BALANCED DIET

UNIT 3

Balanced diet is a combination of different varieties of nutrients.To maintain good health and physical efficiency the diet should contain adequate amount of all nutrients.On the basis of their predominant functions food are sometimes grouped as

1)Energy yielding food- Carbohydrates and Fat

2) Body building food - Protein

3) Protective food - Vitamins and Minerals

carbohydrates

Carbohydrates contain carbon,hydogen , and oxygen.The main function of carbohydrate in the body is to provide energy

USES OF CARBOHYDRATES

- Quick source of energy
- It produces heat and energy
- It regulates amount of sugar circulation in the body
- It assist in body's absorption of calcium
- It helps in lowering cholesterol level and regulate blood pressure
- One mole of carbohydrates releases 4.1 kcal of energy

SOURCES

Rice, Potatoes,Sugarcane,Wheat,Dates,Bread sugar,Beef etc

FAT

Fat is a comlonent used in the production of several hormones like compounds which help to regulate blood pressure,heart rate , blood vessel constriction, blood clotting and nervous system

USES OF FAT

- Delayed source of energy
- Better source than carbohydrate.It can be stored in the body,but reserve fat hampers the actions of the body organs
- Helps to maintain body temperature
- It lubricates and smoothens the body
- It protects delicate organs against being injured
- Helps to maintain healthy hair,skin etc
- One mole fat releases 9.45 kcal of energy

SOURCES

Ghee,Cheese,Milk products,Egg (Yolk) ,oil seeds,fish oils,Badam,Nuts etc

PROTEIN

Proteins are made up of Amino acids.Out of 23 Amino acids ,eight are essential and they cannot be manufactured in our body and are to be supplied from outside.

USES OF PROTEINS

- For building new tissues
- Maintenance of tissues already built and replacement of regular losses
- Functions as regulatory substances for internal water and acid base balance
- For lactation
- It also produces heat and energy in the absence of carbohydrate

Sources

Pulses,cerels,pappayas,beans, nuts,oil seeds, meat,egg (albumin),milk products,fish etc

Minerals

Minerals provide material for the growth and development of bones and teeth.They are also needed for the growth of body cells,especially the red blood cells

USES

- They maintain acid balance in the body
- They regulate normal system in the heart beat
- They regulate normality in reaction time
- Formation of bones and teeth
- It activates the digestive system and strengthens muscles

SOURCES

Carrot,Green leafy vegetables, Egg ,meat etc

vitamins

Food contains certain chemical substances in small amounts. These are called vitamins.Vitamins play a key role in most chemical reactions in the body but they do not provide energy.

USES

- It facilitates the digestive action
- For proper growth of the body
- It produces disease resistance and destroying capacity
- For proper physical reproduction

THE DIETARY REFERENCE INTAKES (DRI)

- The DRI Committee consists of highly qualified scientists who base their estimates of nutrient needs on careful examination and interpretation of scientific evidence

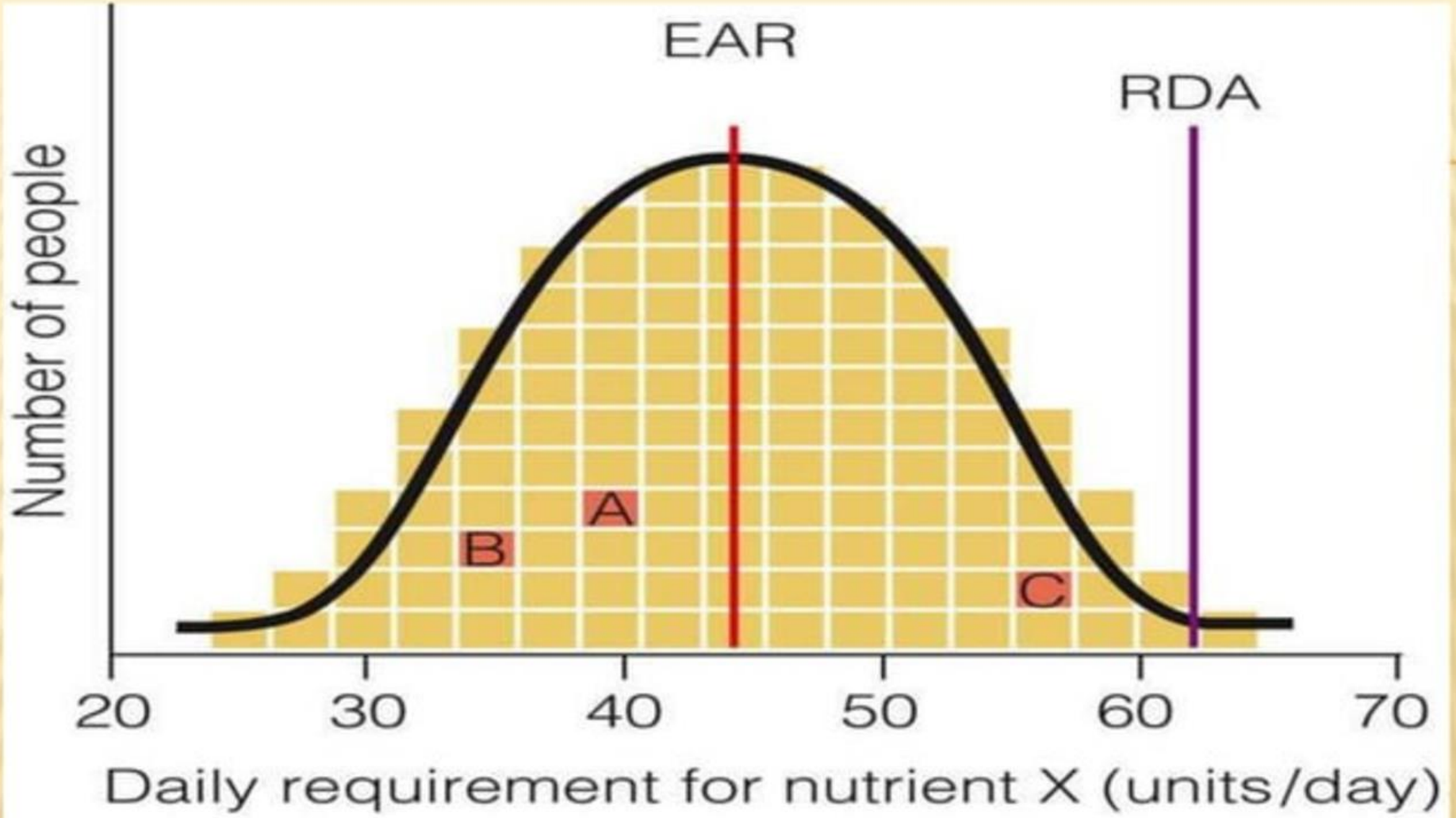
Don't let the DRI alphabet soup of nutrient intake standards confuse you. Their names make sense when you learn their purposes.

THE DIETARY REFERENCE INTAKES (DRI)

- Establishing Nutrient Recommendations
  - EAR: Estimated Average Requirement (EAR) defines the requirement of a nutrient that supports a specific function in the body for half of the healthy population.
    - The committee reviews hundreds of research studies to determine the requirement for a nutrient how much is needed in the diet.
    - the intake of a nutrient that will meet the requirements of one half of all healthy individuals.
    - The intake that meets the estimated nutrient need of 50% individuals.
    - This figure is used as the basis for developing the RDA

THE DIETARY REFERENCE INTAKES (DRI)

- Establishing Nutrient Recommendations
  - RDA: Recommended Dietary Allowances (RDA) Once a nutrient requirement is established (EAR), the committee must decide what intake to recommend for everybody
  - (RDA) uses the EAR as a base and includes sufficient daily amounts of nutrients to meet the known nutrient needs of practically all healthy populations (almost all -97 to 98%)
  - This recommendation considers deficiencies. This is set above the EAR.



The Recommended Dietary Allowance (RDA) for a nutrient (shown here in purple) is set well above the EAR, covering about 98% of the population.

Fig. 1-5b, p. 17

THE DIETARY REFERENCE INTAKES (DRI)

- Establishing Nutrient Recommendations
  - AI: Adequate Intakes (AI) reflect the average daily amount of a nutrient without an established RDA that appears to be sufficient.
    - For some nutrients, there is insufficient scientific evidence to determine an Estimated Average Requirement (which is needed to set an RDA).
  - UL: Tolerable Upper Intake Level (UL) is a maximum daily amount of a nutrient that appears safe for most healthy people and beyond which there is an increased risk of adverse health effects.
    - Individual tolerances for high doses of nutrients vary… a point beyond which a nutrient is likely to become toxic. This point is known as the Tolerable Upper Intake Level (UL).

THE DIETARY REFERENCE INTAKES (DRI)

- It is naive and inaccurate to think of recommendations as minimum amounts.
- A more accurate view is to see a person's nutrient needs as falling within a range, with marginal and danger zones both below and above it

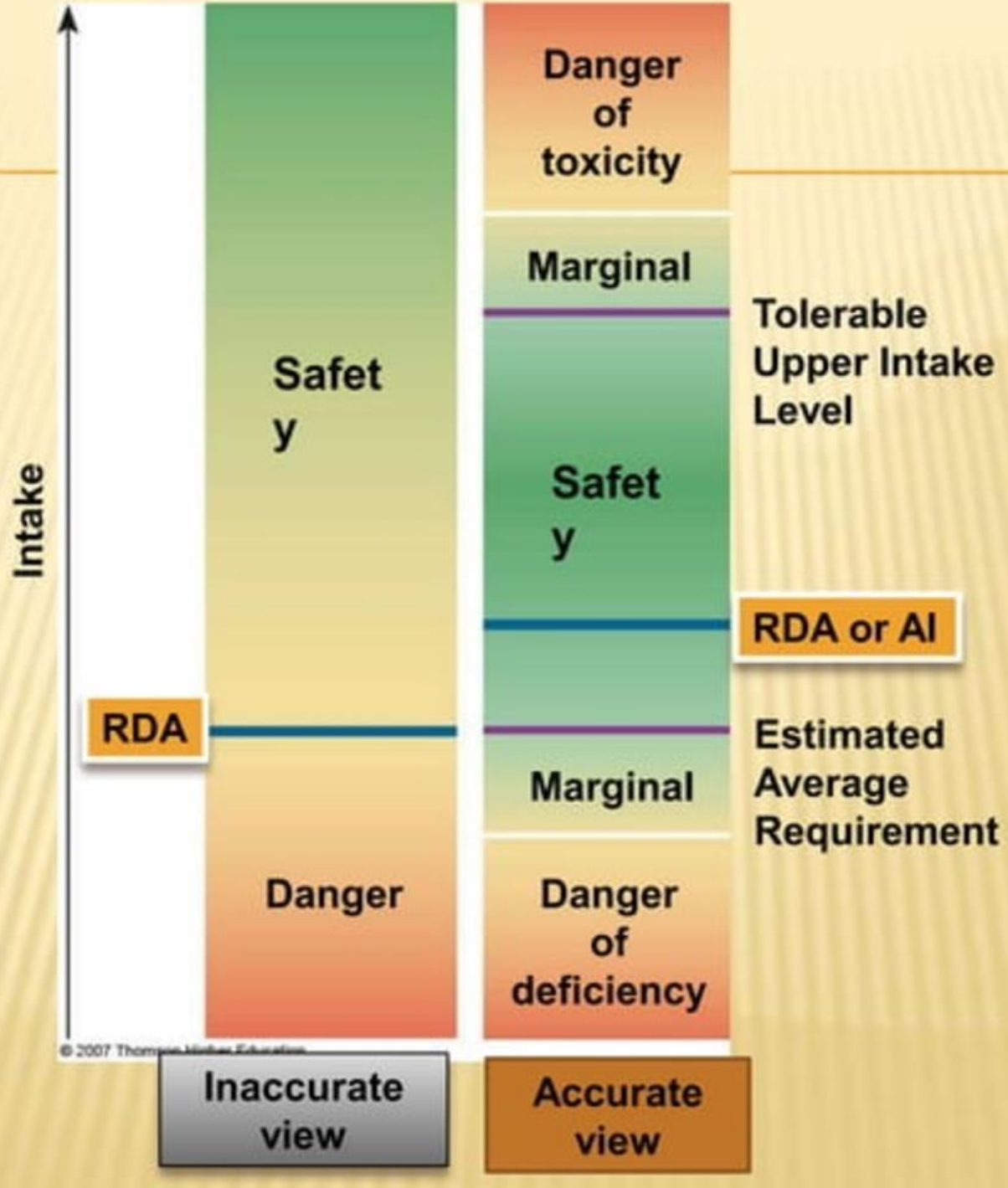
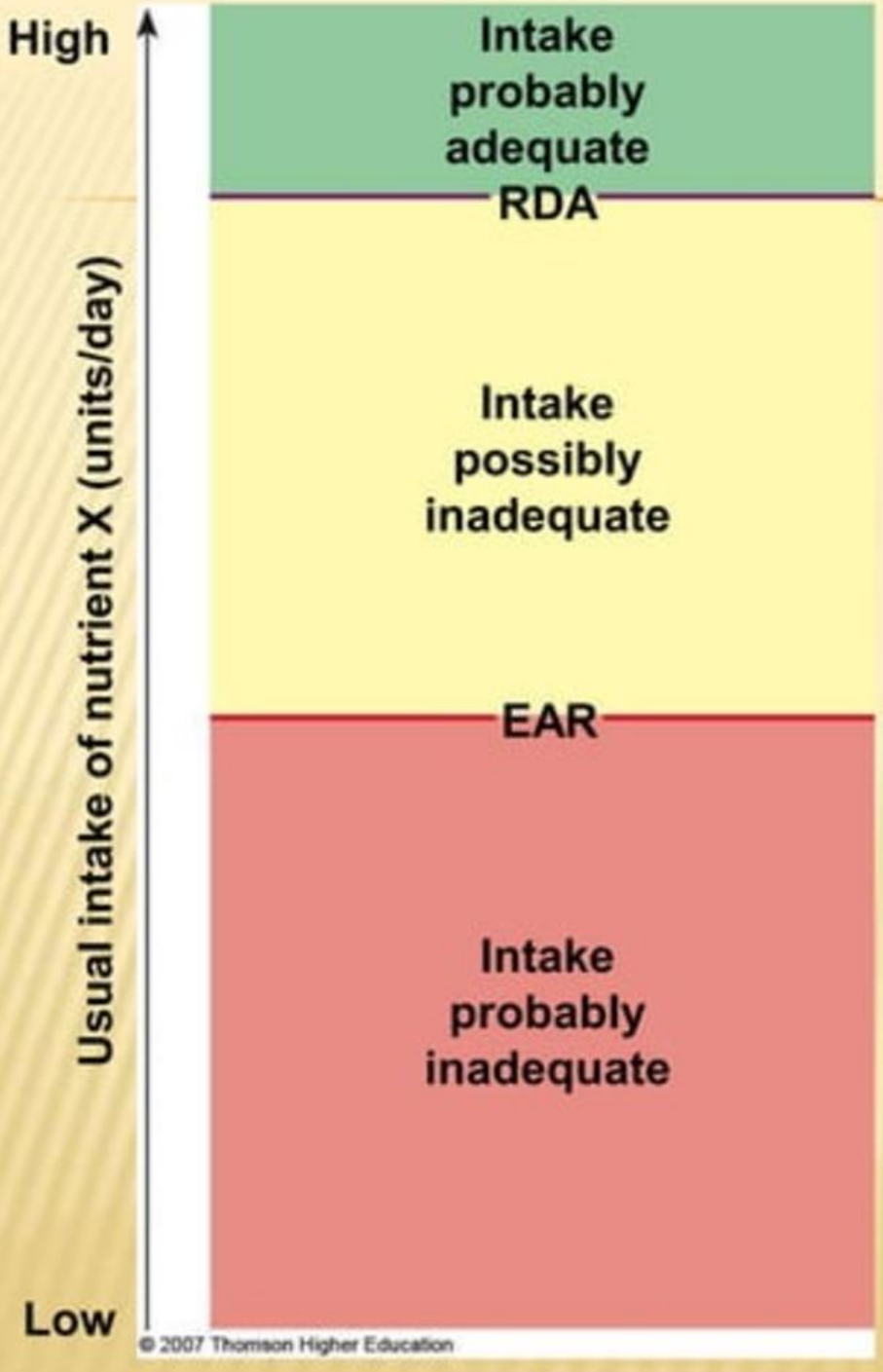

Intake
Safety
Danger
RDA
Danger of toxicity
Marginal
Safety
Marginal
Danger of deficiency
Tolerable Upper Intake Level
RDA or AI
Estimated Average Requirement
Inaccurate view
Accurate view

Fig. 1-6, p. 18



If a person's usual intake falls above the RDA, the intake is probably adequate because the RDA covers the needs of almost all people.

A usual intake that falls between the RDA and the EAR is more difficult to assess; the intake may be adequate, but the chances are greater or equal that it is inadequate.

If the usual intake falls below the EAR, it is probably inadequate.

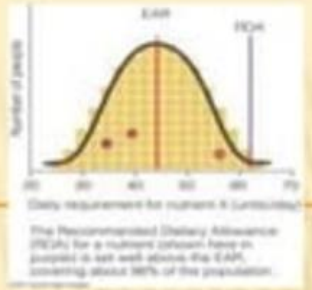
Fig. 1-7, p. 21

THE DIETARY REFERENCE INTAKES (DRI)

- Establishing Energy Recommendations
  - Estimated Energy Requirement (EER) represents the average daily energy intake to maintain energy balance and good health for population groups. (2000 Kcal)
  - Acceptable Macronutrient Distribution Range (AMDR) represents the range of intakes for energy nutrients that provide adequate energy and nutrients and reduce risk of chronic disease.
    - 45 - 65 percent kcalories from carbohydrate
    - 20 - 35 percent kcalories from fat
    - 10 - 35 percent kcalories from protein

Know this!

IN SUMMARY



- The Dietary Reference Intakes (DRI) are a set of nutrient intake values that can be used to plan and evaluate diets for healthy people.
- The Estimated Average Requirement (EAR) defines the amount of a nutrient that supports a specific function in the body for half of the population.
- The Recommended Dietary Allowance (RDA) is based on the Estimated Average Requirement and establishes a goal for dietary intake that will meet the needs of almost all