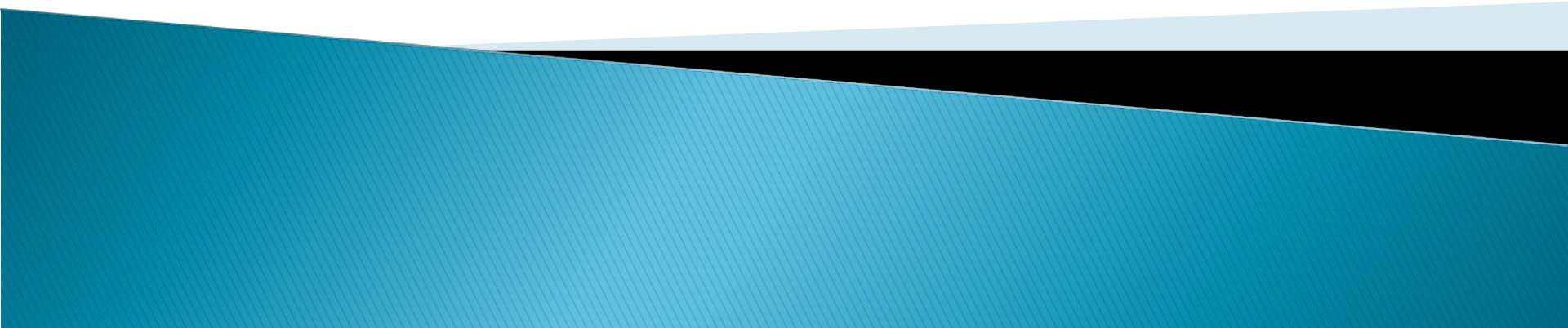
Recommended Dietary Allowance (RDA)



What is RDA?

- Def.: Amount of the nutrient sufficient for the maintenance of health in nearly all people.

- For all nutrients except energy,
  RDA=minimum requirement + safety margin

- RDA doesn't apply to sick people.

Why RDA is important?

- 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 anaemia (IDA),
- diseases such as obesity, diabetes, hypertension, cardiovascular diseases and cancers
- Iodine Deficiency Disease (IDD) has been considerably reduced after the introduction of universal iodised salt

HISTORY OF RECOMMENDED DIETARY ALLOWANCES

- 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

REFERENCE MAN AND REFERENCE WOMAN

REF.MAN:

Age:20-39 yr
Wt.:60 kg
Healthy, fit for active work
He spends 8 hr daily on occupational work (moderate activity)
While not at work he spends 8 hr in bed,
6 hr sitting & moving around,
2 hr walking & household work

REF.WOMAN:

Criteria same as for man except wt. 50 kg

ENERGY

- Energy is a prime requirement for body function and growth.

- <u>Energy requirement</u>:
  in voluntary and involuntary process in our body.

Measurement of Energy

- Expressed as kilo-calorie (kC)

- Energy values:

Carbohydrates - 4 kC / gm
Proteins - 4 kC / gm
Fats - 9 kC / gm

Total energy Requirement

Energy for basal metabolism
1 kC /hr/kg body wt / per day

+

Energy for daily activities
(walking, sitting, standing etc.)

+

Energy for occupational work
(heavy / moderate / sedentary)

CONSUMPTION UNIT

Reference man - one consumption unit

Needed to conduct community diet surveys.

Age group (yr)	Consumption unit
1 - 3	0.4
3 - 5	0.5
5 - 7	0.6
7 - 9	0.7
9 -12	0.8
12 - 21	1.0

Category	Male	Female
Sedentary	1	0.8
Moderate	1.2	0.9
Heavy	1.6	1.2

Categorization of workers

Light worker	Moderate worker	Hard worker
Office worker	Railway worker	Coal miner
Driver	Postman	Steel worker
Shopkeeper	Plumber	Army recruit
Teacher	Bus conductor	Docker
Lawyer	Tailor	Labourer
Doctor	Carpenter	

Factors affecting Energy Requirement

- Age
- Sex
- Working Condition
- Body Composition
- Physical Activity
- Vulnerable / At Risk Groups
    1. Pregnant & Lactating mothers
    2. Infants & Children
    3. Elderly

RDA (per day) for Indians (ICMR)

Group	Particulars	Body Wt. kg	Net Energy kC	Protein gm	Fat gm	Ca mg	Fe mg
Man	Sedentary	60	2425	60	20	400	28
	Moderate	"	2875	"	"	"	"
	Heavy work	"	3800	"	"	"	"
Woman	Sedentary	50	1875	50	"	"	30
	Moderate	"	2225	"	"	"	"
	Heavy work	"	2925	"	"	"	"
	Pregnancy	"	+300	+15	30	1000	38
	Lactation (0-6 m)	"	+550	+25	45	"	30
	Lactation (6-12 m)	"	+400	+18	"	"	"

RDA (per day) for Indians (ICMR)

Particulars	Retinol mcg	Beta Carotene mcg	Thiamin mg	Ribo-flavin mg	Niacin mg	Vit. C mcg	Folic Acid mcg	Vit. B 12 mcg
Sed.	600	2400	1.2	1.4	16	40	100	1
Mod.	"	"	1.4	1.6	18	"	"	"
Heavy	"	"	1.6	1.9	21	"	"	"
Sed.	"	"	0.9	1.1	12	"	"	"
Mod.	"	"	1.1	1.3	14	"	"	"
Heavy	"	"	1.2	1.5	16	"	"	"
Preg.	"	"	+0.2	+0.2	+2	"	400	"
Lact. 0-6 m	950	3800	+0.3	+0.3	+4	80	150	1.5
Lact. 6-12 m	"	"	+0.2	+0.2	+3	"	"	"

RDA (per day) for Indians (ICMR)

Age	Body Wt. kg	Net Energy kC	Protein gm	Fat gm	Ca mg	Fe mg
0-6 m	5.4	108/kg	2 g/kg	-	500	-
6-12 m	8.6	98/kg	1.6g/kg	-	"	-
1-3 yr	12.2	1240	22	25	400	12
4-6 yr	19.0	1690	30	"	"	18
7 9 yr	26.9	1950	41	"	"	26

RDA (per day) for Indians (ICMR)

Age	Body Wt. kg	Retinol mcg	Beta Carotene mcg	Thiamin mg	Vit. C mcg	Folic Acid mcg
0-6 m	5.4	350	1200	55(mcg)	25	25
6-12 m	8.6	"	"	50(mcg)	"	"
1-3 yr	12.2	400	1600	0.6	40	30
4-6 yr	19.0	"	"	0.9	"	40
7 9 yr	26.9	600	2400	1.0	"	60

Uses of RDA

- Basis for all feeding program (school lunch program)
- To interpret food consumption record
- To understand nutritional needs
- Guidelines for public food program
- To develop and evaluate the new food product
- To develops the nutritional education program

Thank You...