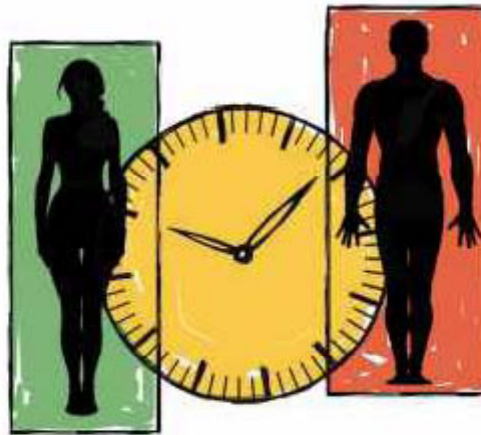


Chapter -2



Growing up concerns

Adolescence

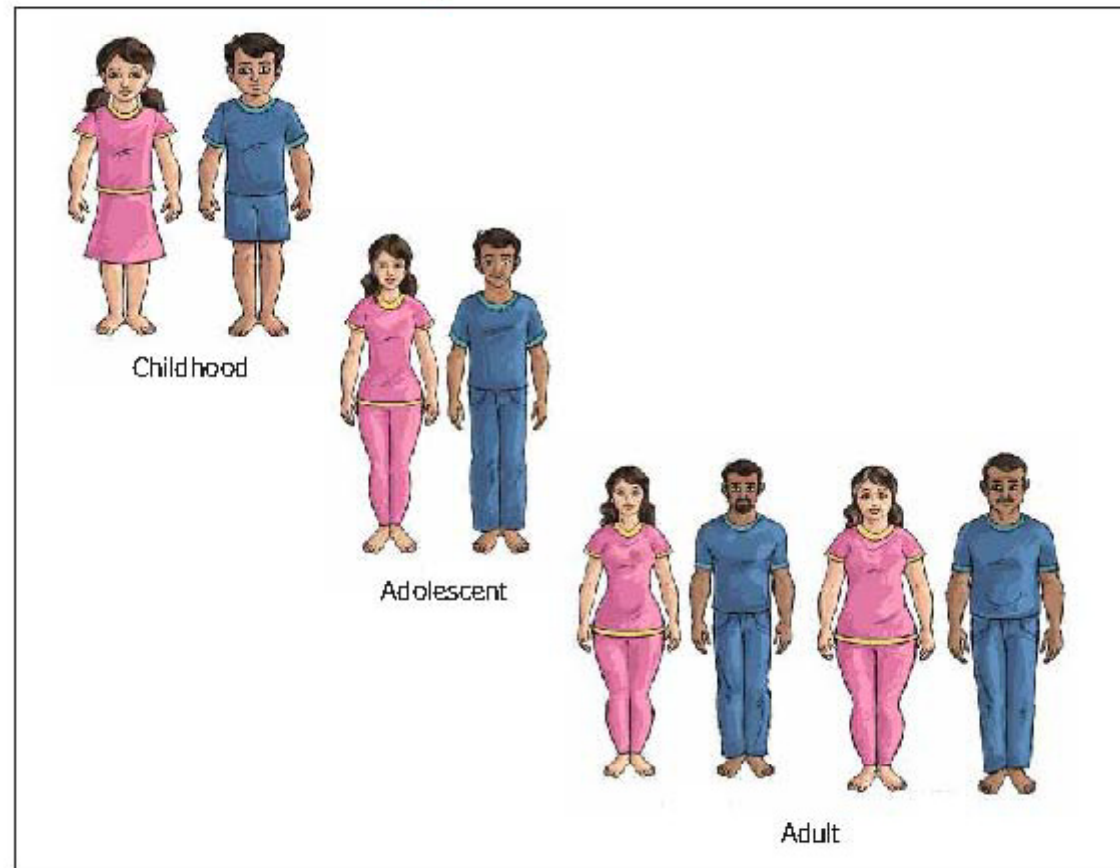
- This is the phase of transition from childhood to adulthood.
- The age of adolescence is generally regarded as 10-19 years.
- The time for driving moms and dads out of their minds.
- The period during which one develops personal identity.

Adolescence is generally characterized by following :

- Cognitive, emotional and attitudinal changes
- More importance to friends and peers than family
- Quest for self-identity
- Desire to gain independence in words & deeds
- Sexual desires set in after puberty



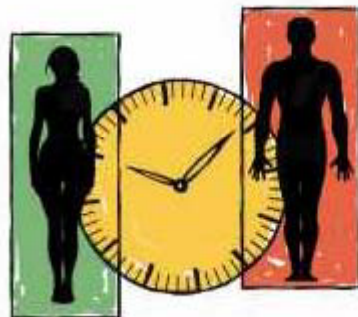
Stages of human life



Puberty

- Puberty is a stage of adolescence
- Pubertal spurt :
 - > Sudden increase in height and weight (Boys : 20-38 cm and 20 kg, Girls : 15-16 cm and 16 kg)
 - > Changes in body proportions
 - > Changes in facial features
 - > Changes in body structure and fat deposition

Sequence of changes during adolescence



Female Body Clock	Male Body Clock
Breast budding	Growth of testes and scrotum
Growth of bony pelvis	Pubic hair
Growth spurt	First ejaculation
Pubic hair	Growth spurt-arms, legs
First Menstrual period (Menarche)	Voice change-growth of larynx
Underarm hair and coarse body hair	Underarm hair and coarse body hair
Oil and sweat producing glands	Oil and Sweat producing glands
Completion of growth of uterus and vagina	Facial hair-Beard

Girls and boys grow differently during adolescence

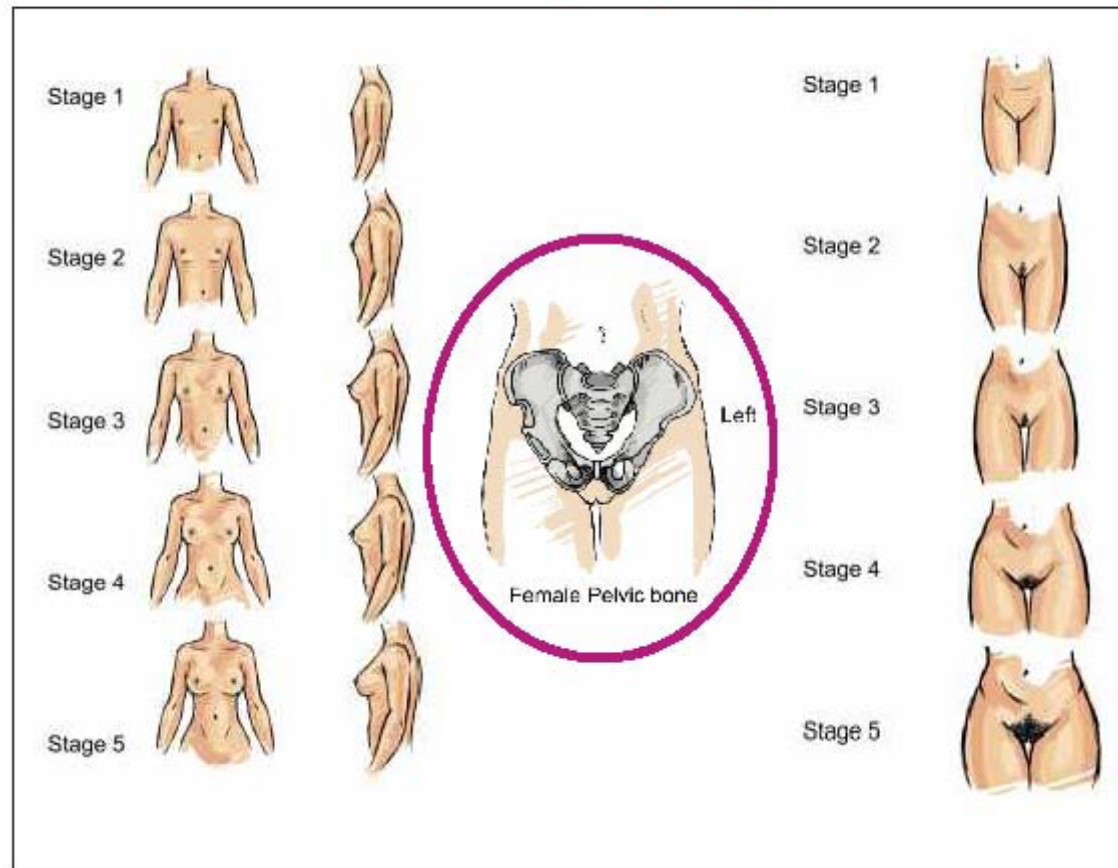
Girls :

- Breast Budding
- Growth of bony pelvis
- Peak growth velocity
- Pubic hair
- Menarche
- Underarm and coarser body hair
- Oil and sweat producing glands activation

Boys :

- Growth of testes and scrotum
- Pubic hair
- First ejaculation
- Growth spurt-arms, legs
- Voice becomes hoarse, prominent Adam's apple
- Underarm and coarser body hair
- Oil and sweat producing glands activation

Growth spurt (Girls)



Adolescent concerns - 1



Boys

- Weight & Height
- Facial Hair
- Complexion
- Body hair
- Muscles
- Voice
- Acne
- Blemishes

Girls

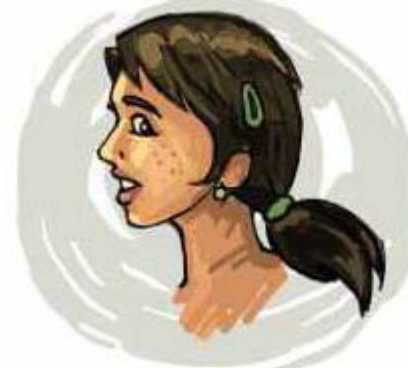
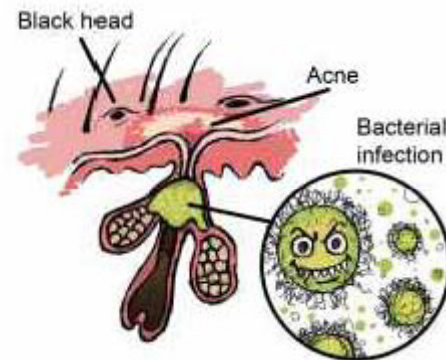
- Weight & Height
- Breast size
- Complexion
- Body hair
- Muscles
- Acne
- Blemishes

Adolescent concerns - 2

Girls & Boys

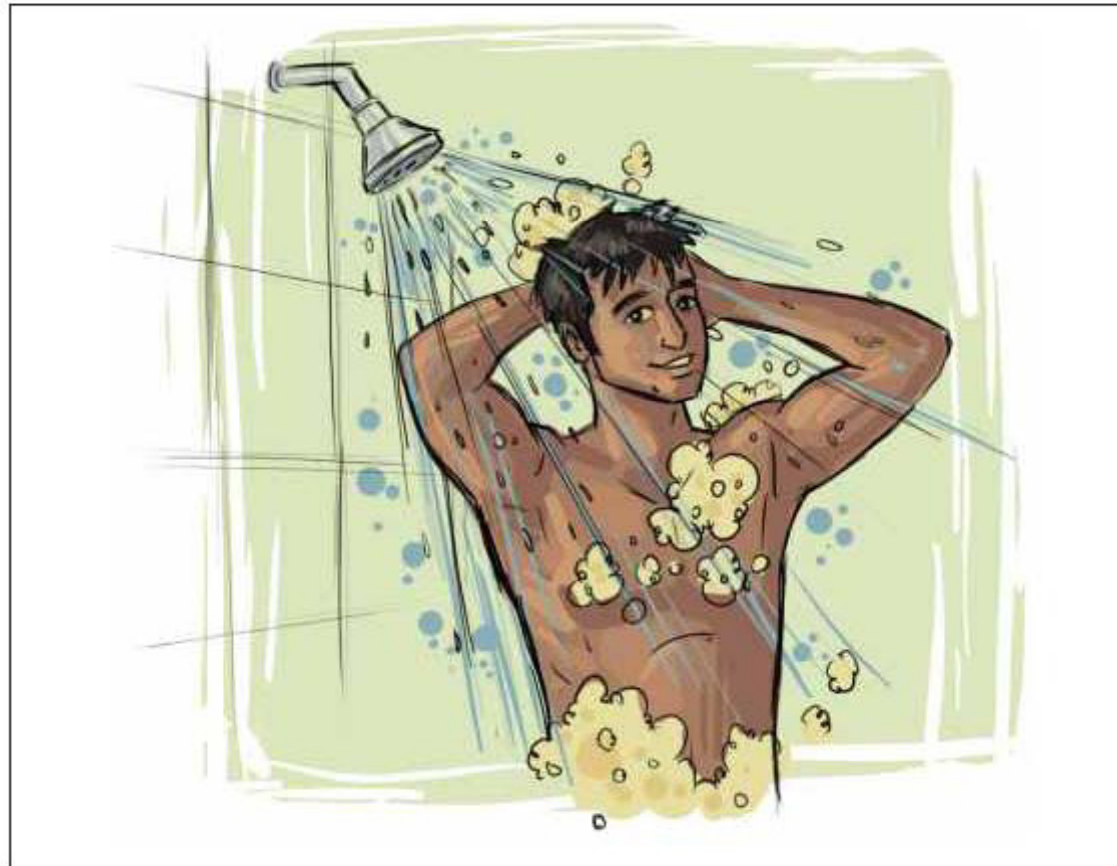
- General attractiveness.
- Facial features.
- Using optical aids (spectacles).
- Dental braces.
- Problems related to specific parts – legs, thighs, abdomen, buttocks, hips.

Acne



- Caused due to overproduction of sebum that blocks the pores on the skin.
- Blocked pores develop blackheads which when infected become pimples.
- You are not alone : Millions of teens have the same problem.
- Should not feel guilty or embarrassed because having acne is normal and is a part of growing up.
- Factors that may lead to appearance of acne are age, heredity, stress and hormonal changes.
- It is usually a temporary condition that goes away once you reach adulthood.
- If you feel anxious and are unduly worried, visit a doctor.

Acne - Some home based care



Body odour



- This condition affects both men and women and usually begins during childhood or at puberty.
- Some people perspire more than others.
- Everyone's body chemistry is different.
- Sweat itself is almost totally odourless; but it is the bacteria present on our body which multiply rapidly in presence of sweat and give this typical odour. An individual's body odour is also influenced by diet, gender, genetic factors, health, medication and sometimes also by make up mood. But with proper care, this problem can be easily sorted out.

Physical activity - Exercise



- Reduces stress and tension.
- Increases strength and stamina.
- Improves sleep.
- Helps to reduce weight.
- Improves functions of cardiovascular and respiratory system.
- Tones the muscles.
- Proper sleeping habits.

Exercise strengthens the body

- Exercise makes the heart and lungs strong.
- It increases strength and endurance, and helps maintain a healthy weight.
- It can change a person's body shape by building or defining certain muscle groups over a period.
- Exercise can also help alter body composition by increasing the ratio of muscle to fat.
- Most people who exercise regularly feel healthier and more alert.

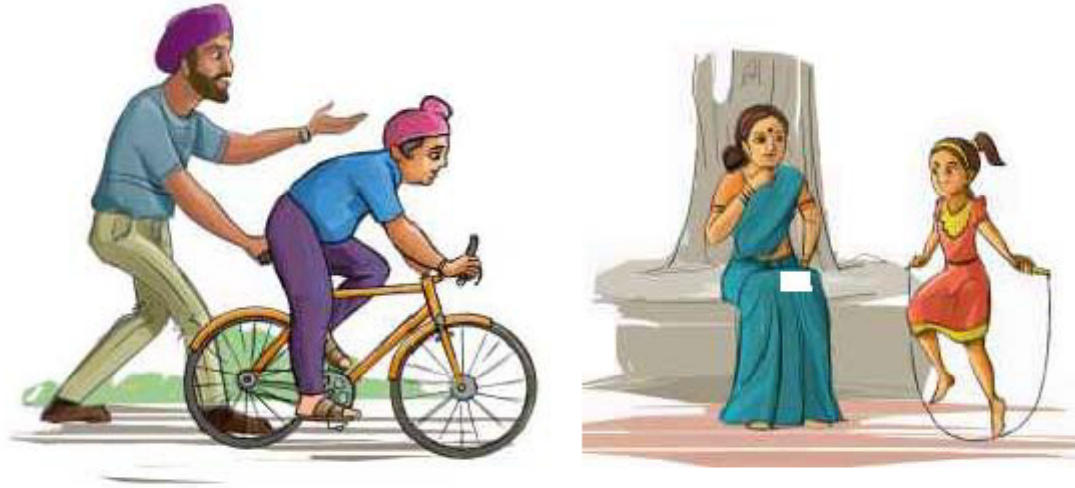


Exercise has physiological effects too!



- Improves concentration.
- Helps to relieve menstrual pain and backache.
- Increases muscular flexibility and general health.
- Ensures better oxygen supply.
- Stimulates metabolism and more efficient utilization of energy.

How much exercise is enough?



- Teenagers should do some sort of aerobic exercise two or three times a week, for 30 to 60 minutes at a time.
- Exercise, like most things in life, is best done in moderation.
- Too much exercise too soon can create injuries or cross the line to compulsive exercise.

Types of exercise - 1



- **Aerobic Exercises :**
 - > Oxygen is used to release energy for muscle activity .
 - > Improves functioning of the heart, blood vessels and lungs.
Examples : Jogging, running, swimming etc.
- **Anaerobic Exercises :**
 - > The sudden spurt of muscle activity utilizes carbohydrates.
 - > Improves stamina and strength, relieves aches and pains.
Example : Weight lifting

Types of exercise - 2



- **Isotonic exercises :**
 - > Helps in developing muscular strength and flexibility.
 - Example : Yoga
- **Isometric exercises :**
 - > Muscles are made to work against static resistance.
 - > Expend energy and do not produce movements.
 - Example : palm-to-palm.

Body Mass Index

$$\text{BMI} = \frac{\text{Weight (kg)}}{[\text{Height (m)}]^2}$$

Weight Classification by BMI range

Category	BMI range (kg/m ²)
Severely underweight	less than 16.5
Underweight	from 16.5 to 18.4
Normal	from 18.5 to 24.9
Overweight	from 25 to 30
Obese Class I	from 30.1 to 34.9
Obese Class II	from 35 to 40
Obese Class III	over 40

Nutrition



- Energy and protein requirements peak at the age of 11-14 years for girls (1500-3000 Kcal/d) and 15-18 years for boys (2,000-3700 Kcal/d).
- Protein : 0.8 –1.0 g/kg/d
- Fat : adult levels of 30% of calories should be encouraged.
- Calcium : 1,200-1,500 mg/d recommended (600-800 consumed).
- Iron : Prevents anemia.
- Zinc : Growth increases zinc requirements.

Components of healthy diet

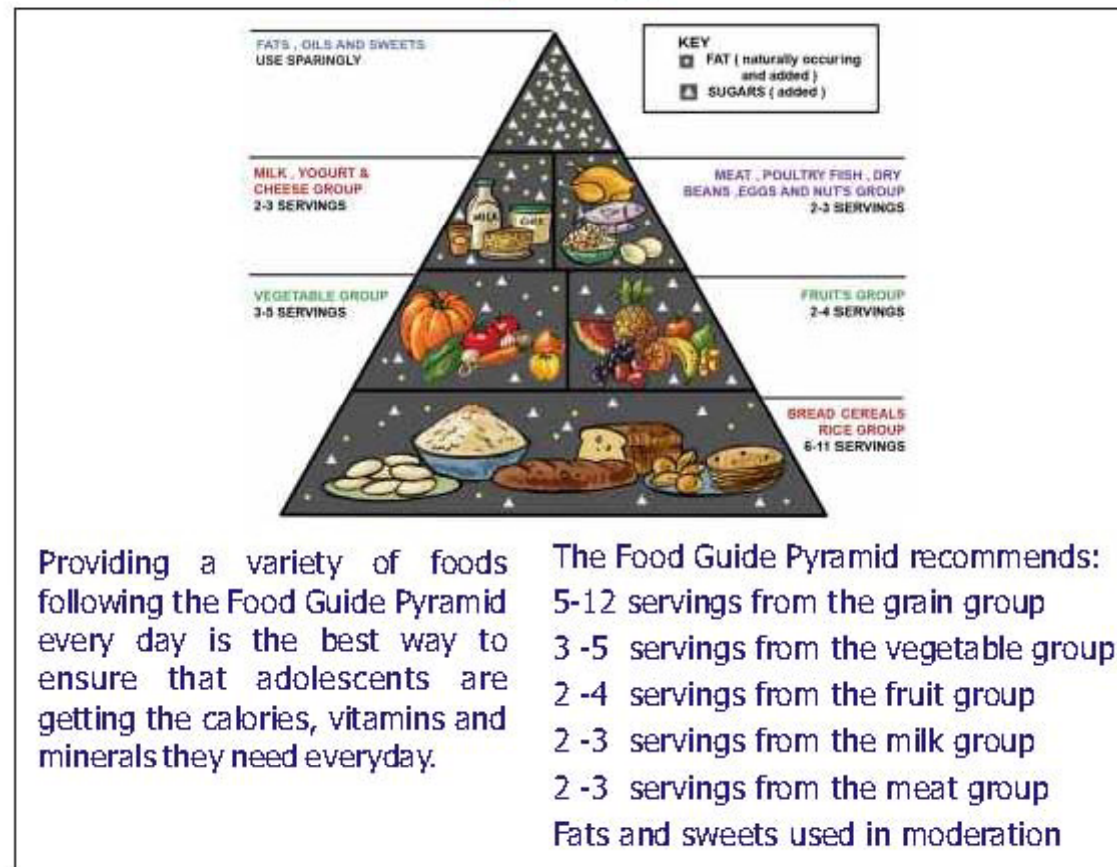


- Cereals
- Legumes (Pulses)
- Roots and tubers
- Vegetables
- Fruits
- Milk and milk products
- Meat



- Fats, oils, nuts and oil
- Seeds
- Sugars
- Condiments and spices
- Salt
- Water

Food guide pyramid



Nutrient requirements



Various sources of minerals

- Calcium : Milk and milk products, ragi, fish, soya bean.
- Iron : Liver, meat, green leafy vegetables, whole wheat.
- Zinc : Oyster, meat, egg yolk, nuts, pulses.
- Magnesium : Wheat germ, whole grain cereals, ripe mangoes, nuts.
- Fiber : Whole grain cereals, green leafy veg., legumes, pulses, carrots, fruits.

Nutrient requirements



Vitamins

- Vitamin A : Spinach, carrots, ripe mangoes, fish, egg, milk and milk products.
- Pyridoxine (B6) : Wheat germ, meat, egg yolk, pulses, legumes, banana etc.
- Vitamin E : Nuts, oil seeds.
- Vitamin D : Milk products, legumes.
- Vitamin C : Potatoes, amla, guava, cabbage, lemon.
- Folic acid : Leafy vegetables, Wheat germ, egg yolk.

Adolescent eating habits and food fads



- Missing meals : breakfast or lunch
- Eating snacks and confectionaries
- Fast food
- Soft drinks
- Start of alcohol consumption
- Likes and dislikes for food
- Unpredictable food consumption
- Low intake of certain nutrients
- Unconventional meals
- Adolescent dieters

What are the basic nutritional challenges of adolescents?



- Chronic state of malnutrition contributes to slow growth.
- Late achievement of maturity.
- Lack of proper nutrition may lead to stunted growth and delay the process of puberty.



"We have to make conscious efforts to strengthen our body and mind by taking good nutrition and inculcating healthy habits".

