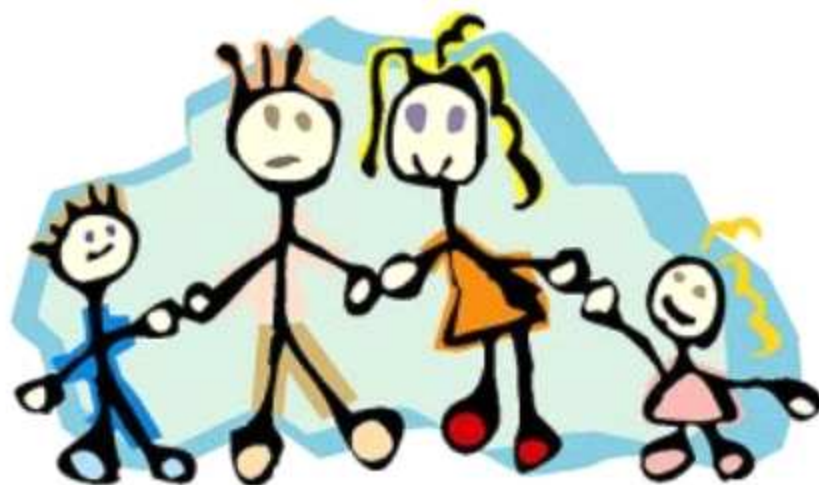


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## Adolescence Health Education Programme

Nutrition Matters



Food & Nutrition



Kerala State AIDS Control Society  
State Council of Educational Research and Training



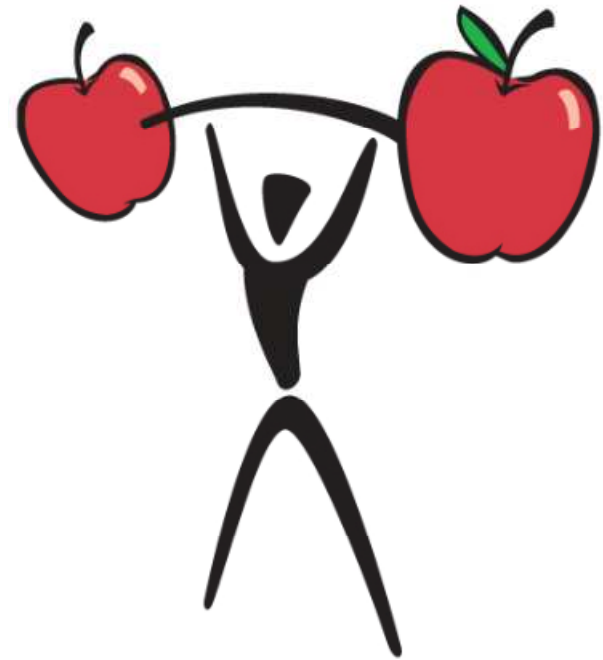
# Nutritional Needs among Adolescents

- Fast growth and physical maturation
- Reaches the peak of weight and height
- Period of exploration and learning
- Good time to establish proper health and nutrition practices and behaviors
- Expanding relationship and friendships
- Influence lifestyles and behaviors



Adolescence is one of the fastest growth periods of a person's life. During this time, physical changes affect the body's nutritional needs, while changes in one's lifestyle may affect eating habits and food choices.

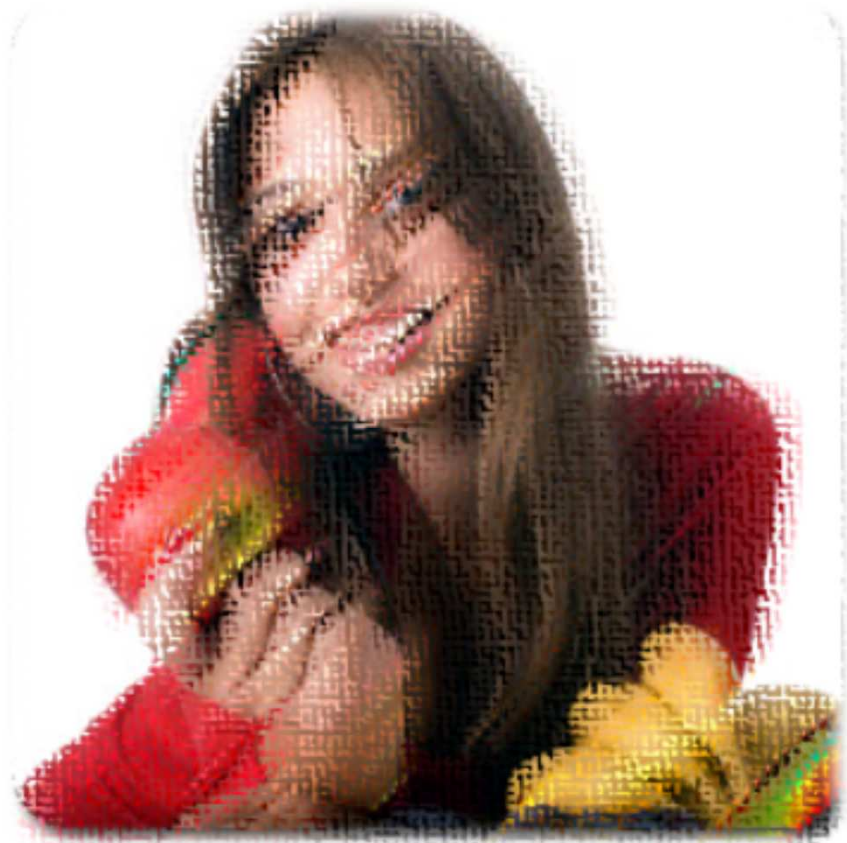
Nutritional health during adolescence is important for supporting the physical growth and for preventing future health problems.

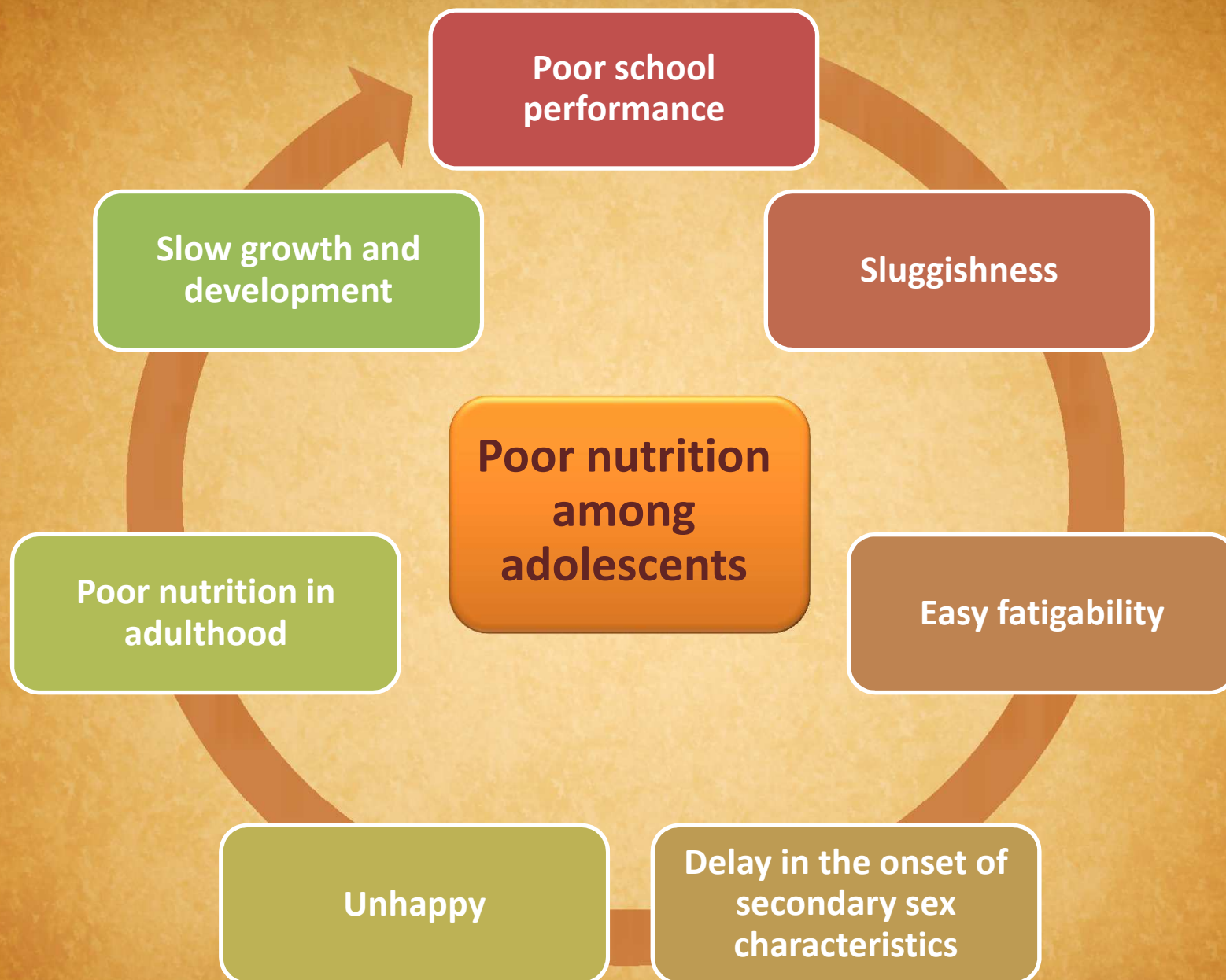


The physical changes of adolescence have a direct influence on a person's nutritional needs. Teenagers need additional calories , protein , calcium , and iron .

Nutritional problems in adolescents start during childhood and continue into adult life. Anemia is a key nutritional problem in adolescent girls. For both girls and boys, adolescence is an ideal time to shape good eating and physical activity

habits





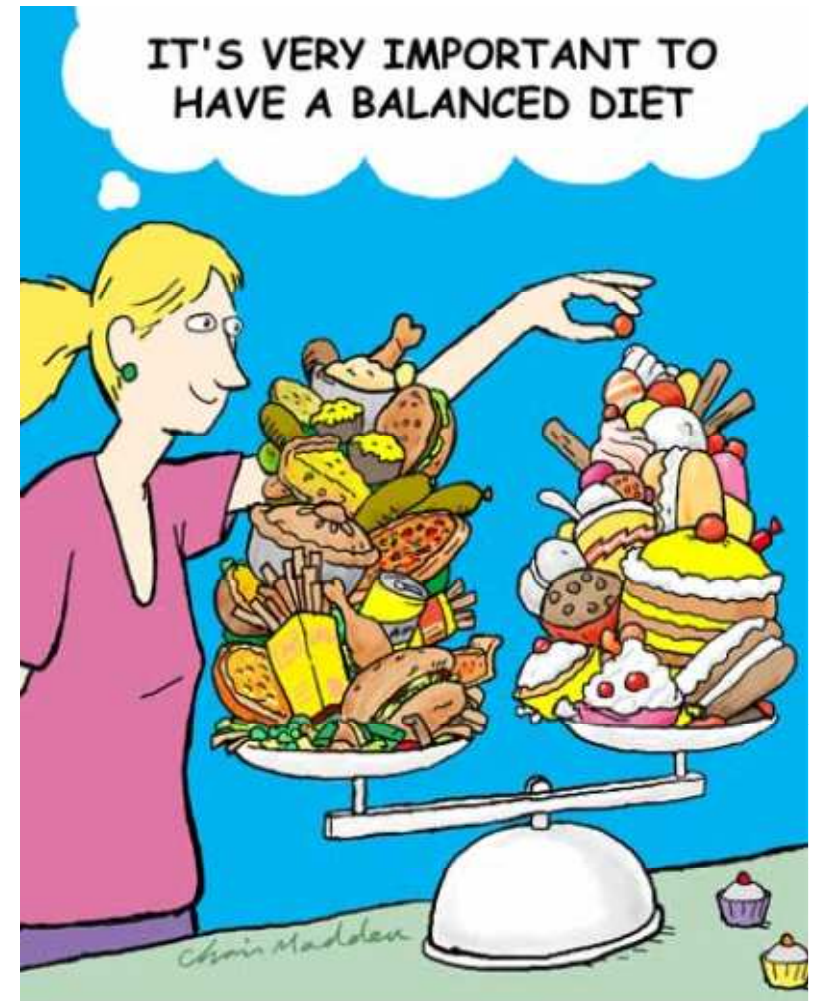


## Balanced Diet

Eating a balanced diet means choosing a wide variety of foods and drinks from all the food groups.

A well-balanced diet includes food from the five main food groups.

Since no single food group can nourish the body with all the vital ingredients it requires, it is important that we consume a variety of *healthy foods* to derive the nutrition our body needs.



## There are five main food groups, they are:

- Fruits
- Vegetables
- Cereals and Pulses
- Dairy
- Poultry, Fish and Meat products

A healthy balanced diet of these five food groups ensures essential vitamins, minerals and dietary fiber. The food group serving size will depend upon various factors like age, activity level, body size and gender. It is also important that one eat a variety of foods from within and across the food groups. As some foods from within a food group provide more nutrients than others.



# Balanced Diet

- ☐ A balanced diet provides the body with energy, protection from disease, and boosts overall health
- ☐ It ensuring overall well being and helps to maintain a healthy Body Mass Index (BMI).
- ☐ It is important in the prevention and cure of various diseases.

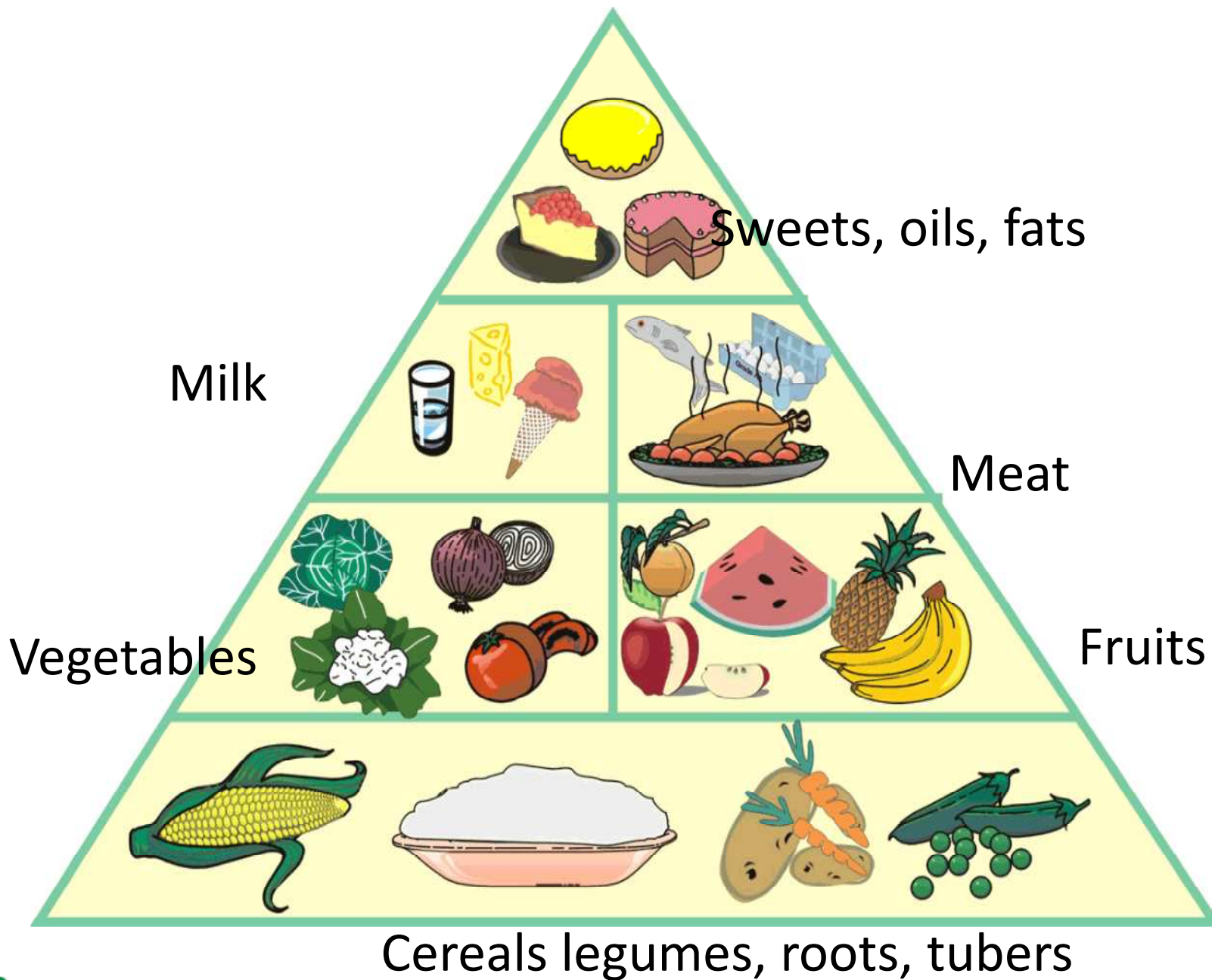
It reduces the risk of several diseases like,

- cancer
- cardiovascular ailments
- diabetes
- stroke
- anemia
- Osteoporosis
- Vitamins and mineral deficiency
- Obesity/ under nutrition

- ☐ A well-balanced diet provides enough energy and nutrition for optimal growth and development.







- The quantity of healthy food shall be on the basis of actual need.
- Actual need varies with physical activity
- Physically active people have higher energy needs
- If you have low physical activity then you can become obese even with low intake.

*‘Energy intake should balance energy expenditure’*



## 4 keys to a healthy diet:

- Eat a variety of foods
- Eat plenty of vegetables and fruits
- Eat moderate amounts of fat and oils
- Eat less salt and sugars



## Nutrition

- ☐ Nutrition is the process in which you consume food or nourishing liquids, digest and absorb them and use them for health and growth.
- ☐ Nutritious foods help in growth and development.
- ☐ Nutrition is the process by which your body gets energy and nutrients from the food you eat. There are six types of nutrients:
  - Proteins
  - Carbohydrates
  - Fats
  - Vitamins
  - Minerals
  - Water



**Proteins** are important substances found in every cell in your body.

- Proteins help your cells get energy from the food you eat.
- It build up or repair your body.
- Proteins also help make your bones strong and help your muscles flex.
- The protein inside your red blood cells that carries oxygen to every part of your body.



**Carbohydrates** are the main source of energy for your body

Healthy carbohydrates include:

- Natural sugars in fruits, vegetables, and milk
- Starches in whole-grain foods, beans, peas, and corn
- Dietary fiber





## Significance of Fiber

- Fiber is largely a carbohydrate.
- The main role of fiber is to keep the digestive system healthy.
- It also contributes to other processes, such as stabilizing glucose and cholesterol levels.

**Physiological benefits of consuming fiber, among which are:**

- \* Improved absorption of calcium, magnesium, and iron
- \* Reduction of blood cholesterol and triglyceride levels
- \* Maintenance of an optimal intestinal environment
- \* Stimulation of immune responses

**Consistent intake of fiber through foods like whole grains, berries and other fresh fruit, vegetables, seeds and nuts is now associated with reduced risk of some of the world's most prevalent diseases including:**

- \* Several types of cancer
- \* Obesity
- \* Type 2 diabetes
- \* High blood cholesterol
- \* Cardiovascular disease
- \* Numerous gastrointestinal disorders (constipation, inflammatory bowel disease, ulcers, and colon cancer)



Vitamins and minerals boost the immune system, support normal growth and development, and help cells and organs do their jobs.

✓ Iron  
✓ Zinc  
✓ Iodine  
✓ Calcium

- Increased need during adolescence
- Needs met by a well-balanced diet
- Vitamin D
- Thiamin
- Riboflavin
- Niacin
- Vitamin B 12
- Vitamin C
- Folic acid



Sources – Fruits, fresh milk, sprouted beans etc.

## Importance of Iron

As adolescents gain muscle mass, more iron is needed to help their new muscle cells obtain oxygen for energy.

### Iron is an essential for:

- the formation of hemoglobin and certain enzymes,
- many proteins and enzymes that maintain good health,
- transporting oxygen in the blood to all parts of the body,
- many metabolic reactions and the regulation of cell growth and differentiation,
- immune activity,
- proper functioning of the liver
- Daily need

Boys = 12 mg/d & Girls = 18 mg/d

Deficiency of iron causes anemia , which leads to fatigue , confusion, and weakness. Anemia is most common nutritional deficiency in adolescents.

Iron includes in Green leafy vegetables, jaggery, wet dates, whole-grain, dried beans, peas dried fruits, nuts & fortified wheat products, eggs, red meat etc.



## Role of Calcium

- Adequate calcium intake is essential for development of strong and dense bones during the adolescent growth spurt. Inadequate calcium intake during adolescence and young adulthood puts individuals at risk for developing osteoporosis later in life.
- Most bone mass acquired during adolescence.
- Typical intake of calcium = about 800 mg/ d
- Daily need = 1300 mg
- Consumption of soft drinks & caffeine contribute substantially to low calcium intake in adolescents.
- Bone mass deficiency may be irreversible.



**Milk and its products,  
yogurts, cheese, paneer,  
banana etc. are rich in  
Calcium.**

# Zinc

- Zinc is such a critical element in human health that even a small deficiency is a disaster. Zinc supplementation is a powerful therapeutic tool in managing a long list of illnesses. Zinc is considered essential for cell division and the synthesis of DNA and protein. Zinc is also critical to tissue growth, wound healing, taste acuity, connective tissue growth and maintenance, immune system function, prostaglandin production, bone mineralization, proper thyroid function, blood clotting, cognitive functions, fetal growth and sperm production.
- Green leafy vegetables, wheat germ, whole grains meat, cheese, eggs, poultry, liver etc. contains large amount of Zinc. Most meat products have healthy amounts of zinc, and many seeds are also excellent source of zinc.

- **Second most abundant trace mineral in the body. (next to iron)**
- **Necessary for normal growth.**
- **Daily need = 15 mg**





# Fats

Fat is an essential part of the diet, your body needs some fat to grow and work well. Your body uses fats to make substances that it needs. Like carbohydrates, fat is a source of energy.

There are three major types of fat in food:

- **Good fat** , we all need to eat fat as part of a healthy diet. 'Good' fats include omega-3 fatty acids, found particularly in fatty fish such as tuna, salmon and swordfish; and omega-6 fats found in olives, nuts, seeds and seed oils, and many vegetables and grains. These help keep our arteries healthy and raise levels of beneficial HDL (high-density lipoprotein) cholesterol.
- **Saturated fats** are dangerous because they raise 'bad' cholesterol and can block up the arteries to the heart. Having too much harmful cholesterol in the blood increase the risk of coronary heart disease . Saturated fats are found in red meats (such as beef, pork, and lamb) and animal products (such as butter, cheese, and all milk except skim). Saturated fats are also in palm and coconut oils. These oils are often used in ready-made cakes and cookies, as well as crackers.
- **Trans fats** are found in fried foods, such as french fries. Like saturated fats, *trans* fats are often found in ready-made cakes and cookies, as well as crackers. When you see the words "hydrogenated" or "partially hydrogenated" in the ingredients list on the package, it means that the food contains *trans* fats.



- Saturated and *trans* fats increase your risk of heart disease, stroke, and perhaps other diseases.
- To help prevent these diseases, most of the fats you eat should be unsaturated.
- Even with unsaturated fats, you should only eat them in moderate amounts.
- Eating too much of any type of fat can cause you to gain too much weight. And being overweight or obese can also cause health problems

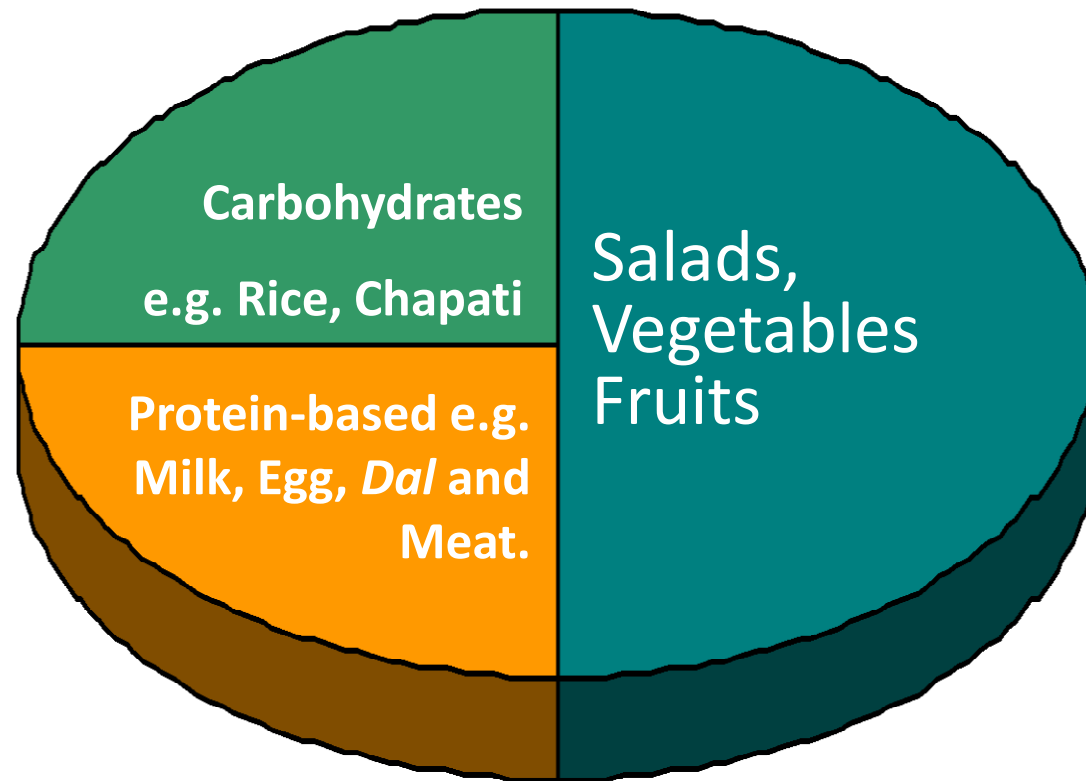


# Water

- Water is your body's principal chemical component, making up, on average, 60 percent of your body weight. Every system in your body depends on water. For example, water flushes toxins out of vital organs, carries nutrients to your cells and provides a moist environment for ear, nose and throat tissues.
- Lack of water can lead to dehydration, a condition that occurs when you don't have enough water in your body to carry out normal functions. Even mild dehydration can drain your energy and make you tired.
- Drinking water should always be clean and free of contaminants to ensure proper health and wellness.



Healthy Diet: *Food intake*



Recommendations of IAP: Indian Pediatrics 2004; 41:559

Courtesy – Dr.Swati Bhave, 2005.

- ✓ Increase fiber
- ✓ Decrease oily foods
- ✓ 'No' to soft drinks

# Calories

A calorie is a unit of energy. We all need energy to survive. The number of calories in a food is a measure of how much potential energy that food possesses.

- ✓ Adolescents need additional calories to provide energy for growth and activity. Boys ages 11 to 18 need between 2,500 and 2,800 calories each day.
- ✓ Adolescent girls need approximately 2,200 calories each day. This is a significant increase from childhood requirements.
- ✓ To meet these calorie needs, teens should choose a variety of healthful foods, such as lean protein sources, low-fat dairy products, whole grains, fruits, and vegetables.





One of the most important diet considerations during adolescence is an increase in the intake of iron-rich foods such as beans, dark green vegetables, nuts and iron-fortified cereals and other grains.

Fruit and vegetables are packed with vitamins and minerals, low in calories and high in fiber. Eating lots of fruit and vegetables keeps the heart and body healthy.



## Why are adolescents undernourished?

- Not enough food to eat
- Access to empty calorie, less nutritious foods
- Poor eating habits
- Unhealthy lifestyle practices

# Thank you



Kerala State AIDS Control Society  
State Council Educational Research and Training

