

# 2

## Children and Women in Sports

### Fastrack Revision

#### ▶ Exercise Guidelines of WHO for Different Age Groups

WHO has developed following guidelines with guidance on the frequency, duration, intensity, type and total amount of physical activity needed for the prevention of Non-Communicable Diseases or Lifestyle Diseases.

##### ▶ Infants (Less than 1 year)

- Infants should be given 30 minutes in prone position (tummy time).
- During this period, encourage babies to be physically active by reaching and grasping, pulling and pushing, moving her/his head, body and limbs during daily routines, and during supervised floor play.

##### ▶ Toddlers (1-2 years of age)

- Toddlers should aim to do moderate-to-vigorous intensity physical activities for at least 180 minutes spread throughout the day.
- During this period, toddlers should be encouraged to undertake fundamental physical activity like walking, running, jumping, catching, throwing, leaping, etc.

##### ▶ Children (3-4 years)

- Children should aim to do spend at least 180 minutes in a variety of types of physical activities at any intensity, of which at least 60 minutes is spent in moderate to vigorous intensity physical activity.
- During this period, children should be encouraged to undertake light activity such as standing up, moving around, rolling and playing, as well as more energetic activities like skipping, hopping, running and jumping.

##### ▶ Children and Youth (5-17 Years)

- Children and Youth should aim to do moderate-to-vigorous intensity physical activities for at least 60 minutes in a day.
- During this period, children and youth should be encouraged to undertake aerobic, basic exercises for strengthening of muscles and fundamental activities (Jumping, running, throwing, turning, twisting, etc.).
- Regular physical activity helps to improve cardiorespiratory and muscular fitness, bone health, cardiovascular and metabolic health biomarkers and to reduce symptoms of anxiety and depression.

##### ▶ Adults (18-64 Years)

- Adults should aim to do moderate intensity physical activities for 150 to 300 minutes per week or vigorous intensity physical activities for 75 to 150 minutes per week.

- During this period, adults should be encouraged to undertake physical activities like walking, jogging, swimming, weight training, dancing, etc., occupational work, household work (car wash, gardening, etc.), games, sports, recreation, transportation (walking, cycling), planned exercises with or within family and community.
- Regular physical activity helps to lower the risk of heart diseases, blood pressure, stroke, Type 2 diabetes, metabolic syndrome, colon and breast cancers and depression, hip or vertebral fractures, and to develop higher level of cardiorespiratory muscular fitness and maintain healthy weight.

##### ▶ Older Adults (65 Years and Above)

- Older adults should aim to do moderate intensity physical activities for 150 to 300 minutes per week or vigorous intensity physical activities for 75 to 150 minutes per week.
- During this period, older adults should be encouraged to undertake physical activities like walking, jogging, swimming, weight training, dancing, etc., occupational work, household work (car wash, gardening, etc.), games, sports, recreation, transportation (walking, cycling), planned exercises with or within family and community.
- Regular physical activity helps to lower the risk of heart diseases, blood pressure, stroke, Type 2 diabetes, metabolic syndrome, colon and breast cancers and depression, hip or vertebral fractures, and to develop higher level of cardiorespiratory muscular fitness and maintain healthy weight. It lowers the risk of Non-Communicable Diseases, depression and cognitive decline.

▶ **Common Postural Deformities:** Postural deformities reduce the efficiency of individual to great extent and cause many more health problems. These can easily be corrected or prevented if early steps are taken. Some postural deformities are Knock knees, Flatfoot, Round shoulders, Lordosis, Kyphosis, Bow legs and Scoliosis.

- ▶ **Knock Knees:** Knock knees (also known as Genu valgum) is one of the major postural deformities. In this deformity, both the knees knock or touch each other in normal standing position. The gap between ankles goes on increasing. The individual faces difficulty in walking and running. He cannot walk or run in a proper manner. Owing to this deformity, they cannot be good players and even they are not selected in defence services.



➤ **Corrective Measures**

- Perform Padmasana and Gomukhasana regularly for some time.
- Cod liver oil may be beneficial in reducing this deformity up to some extent.
- Keep a pillow between the knees and stand erect for some time.
- Use of walking calipers may also be beneficial.
- Horse-riding is the best exercise for correction of knock knee.

➤ **Flatfoot:** It is also known as per Planus or fallen arches. It is a deformity of the feet. In this deformity, there is no arc in the foot and the foot is completely flat.

➤ **Corrective measures**

- Walking on heels.
- Activities like picking up marbles with toes, writing numbers in sand with toes etc.
- Walking on toes.
- Skipping rope.
- Jumping on toes for some time.
- Perform Vajrasana and Adho Mukh Svanasana regularly.

➤ **Round Shoulders:** It is a postural deformity in which the shoulders become round as they are drawn forward, the head is extended with the chin pointing forward.

➤ **Corrective Measures**

- Keep your tips of fingers on your shoulder and encircle your elbows in clockwise and anticlockwise direction for same number of times.
- Hold the hanging portion of horizontal bar for some time.
- Perform Chakrasana and Dhanurasana regularly.
- Perform stretching exercises like T-stretch, wall stretch, handclasp stretch and planks, etc.

➤ **Lordosis:** It is the inward curvature of the spine. Here, lumbar curve becomes more pronounced and front central position of pelvic region is tilted forward. It creates problem in standing and walking. It is also known as sway back.

➤ **Corrective Measures**

- Forward bending from hip level.
- Alternate toe touching.
- Sloop walking.
- Perform Dhanurasana and Halasana.
- Perform sit-ups regularly.

➤ **Kyphosis:** It is also known as hunch back or round upper back. It is a deformity of the spine in which there is an increase or exaggeration of the upper back.

➤ **Corrective measures**

- Perform Dhanurasana regularly.
- Swimming, gym ball exercises and exercises with bands.
- Perform Bhujangasana and Chakrasana.

➤ **Bow Legs:** It is a deformity opposite of knock knees. In this deformity, if there is a wide gap between the knees when standing with feet together. It is also known as Genu varum.

➤ **Corrective measures**

- Vitamin 'D' should be taken in required amount.
- Use of braces and modified shoes.
- Bow legs can be corrected by walking on the inner edge of the feet.
- Walking by bending the toes inward.

➤ **Scoliosis:** Postural adaptation of the spine in lateral position is called scoliosis. It means bending, twisting or rotating of spine in such a way that it makes a 'C' or an 'S' shape.

➤ **Corrective measures**

- Perform Trikonasana.
- Holding the horizontal bar with hands and swing your body to the left and right sides.
- Swimming by breast stroke technique.

▶ **Women Participation in Sports**

Women participation in sports helps them to stay fit and reduces chances of diseases. These benefits are as true for women as for their male counterparts. Some benefits are as follows:

➤ **Physical Benefits**

- Sports participation helps women to stay active which, in turn, reduces chances of lifestyle diseases such as diabetes, high blood pressure, obesity, etc. and enables them to live a healthy life.
- Sports help them to increase bone density and stronger bones.
- Women has more chances of being obese than men, regular participation in sports helps them to stay in shape and stay fit.

➤ **Psychological Benefits**

- Sports persons, men and women, who participate in sports can manage their stress better than those who do not participate in the sports.
- When a woman participates in sports and wins, it gives not just her, but other women sports persons a sense of achievement and really boost their confidence.
- One of the best quality about sports is that it inculcates or bring out the leadership skills or qualities of an individual.

➤ **Social Benefits**

- Women who participate in sports learn the skills of working in coordination with others.
- Sports helps women participants to be more vocal and expressive.
- Women learn to cooperate with each other when they are playing on the field.

➤ **Menarche:** Menarche is the first menstrual cycle or first menstrual bleeding in females. From both, the social and the medical perspectives, it is considered the central event of female puberty, as it signals the possibility of fertility. Girls experience menarche at different ages but usually it occurs between the ages of 8 and 15 years.

▶ **Menstrual Dysfunction**

➤ Menstrual dysfunction is an abnormal condition in a woman's menstrual cycle. Normal range of the menstruation cycle is 21 to 35 days. If it happens earlier than 21 days or after more than 35 days, then

it's a problem. Other menstrual problems include missing three or more periods, menstrual flow heavier or lighter in comparison with usual, cycle happening longer than seven days, any pain, cramping or vomiting during period, bleeding after menopause, etc. Causes of abnormal menstrual cycles or menstrual order are: overweight, stress, dietary disorder, disease, sudden change in exercise schedule, travel, other medical complications, etc.

➤ There are different types of menstrual disorders which are given below:

- **Pre-menstrual Syndrome:** Pre-menstrual Syndrome includes unpleasant or uncomfortable symptoms during the cycle. These may include depression, anxiety, irritation, headache, fainting, vertigo, infection, etc., and may last from a few hours to few days. Symptoms Such symptoms may be reduced through moderate exercise, taking a balanced diet, having a good sleep and rest.
- **Amenorrhea:** Amenorrhea is known as missed periods or absence of a normal monthly period or menstrual cycle. There are two types of amenorrhea.
  - **Primary amenorrhea:** Menstruation cycle does not begin at puberty.
  - **Secondary amenorrhea:** It happens when menstruation for three months or more. This is the most common type of amenorrhea.
- **Dysmenorrhea:** When menstruation happens with severe pain or frequent menstrual cramps, the condition is called dysmenorrhea. Symptoms associated with dysmenorrhea may be cramping in lower abdomen, low back pain, pain in legs, nausea, fatigue, weakness, etc.
- **Menorrhagia:** Menorrhagia is characterised by heavy and long term or continuous menstrual bleeding.
- **Polymenorrhea:** Polymenorrhea is a term used to describe a menstrual cycle that is shorter than 21 days.

- **Oligomenorrhea:** Oligomenorrhea is infrequent menstruation. More strictly, it is menstrual periods occurring at intervals of greater than 35 days.
- **Metrorrhagia:** Metrorrhagia refers to missed, delayed or erratic periods or abnormal bleeding patterns.
- **Postmenopausal bleeding:** Postmenopausal bleeding is bleeding that occurs after one year of menopause or after a woman has stopped having menstrual cycles due to menopause.

➤ **Female Athletes Triad:** It is a combination of three related conditions: **Amenorrhea, Osteoporosis and Eating Disorders.** It is observed that females who take part in intense sports activities are at risk of female athlete triad.

- **Osteoporosis:** It is a skeletal disorder characterised by weakening of bones due to reduced bone density, leading to increase in fracture risk. Low estrogen levels and low calcium and vitamin D intake can lead to osteoporosis.
- **Amenorrhea:** It is a menstrual disorder in females where girls of 16 years and above either never began menstruating or there is absence of menstrual period for 3 months or more in a woman with a history of normal menstruation. Intensive training, hormonal changes and insufficient intake of calories enhance the chances of amenorrhea.
- **Eating Disorders:** It refers to the habit of over-eating or under-eating of food by an individual due to mental stress or illness, causing disturbances in the regular diet schedule of the individual. There are following types of eating disorders:
  - **Anorexia Nervosa:** It is an eating disorder characterised by self-starvation and excessive weight loss. They consider themselves overweight even though they are underweight and also vomit or use laxatives to reduce weight.
  - **Bulimia Nervosa:** It is an eating characterised by eating a large amount of food in a short period of time, followed by self-induced vomiting or other forms of purging in order not to gain weight.



## Practice Exercise

### Multiple Choice Questions ↘

- Q 1. Minimum duration of activity should be ..... per week at vigorous intensity in adults above 65 years of age.
- |                |                |
|----------------|----------------|
| a. 75 minutes  | b. 150 minutes |
| c. 300 minutes | d. 450 minutes |

- Q 2. Which postural deformity is shown in the illustration?  
(CBSE 2021 Term-1)



- |             |               |
|-------------|---------------|
| a. Bow Leg  | b. Knock Knee |
| c. Flatfoot | d. Round Foot |

- Q 3. 'Sway Back' is also known as: (CBSE 2021 Term-1)
- |              |                   |
|--------------|-------------------|
| a. Lordosis  | b. Kyphosis       |
| c. Scoliosis | d. Round shoulder |

- Q 4. Kyphosis is also known as .....  
(CBSE SQP 2023-24)
- |                   |               |
|-------------------|---------------|
| a. Hollow Back    | b. Hunch Back |
| c. Both a. and b. | d. Curve Back |

- Q 5. Kyphosis is a deformity found in: (CBSE 2021 Term-1)
- |                    |                  |
|--------------------|------------------|
| a. shoulders       | b. lumbar region |
| c. thoracic region | d. hips          |

**Q 6. Lateral curvature or sideways curvature of spine is related to:** (CBSE 2021 Term-1)  
 a. Round shoulder      b. Kyphosis  
 c. Knock knee          d. Scoliosis

**Q 7. Which of the following is not a spinal curvature deformity?** (CBSE SQP 2021 Term-1)  
 a. Lordosis              b. Scoliosis  
 c. Kyphosis              d. Flatfoot

**Q 8. Which of the following asana should be performed for curing Kyphosis?**  
 a. Trikonasana          b. Bhujangasana  
 c. Pavanmuktasana      d. Tadasana

**Q 9. Match List I with List II and select the correct answer from the codes given below:** (CBSE 2023)

List-I	List-II
A. Knock knee	(i) Increase or exaggeration of backward curve
B. Kyphosis	(ii) Wide gap between the knees when standing with feet together
C. Lordosis	(iii) Knees touch each other in normal standing position
D. Bow legs	(iv) Inward curvature of the spine

- |          |      |      |       |          |      |      |       |
|----------|------|------|-------|----------|------|------|-------|
| A        | B    | C    | D     | A        | B    | C    | D     |
| a. (iii) | (i)  | (ii) | (iv)  | b. (i)   | (ii) | (iv) | (iii) |
| c. (ii)  | (iv) | (i)  | (iii) | d. (iii) | (i)  | (iv) | (ii)  |

**Q 10. Scoliosis is a postural deformity related with:** (CBSE 2020)

- a. foot                      b. leg  
 c. vertebral column      d. hand

**Q 11. Halasana is used for curing which of the following deformities?** (CBSE SQP 2021 Term-1)

- a. Kyphosis              b. Scoliosis  
 c. Lordosis              d. Flatfoot

**Q 12. What is the name of the postural deformity caused due to increase in the curve at the lumbar region?**

- (CBSE SQP 2021 Term-1)  
 a. Knock knees          b. Bow legs  
 c. Kyphosis              d. Lordosis

**Q 13. Sandy is diagnosed with postural adaptation of the spine in lateral direction. The curve is identified as convexity right. It happened due to Sandy's underdeveloped legs and carrying heavy loads on one side only.**

**What kind of postural deformity doctors found in Sandy?** (CBSE SQP 2021 Term-1)

- a. Scoliosis              b. Kyphosis  
 c. Bow legs              d. Flatfoot

**Q 14. Asanas show in the picture are performed to correct:**



(CBSE SQP 2021 Term-1)

- a. Kyphosis and Lordosis  
 b. Round shoulder and Kyphosis  
 c. Scoliosis and Lordosis  
 d. Lordosis and Round Shoulders

**Q 15. Match the following postural deformities with their corrective Asanas:**

A. Flatfoot	(i)	
B. Scoliosis	(ii)	
C. Knock-knee	(iii)	
D. Lordosis	(iv)	

(CBSE SQP 2021 Term-1)

- |         |       |       |       |
|---------|-------|-------|-------|
| A       | B     | C     | D     |
| a. (i)  | (iv)  | (iii) | (ii)  |
| b. (ii) | (iii) | (i)   | (iv)  |
| c. (ii) | (i)   | (iii) | (iv)  |
| d. (i)  | (iv)  | (ii)  | (iii) |

**Q 16. Which postural deformity has convexities right or left?** (CBSE SQP 2021 Term-1)

- a. Flatfoot                      b. Knock knees  
 c. Kyphosis                      d. Scoliosis

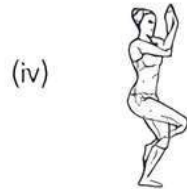
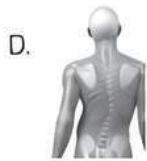
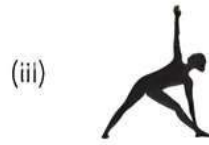
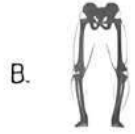
**Q 17. Posture plays a very significant role in our daily activities. Correct posture means the balancing of the body in an accurate and proper manner. Various types of postural deformities can be identified in individuals.** (CBSE SQP 2021 Term-1)



**From the above given picture, the deformities seen on the left most is caused due to deficiency of which nutrient?**

- a. Iron                      b. Calcium  
 c. Vitamin D              d. Both b. and c.

Q 18. Match the postural deformities with their remedial activity: (CBSE SQP 2021 Term-1)



- A B C D  
a. (i) (iii) (ii) (iv)  
c. (I) (III) (IV) (II)

- A B C D  
b. (I) (IV) (III) (II)  
d. (IV) (II) (III) (I)

Q 19. Psychological benefits of women participation in sports includes:

- cooperation
- emotion control
- physical fitness
- communication

Q 20. Menarche is defined as the: (CBSE 2023, 20)

- ending of menstrual period in women
- beginning of menstrual period in women
- time of pregnancy
- beginning of pregnancy

Q 21. If the menstruation cycle does not begin at puberty, the condition is called .....

(CBSE SQP 2023-24)

- Primary amenorrhoea
- Secondary amenorrhoea
- Oligomenorrhoea
- Dysmenorrhoea

Q 22. Weakening of bones due to loss of bone density and improper bone formation is: (CBSE SQP 2022-23)

- Amenorrhoea
- Anorexia nervosa
- Osteoporosis
- Lordosis

Q 23. Eating large amounts of food at very short intervals of time is known as:

- Anorexia nervosa
- Osteoporosis
- Bulimia nervosa
- None of the above

Q 24. In which type of Anorexia does an individual lose weight by taking laxatives or diuretics?

- Bulimia nervosa
- Purging type
- Restricting type
- Anorexia nervosa



## Assertion & Reason Type Questions

Directions (Q. Nos. 25-29): There are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the appropriate option from the options given below:

- Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).
- Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
- Assertion (A) is true, but Reason (R) is false.
- Assertion (A) is false, but Reason (R) is true.

Q 25. Assertion (A): Kyphosis is an outward curve of vertebral column at thoracic region.

Reason (R): Horse-Riding is the best exercise for remedying Kyphosis.

Q 26. Assertion (A): Majorities of babies are born with flat feet but as they grow or get involved in physical activities the arch in the foot develops.

Reason (R): Foot or ankle injury due to obesity, wearing improper shoes and carrying heavy weight for long time are the causes of flat foot.

Q 27. Assertion (A): Postural deformities can be cured with the help of the different asanas.

Reason (R): Round shoulders can be cured by performing Chakrasana and Dhanurasana regularly.

Q 28. Assertion (A): Menstrual dysfunction include missing three or more periods, menstrual flow heavier or lighter in comparison with usual, cramping etc.

Reason (R): Menstrual dysfunction is common in sports women.

Q 29. Assertion (A): The female athlete triad is a combination of Amenorrhoea, Osteoporosis and Scoliosis.

Reason (R): Insufficient intake of calcium and vitamin D in the diet is the main cause of Osteoporosis.

## Answers

- (a) 75 minutes
- (c) Flatfoot
- (a) Lordosis
- (b) Hunch Back
- (c) thoracic region
- (d) Scoliosis
- (d) Flatfoot
- (b) Bhujangasana
- (d) A-(iii) B-(I) C-(iv) D-(II)
- (c) vertebral column
- (c) Lordosis
- (d) Lordosis
- (a) Scoliosis
- (b) Round shoulder and Kyphosis
- (d) A-(I) B-(IV) C-(II) D-(III)
- (d) Scoliosis
- (d) Both b. and c.
- (b) A-(I) B-(IV) C-(III) D-(II)

19. (b) emotion control
20. (b) beginning of menstrual period in women
21. (a) Primary amenorrhea
22. (c) Osteoporosis
23. (c) Bulimia nervosa
24. (d) Anorexia Nervosa
25. (c) Assertion (A) is true, but Reason (R) is false.
26. (b) Both Assertion (A) and Reason (R) are true but Reason (R) is not the correct explanation of Assertion (A).
27. (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
28. (b) Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).
29. (d) Assertion (A) is false, but Reason (R) is true.

### Case Study Based Questions

#### Case Study 1

Read the following passage and answer the following questions.

Posture plays a very significant role in our daily activities. Correct posture means the balancing of body in accurate and proper manner. Various types of postural deformities can be identified in individuals.



Person (i)



Person (ii)



Person (iii)

- Q 1. From the above given picture, the deformities seen in person (i) is caused due to deficiency of:
  - a. iron
  - b. calcium
  - c. vitamin-D
  - d. Both b. and c.
- Q 2. Walking on the inner edge of the feet can be a remedy for:
 

a. person (i)	b. person (ii)
c. person (iii)	d. All of these
- Q 3. Person (ii) is suffering from:
  - a. round shoulders
  - b. knock knees
  - c. bow legs
  - d. elephant foot
- Q 4. Performing this asana regularly can be a remedy for Person (ii):
 

a. Padmasana	b. Tadasana
c. Vajrasana	d. Halasana

#### Answers

1. (d)    2. (a)    3. (b)    4. (c)

#### Case Study 2

Read the following passage and answer the following questions.

Apama, a student of class XII, used to read books in the school library. One day she was studying about female athlete triad and finds that women participation in sports leads to various problems during pregnancy, menarche, menstruation and menopause.

Q 1. Amenorrhea is a condition of:

- a. menstrual disorder
- b. eating disorder
- c. psychological disorder
- d. postural disorder

Q 2. Osteoporosis refers to:

- a. habit of over-eating or under-eating.
- b. the gap in the menstrual cycle.
- c. decreased bone material density.
- d. exaggeration of posterior curve.

Q 3. Choose the incorrect statement from the following:

- a. amenorrhea is of two types.
- b. athletes affected by Amenorrhea practice self-induced vomiting.
- c. abnormal reproductive hormonal changes may lead to Amenorrhea in athletes.
- d. amenorrhea is the cessation of woman's menstrual cycle for more than three months.

#### Answers

1. (a)    2. (c)    3. (d)



#### Very Short Answer Type Questions

Q 1. State the common postural deformities. (CBSE 2017)

Ans. Some common postural deformities are flatfoot, knock knee, bow legs and round shoulders.

Q 2. Suggest two exercises for correcting flatfoot.

(CBSE 2016)

Ans. The following exercises should be done to correct flatfoot:

- (i) Perform Vajrasana.
- (ii) Walking on inner and outer side of feet.
- (iii) Jumping on toes for sometime.
- (iv) Perform towel scrunch.

Q 3. What is Lordosis? Explain.

(CBSE 2017)

Ans. Lordosis, also known as swayback, is a postural deformity of the spine. It is the inward curvature of the spine in the lumbar region.

#### COMMON ERROR

Most of the students get confused between lordosis and scoliosis and define scoliosis.

Q 4. Which type of deformity is 'Kyphosis'? (CBSE 2019)

Ans. Kyphosis is a deformity of the spine in which there is an increase or exaggeration of a backward curve, causing hunching of the back.

**Q 5. Explain the term 'Menarche'.** (CBSE 2016)

**Ans.** Menarche is the first menstrual cycle or first menstrual bleeding in females. It usually occurs between the age of 9 to 15 years.

**Q 6. What is Menopause?** (CBSE 2017)

**Ans.** Menopause is a natural event where menstrual cycles permanently cease in women of age between 45-55 years due to the natural loss of ovarian function from aging.

**Q 7. Among females, what type of menstrual Dysfunction is called Amenorrhea?** (CBSE 2019)

**Ans.** Amenorrhea is a menstrual disorder in females where girls of 16 years and above either never began menstruating or there is an absence of menstrual period for three months or more in a woman with a history of normal menstruation.



## TIP

Female Athletes Triad (Osteoporosis, Amenorrhea and Eating disorders) is very important from examination point of view.

**Q 8. What do you mean by 'Bulimia'?** (CBSE 2016, 18, 19)

**Ans.** Bulimia, also known as bulimia nervosa, is an eating disorder characterised by eating a large amount of food in a short amount of time, followed by self-induced vomiting or other forms of purging in order not to gain weight

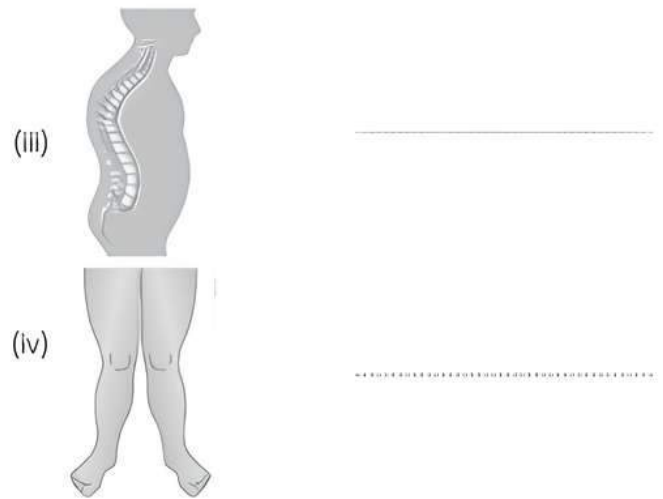
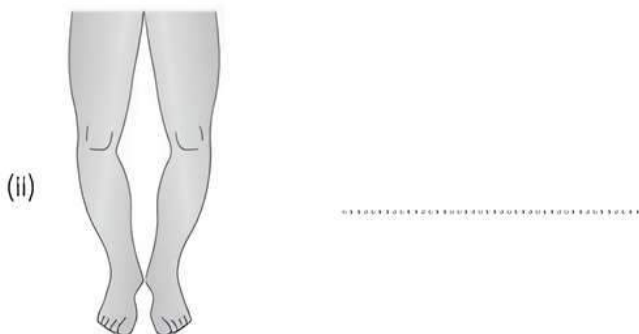
## COMMON ERROR

Many students get confused between the different types of eating disorders.



## Short Answer Type-I Questions

**Q 1. Identify the deformities and give their names:**



- Ans.** (i) Scoliosis  
(ii) Bow legs  
(iii) Kyphosis  
(iv) Knock knee

**Q 2. List the physical activities that can be undertaken to correct knock knee deformity.**

**Ans.** The deformity of knock knee can be corrected with the help of following exercises:

- (i) Horse-riding is the best exercise for correction of knock knee.
- (ii) Keep a pillow between the knees and stand erect for sometime.
- (iii) Perform Padmasana and Gomukhasana regularly for sometime every day.
- (iv) Use of walking calipers may also be beneficial.

**Q 3. Suggest any two free hand exercises for correcting round shoulders?**

**Ans.** Exercises for correcting round shoulders are:

- (i) Keep your tips of fingers on your shoulder and encircle your elbows in clockwise and anticlockwise direction for same number of times.
- (ii) Hold the hanging position of horizontal bar for some time.
- (iii) Perform Chakrasana and Dhanurasana regularly.

(Any two)

**Q 4. Mention the corrective measures related to lordosis.**

**Ans.** The following exercises should be performed to correct lordosis:

- (i) Perform sit-ups regularly.
- (ii) Perform Panchmottanasana and Halasana.
- (iii) Forward bending from hip level.
- (iv) Alternate toe touching.

**Q 5. (i) What is menstrual dysfunction?**

**(ii) What is female athlete triad?**

**Ans.** (i) Menstrual dysfunction is a disorder or irregularity in women's menstrual cycle.

(ii) Female athlete triad is a syndrome of three interrelated conditions seen in adult female athletes who aren't meeting their energy requirements, which ultimately leaves them undernourished.



## Short Answer Type-II Questions

**Q 1. Write in brief the corrective measures of Bow Leg, Knock Knee and Flatfoot.** (CBSE SQP 2023-24)

**Ans. Corrective Measures of Bow Leg:**

- (i) Vitamin 'D' should be taken in required amount.
- (ii) Use of braces and modified shoes.
- (iii) Bow legs can be corrected by walking on the inner edge of the feet.
- (iv) Walking by bending the toes inward.

**Corrective Measures of Knock Knee:**

- (i) Perform Padmasana and Gomukhasana regularly for some time.
- (ii) Cod liver oil may be beneficial in reducing this deformity up to some extent.
- (iii) Keep a pillow between the knees and stand erect for some time.
- (iv) Use of walking calipers may also be beneficial.
- (v) Horse-riding is the best exercise for correction of knock knee.

**Corrective Measures of Flatfoot:**

- (i) Walking on heels.
- (ii) Activities like picking up marbles with toes, writing numbers in sand with toes etc.
- (iii) Walking on toes.
- (iv) Skipping rope.
- (v) Jumping on toes for some time.
- (vi) Perform Vajrasana and Adho Mukha Svanasana regularly.

**Q 2. What do you mean by 'Round Shoulders'? Suggest any four physical activities for correcting round shoulders.** (CBSE 2023, 19)

**Ans.** Round shoulders is a postural deformity in which the shoulders become round as they are drawn forward, the head is extended with the chin pointing forward.

Physical activities for correcting round shoulder are as follows:

- (i) Keep your tips of fingers on your shoulder and encircle your elbows in clockwise and anticlockwise direction of same number of times.
- (ii) Hold the hanging position of horizontal bar sometime.
- (iii) Perform Chakrasana and Dhanurasana regularly.
- (iv) Sit on a chair, rest the back against it, pull the shoulders backward and see upwards.

**Q 3. Write about the deformities of spinal curvature.** (CBSE 2016)

**Ans.** Spinal curvature deformities are related to the spine. There are three types of spinal curvature:

- (i) **Lordosis:** It is the inward curvature of the spine. It is an increased forward curve in the lumbar region. It creates problem in standing and walking.

(ii) **Kyphosis:** It is a postural deformity in which there is an increase of exaggeration of a backward curve or decrease of a forward curve.

(iii) **Scoliosis:** Postural adaptation of the spine in lateral position is called scoliosis. It means bending, twisting or rotating.

**Q 4. What is the meaning of female athletes Triad? Explain any two in brief.** (CBSE SQP 2022-23)

**Ans. Female Athletes Triad:** It is a combination of three related conditions: **Amenorrhea, Osteoporosis and Eating Disorders.** It is observed that females who take part in intense sports activities are at risk of female athlete triad.

(i) **Osteoporosis:** It is a skeletal disorder characterised by weakening of bones due to reduced bone density, leading to increase in fracture risk. Low estrogen levels and low calcium and vitamin D intake can lead to osteoporosis.

(ii) **Amenorrhea:** It is a menstrual disorder in females where girls of 16 years and above either never began menstruating or there is absence of menstrual period for 3 months for more in a woman with a history of normal menstruation. Intensive training, hormonal changes and insufficient intake of calories enhance the chances of amenorrhea.

**Q 5. Write in brief about Osteoporosis. What are the causes of Osteoporosis in women?** (CBSE 2017, 19)

**Ans.** Osteoporosis is a skeletal disorder characterised by weakening of bones leading to bone fragility and increase in fracture risk.

**Causes of Osteoporosis:**

(i) **Low Calcium and Vitamin D Intake:** Low calcium intake contributes to diminished bone density and bone loss, so developing osteoporosis. In addition to calcium, vitamin D should also be included in diet because it is essential for absorbing calcium in our body.

(ii) **Amenorrhea:** Women suffering from amenorrhea for more than six months are likely to face osteoporosis because secretion of estrogen is decreased in this condition. Estrogen is necessary for the absorption of calcium in our body.

**Q 6. Write briefly about the prevention and management of 'Anorexia'.** (CBSE 2019)

**Ans.** Anorexia can be prevented by:

- (i) encouraging people to inculcate a positive self-esteem and body image.
- (ii) making a healthy approach towards eating nutritious food and exercising habits.
- (iii) making students aware about body shape and size, and must not consider 'being thin' as perfect bodies.
- (iv) staying away from people who induce anorexia.





Management of Anorexia can be accomplished by:

- (i) **Restoring Healthy Weight:** An affected person cannot recover from anorexia without restoring appropriate body weight.
- (ii) **Psychotherapy:** A psychologist can play an effective role in helping the affected person to return to a healthy weight.



## Long Answer Type Questions

**Q 1. What are the causes of 'Flatfoot' and 'Knock Knees'? Suggest physical activities as corrective measures for these deformities.** (CBSE 2017,19)

**Ans. Causes of Flatfoot:**

- (i) The main cause of flatfoot is weak muscles.
- (ii) Use of poor quality footwear and carrying heavy weight for a longer period are also the causes of flatfoot.

**Causes of Knock Knee:**

- (i) Lack of balanced diet, especially vitamin D and calcium.
- (ii) It may also be caused due to flatfoot and carrying heavy weight at early age.

**Corrective measures for Flatfoot:**

- (i) Walking on heels and toes.
- (ii) Walking on inner and outer side of feet.
- (iii) Perform Vajrasana and Tadasana regularly.

**Corrective measures for Knock Knee:**

- (i) Perform Padmasana and Gomukhasana regularly.
- (ii) Horse-riding to be done regularly, as it is one of the best exercise for correcting this deformity.
- (iii) Keep a pillow between the knees and stand erect for some time.



## TIP

The students must prepare about the causes and corrective measures of various postural deformities efficiently.

**Q 2. Suggest exercises as corrective measures for Kyphosis and Bow legs.**

**Ans. Corrective Measures for Kyphosis:**

- (i) Perform Dhanurasana regularly.
- (ii) Bend your head backward in standing position.
- (iii) Foam roll is used to release tension in the thoracic region.
- (iv) Hold arms at the shoulder level and bend your elbows.

**Corrective Measures for Bow Legs:**

- (i) Balanced diet should be taken.
- (ii) Vitamin D should be taken in required amount.
- (iii) It can be corrected by walking on the inner edge of the feet.
- (iv) One should walk by bending the toes inward.
- (v) Use of braces and modified shoes.

**Q 3. Discuss in detail about 'Female Athletes Triad'.**

(CBSE 2016)

**Ans.** The 'Female Athlete Triad' is a syndrome of three related conditions seen in female athletes who aren't meeting their energy requirement, which ultimately leaves them undernourished.

The three components of female athlete triad include:

(i) **Osteoporosis:** It is a skeletal disorder characterised by weakening of bones due to reduced bone density, leading to increase in fracture risk. Low estrogen levels and low calcium and vitamin D intake can lead to osteoporosis.

(ii) **Amenorrhea:** It is a menstrual disorder in females where girls of 16 years and above either never began menstruating or there is absence of menstrual period for 3 months or more in a woman with a history of normal menstruation. Intensive training, hormonal changes and insufficient intake of calories enhance the chances of amenorrhea.

(iii) **Eating Disorders:** It refers to the habit of over-eating or under-eating of food by an individual due to mental stress or illness, causing disturbances in the regular diet schedule of the individual. There are following types of eating disorders:

(a) **Anorexia Nervosa:** It is an eating disorder characterised by self-starvation and excessive weight loss. They consider themselves overweight even though they are underweight and also vomit or use laxatives to reduce weight.

(b) **Bulimia Nervosa:** It is an eating disorder characterised by eating a large amount of food in a short period of time, followed by self-induced vomiting or other forms of purging in order not to gain weight.

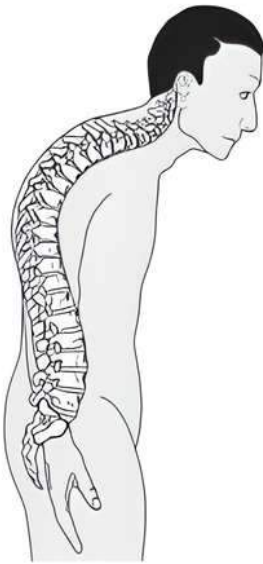




# Chapter Test

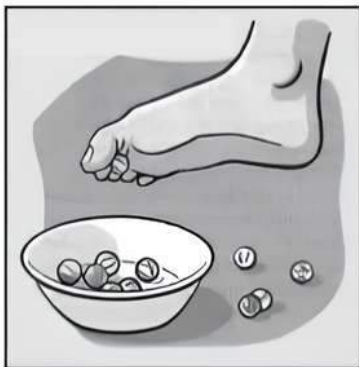
## Multiple Choice Questions

- Q 1. What is the cause of Osteoporosis in women?  
 a. High blood pressure  
 b. Menarche  
 c. Excessive exercise  
 d. Lack of calcium and vitamin D
- Q 2. If the menstruation cycle is shorter than 21 days, the condition is caused:  
 a. Oligomenorrhea      b. Polymenorrhea  
 c. Metrorrhagia        d. Dysmenorrhea
- Q 3. Which asana should be done regularly to cure this deformity?



- a. Trikonasana              b. Vajrasana  
 c. Halasana                 d. Dhanurasana

- Q 4. Which of the following is not for knock knee?  
 a. Regular horse riding  
 b. Keeping a pillow between the knees and stand erect for some time  
 c. Performing Bhujangasana and Chakrasana regularly  
 d. Using walking calipers
- Q 5. Which of the following deformity can be treated by doing the exercise given in the below picture?



- a. Knock knee              b. Bow legs  
 c. Kyphosis                 d. Flatfoot

## Assertion and Reason Type Questions

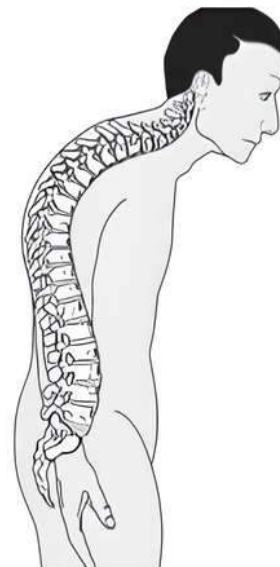
**Directions (Q. Nos. 6-7):** There are two statements marked as Assertion (A) and Reason (R). Read the statements and choose the appropriate option from the options given below:

- a. Both Assertion (A) and Reason (R) are true and Reason (R) is the correct explanation of Assertion (A).  
 b. Both Assertion (A) and Reason (R) are true, but Reason (R) is not the correct explanation of Assertion (A).  
 c. Assertion (A) is true, but Reason (R) is false.  
 d. Assertion (A) is false, but Reason (R) is true.
- Q 6. **Assertion (A):** Bow legs is opposite to knock knee position.  
**Reason (R):** Bow legs can be a sign of an underlying disease, such as rickets or arthritis.
- Q 7. **Assertion (A):** Menarche is the process in which female reproduction system matures and the body prepares itself for potential pregnancy.  
**Reason (R):** The time when sexual maturity is reached is called Menopause.

## Case Study Based Question

Q 8. Read the following passage and answer the following questions.

Sheethal spent her weekend checking the health status of all the security guards of her huge gated community as a part of project work assigned by PE teachers. She found out that more than half of them have shown a significant deformity in the upper part of their vertebral column.



(i) The term used to define this deformity is .....

- a. Lordosis
- b. Scoliosis
- c. Both a. and b.
- d. Kyphosis

(ii) This deformity is mainly caused due to .....

- a. Osteoporosis
- b. Malnutrition
- c. Unstable furniture
- d. All of the above

(iii) The asana/s which helps in rectifying such condition/ is/are .....

- a. Chakrasana
- b. Bhujangasana
- c. Both a. and b.
- d. Halasana

### Very Short Answer Type Questions

Q 9. Define Postmenopausal bleeding.

Q 10. Suggest two exercises for correcting Round shoulders.

### Short Answer Type-I Questions

Q 11. Write a short note on Menarche.

Q 12. Explain the causes and remedies of Bow legs.

Q 13. Briefly explain the types of eating disorders.

### Short Answer Type-II Questions

Q 14. What do you mean by Flatfoot? Write down the causes and precautions to avoid it.

Q 15. Explain various types of disorders related to menstrual dysfunction.

Q 16. Write three corrective measures taken to correct Scoliosis.

### Long Answer Type Questions

Q 17. Explain any five postural deformities with their corrective measures.

Q 18. What is 'Female Athletes Triad' ? Explain.