

# **A TEXTBOOK OF PHYSICAL EDUCATION CLASS 12**

## **Chapter 2**

### **CHILDREN AND WOMEN IN SPORTS**



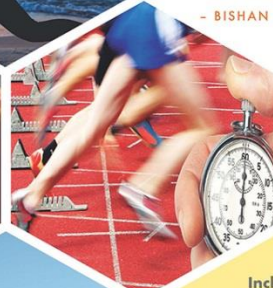
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BOOKS



“My single achievement is that, with my sincere and honest approach, I inculcated the spirit of oneness and togetherness among players.”

– BISHAN SINGH BEDI



Includes COMPETENCY-BASED QUESTIONS (CBQs)

Assertion-Reason Type Questions

Data-Based/Picture-Based/ Case-Based Questions

MCQs

Revised and Updated



A Textbook of

# Physical Education

Based on the latest CBSE syllabus

XII

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# COMMON POSTURAL DEFORMITIES

## Good Posture and its Advantages

Correct posture helps an individual to do different activities efficiently without getting tired soon. Without good posture, one cannot be physically fit and total efficiency may be compromised.



Figure 2.1 We should always follow good posture for better health.

## Advantages of Correct Posture

1. Boosting Self-confidence
2. Production of Graceful and Efficient Movements
3. Physical Fitness
4. Sociability
5. Saving Energy:
6. Avoiding Health Complications
7. Emotional Fulfillment
8. Reduction of Stress
9. Facilitation of Breathing
10. Loss of Weight and Fatigue

## Causes of Bad Posture

1. Poor Diet
2. Birth
3. Diseases
4. Accidents
5. Fatigue
6. Ill-fitting Clothes and Shoes
7. Lack of Proper Exercise
8. Poorly Designed
9. Carrying Heavy Load
10. Obesity
11. Using Computers
12. Psychological Factors

# POSTURAL DEFORMITIES AND THEIR CORRECTIVE MEASURES – KNOCK KNEE; FLAT FOOT; ROUND SHOULDERS; LORDOSIS, KYPHOSIS, BOW LEGS AND SCOLIOSIS

## Spinal Curvature

### *Kyphosis*

It is a condition where abnormal curvature of the spine occurs in the backward or posterior curve or reversal of forward curve, often causing depression of the chest. It is also known as round back or humpback.

Kyphosis is caused by malnutrition, illness, deficiency of pure air, insufficient exercises, rickets, carrying heavy loads, poorly shaped furniture, weak muscles, etc.

Kyphosis can be prevented by following correct postures while sitting, standing and walking from an early age. Dhanurasana is helpful in correcting this.

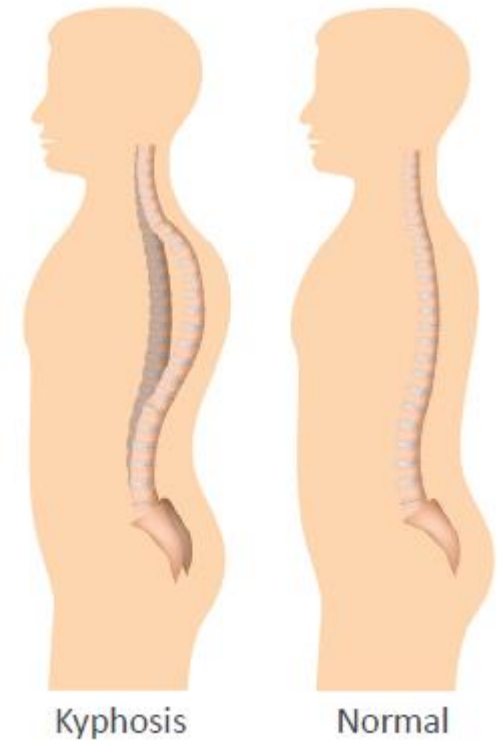


Figure 2.2

## **Lordosis**

Lordosis is the excessive inward curvature of spine resulting in a forward curve in the lumbar region.

Many factors result in lordosis. Some of them are an imbalanced diet, improper environment, improper development of muscles, obesity and diseases affecting vertebrae and spinal muscles like spondylolysis and osteoporosis.

To treat lordosis, stand straight with the feet and shoulder width apart. Take a balanced diet. Toe touching exercises, sit-ups and halasana should be performed regularly.

For performing head to knee exercises, remain seated on the mat with your legs stretched forward. Slowly, lower your head and try to touch your forehead to your knees. Hold to count of 10 and repeat it for 10 to 15 times.

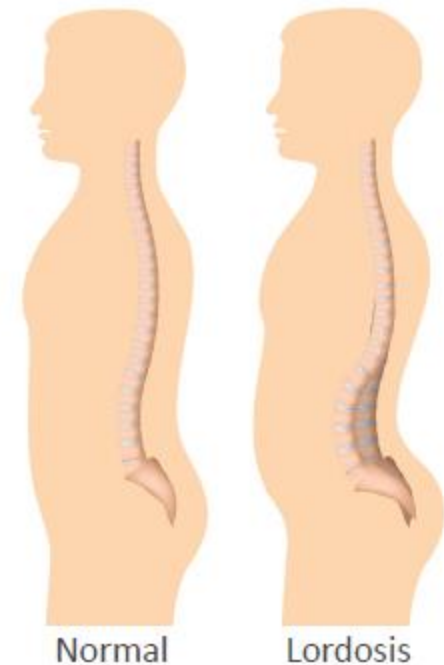


Figure 2.5



## **Scoliosis**

*Scoliosis is the abnormal lateral curvature of the spine. It can be bending, twisting or rotating of the spine.*

*The primary causes of scoliosis are diseases in the joints of bones, polio, rickets, infantile paralysis, cerebral palsy and juvenile osteoporosis or other diseases.*

*Scoliosis can be corrected by performing the following exercises:*

- *Hold a horizontal bar with your hands and rotate your body in a clockwise and anticlockwise direction.*
- *Lie down facing the ground, bend your elbow, and support your body with your toes. Squeeze your abs in and hold this position for 5 seconds.*

*Repeat these steps 10 times.*

- *Scoliosis can be cured by breaststroke or butterfly technique of swimming.*
- *Yoga has been one of the best practices to cure any ailment and also helps in enhancing overall physical strength. It maintains a balance for the body in case of scoliosis.*

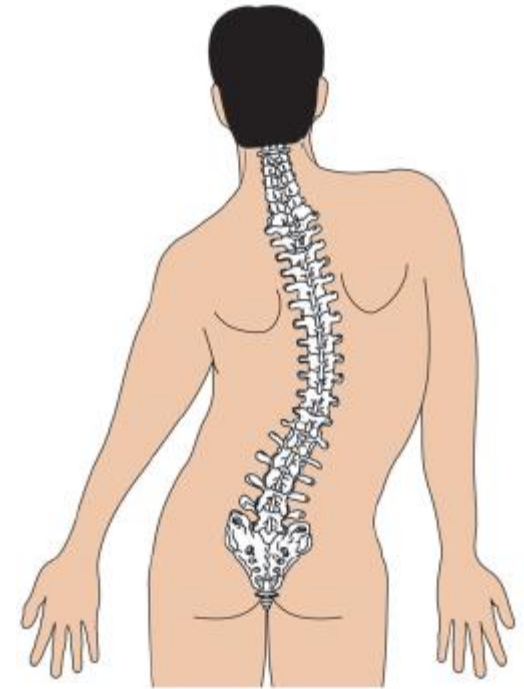


Figure 2.7 Scoliosis

## Flat Foot

Flat foot usually develops due to excessive stress on the feet. Weak muscles in feet, ankles and lower leg cannot bear body weight.

Flat foot can be taken care of with the following precautionary measures:

- Wearing comfortable shoes that fully support the arch and help stabilize the heel.
- Walking bare feet should be avoided.
- Losing excess weight can reduce the stress on feet. So, maintaining weight is also essential.

The exercises for the treatment of flat feet are:

- Heel walking involves walking on the heels with the whole body weight on the heels.
- Walking on the toes to strengthen the intrinsic muscles of the foot.
- Walking on the lateral border of the foot and many other exercises.

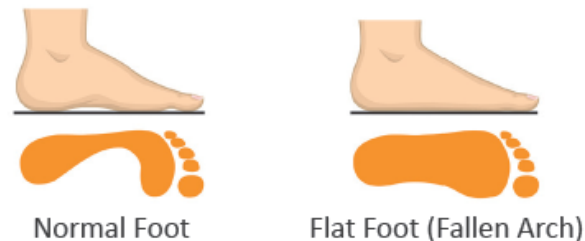


Figure 2.9 Flat Foot



## **Knock knee**

*It is a condition of postural deformity where the knees knock or rub together while walking or standing and the feet and ankles are far apart than normal. An individual with this postural deformity faces problems in walking and running.*

*Knock knees are common among the healthy children under the ages of six to seven years.*

*Problems associated with the development of bones and joints like rickets, osteoporosis and arthritis also contribute to knock knee.*

*To correct the deformities associated with knock knee, the following measures are recommended:*

- *Daily cycling for 20–30 minutes and horse riding would help naturally in making a gap between the knees.*
- *Keep a pillow between the legs while sleeping, walking or sitting daily for 15–20 minutes.*
- *Knock knees' special shoes, night braces and walking calipers may prevent knocking thus it will enhance posture while walking or running.*
- *Perform the padmasana and gomukhasana daily; etc.*



**Figure 2.11**  
Knock knee

## Bow Legs

Bow leg is simply a normal variation in leg appearance. It is a condition of physical deformity marked by an outward bowing of the leg, i.e. knees are wide apart and ankles are touching. Rickets is one of the main causes of bow legs. To avoid developing this condition, the following points should be kept in mind:

- Never force babies to walk at a very tender age.
- Appropriate body weight with respect to ages should be maintained, etc.

Corrective measures include:

- Vitamin D should be given in a recommended amount and in turn might help in correcting bow legs.
- Intake of well balanced diet is crucial for overall development and functioning of body.
- Some special shoes, casts and leg braces can be used for correcting bow legs in young children.
- Yoga can be a challenge who has bow legs. However with the help of a yoga strap, it can correct postures and straighten bow legs.



Figure 2.13  
Bow legs

## Round Shoulders

This postural abnormality is characterised by a drooping shoulder which appears round and a slight forward bending of the back. Heredity factors lead to rounded shoulders.

Precautionary measures that may be taken up to check rounded shoulders are:

- Never slouch while sitting and walking and always stand with flat back position.
- Those who have rounded shoulders should not wear tight fitting clothes and avoid high-heeled shoes.
- Avoid sitting on faulty furniture which is not comfortable.

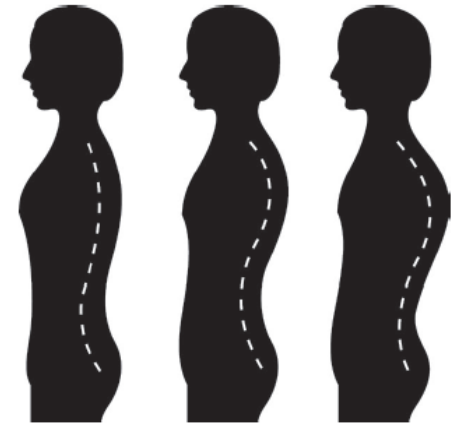


Figure 2.15 Round shoulders

To rectify the round shoulders deformity following exercises can help:

- Place the tips of fingers of both hands on shoulders and encircle the elbows in a clockwise and anticlockwise direction.
- Hang on the horizontal bar for some time.
- Perform yogic techniques especially chakrasana and dhanurasana on a regular basis.

## **Corrective Measures for Postural Deformities**

There are numerous physical activities or exercises which would be helpful in correcting postural deformities. Each specific postural deformity has its own corrective exercises.

***Exercises to Correct Kyphosis :*** Dhanurasana, Chakrasana, Roller foam exercise, etc.

***Exercises to Correct Lordosis:*** Halasana, Stability ball exercise, etc.

***Exercises to Correct Scoliosis:*** Tadasana, Trikonasana, Table pose, etc.

***Exercises to Correct Flat Foot:*** Marble picking exercise; Walking on spiky rubber ball; Skipping, etc.

***Exercises to Correct Knock Knee:*** Gomukhasana, Padmasana, etc.

***Exercises to Correct Bow Legs:*** Garudasana, Ardha Matsyendrasana, etc.

***Exercises to Correct Round Shoulders:*** Bhujangasana, Ustrasana, etc.

# **SPECIAL CONSIDERATION (MENARCHE AND MENSTRUAL DYSFUNCTION)**

## **Menarche**

The onset of the first menstrual bleeding or period in a female is called menarche. The average age for menarche ranges from 8–15 years.

Either delayed or early, menarche is a sign that the female body is developing and taking a definite step towards maturity. The female reproductive system is complex and quite susceptible to changes in its functioning. It has been found that intensive exercise and sports activities can cause abnormalities, like delayed menarche and amenorrhoea.

## Menstrual Dysfunction

The average menstrual cycle consists of 21–35 days and menstrual bleeding or periods occur during the first 2–7 days of the cycle. Each cycle ends on the first day of the next menstrual bleeding. Any abnormality or irregularity in this process is termed as menstrual dysfunction. It is reported that about 9 – 30% of women suffer from menstrual dysfunction of one form or the other.

Some common types of menstrual dysfunction are listed below:

- **Amenorrhoea**
- **Dysmenorrhoea**
- **Premenstrual Syndrome**
- **Menorrhagia or Heavy Periods**
- **Metrorrhagia**
- **Polymenorrhoea**
- **Oligomenorrhoea**
- **Postmenopausal Bleeding**



## **Menstruation and Sports Participation**

The majority of people believed that taking part in exercises and sports activities during menstruation causes serious damage to health and affects women's sports performance. Various arguments, discussions and studies were put forwarded on this subject. Women cannot overlook this reproductive process during training, planning schedules and preparing for competitions, etc. But it does not create drastic consequences or inhibit their performances. It is simply a normal cycle every healthy woman experiences during her reproductive years.

### **FEMALE ATHLETES TRIAD (OSTEOPOROSIS, AMENORRHOEA, EATING DISORDERS)**

It is a serious disorder of three interrelated medical conditions: energy deficiency with or without eating disorders; menstrual disturbances; and reduced bone mineral density which is likely to cause osteoporosis.

## **Osteoporosis**

It is a condition in which the density and strength of the bone is reduced, making it vulnerable to frequent fractures, like, stress fracture and other bone injuries. This is why osteoporosis is fatal to female athletes and their athletic careers.

## **Amenorrhoea**

Absence or cessation of menstrual periods in women during the reproductive years is called amenorrhoea.

There are two types of amenorrhoea:

1. Primary Amenorrhoea
2. Secondary Amenorrhoea

## **Eating Disorders**

Eating disorders are a range of psychological disorders in which a person's eating behaviour is abnormal.

## **Anorexia Nervosa**

Anorexia nervosa is an eating disorder in which the patients have an obsessive fear of gaining weight.

They have an unrealistic perception of body image and view themselves as overweight even when they are clearly underweight.

## **Bulimia Nervosa**

Bulimia nervosa, or simply bulimia, is an eating disorder in which the patient consumes a large quantity of food within a short period and subsequently ejects it from the body through vomiting, or with the help of laxatives or diuretics.

## SUMMARY

1. Correct posture enables us to do different activities efficiently without getting tired soon.
2. There are many advantages of correct postures, such as boosting self-confidence, promoting graceful movements, sociability, physical fitness, conservation of energy, avoiding health complications, facilitation of breathing, loss of weight, fatigue and so on.
3. Bad postures are caused by poor diet, genetics, birth defects, ill fitting clothes and high-heeled shoes, fatigue and so on.
4. Common postural deformities are spinal curvature, flat foot, knock knee, bow legs and round shoulder.
5. There are three types of abnormal spinal curvatures: kyphosis, lordosis and scoliosis.
6. In kyphosis, the abnormal curvature of the spine occurs in the backward or posterior curve or reversal of forward curve, often causing depression of the chest.
7. Lordosis is the excessive inward curvature of spine resulting in the forward curve in the lumbar region. Scoliosis is the abnormal lateral curvature of the spine. It can be bending, twisting or rotating of the spine.

## SUMMARY

**8.** In flat foot, the individual has flat foot and feels pain mainly in the heel area and experiences difficulty in standing and walking. It develops due to excessive stress on the feet.

**9.** Knock knee is a condition of postural deformity where the knees knock or rub together while walking or standing and the feet and ankles are far apart than normal. Lack of essential vitamins and minerals and degenerative bone diseases are common causes.

**10.** Bow legs is a condition of physical deformity marked by an outward bowing of leg, i.e. knees are wide apart and ankles are touching.

**11.** Round shoulders is characterised by a drooping shoulder which appears round and a slight forward bending of the back.

**12.** Postural deformities can be functional or structural. Functional postural deformities can be corrected with the help of physical exercises; structural postural deformities may require surgical procedures.

**13.** Menarche is the onset of menstrual bleeding in girls. It has been found that intensive exercise and sports activities can cause delayed menarche since they induce physiological stress.

**14.** Any abnormality or irregularity in the menstrual cycle is termed as menstrual dysfunction.

## SUMMARY

**15.** Female triad consists of amenorrhoea, osteoporosis and eating disorders. A female is likely to have the other two conditions if she is suffering from one condition of the triad.

**16.** Amenorrhoea can be primary or secondary and is caused by hormonal disturbances, intensive exercises, low body weight and insufficient calorie intake. Osteoporosis is caused by calcium deficiency, amenorrhoea and eating disorder.

**17.** Eating disorders occur when inadequate or excessive intake of food ends up harming the affected individual's well-being. Eating disorder may be either anorexia nervosa or bulimia nervosa.