

1. Development of physical fitness

Objectives

- (1) To get introduced to exercises for physical fitness development.
- (2) To be cognizant of activities that contribute to the development of physical fitness.
- (3) To gather information on scientific training methods to enhance physical fitness.
- (4) To motivate students to improve physical fitness through exercise activities and training methods.

Physical fitness is not just a theoretical subject to be read about, but is a subject to be experienced. This experience to be effective, it is important to understand some concepts related to physical fitness. Physical fitness development is not the need of players alone. Developing and maintaining physical fitness is a challenge, but not impossible. You have to dedicate some time for this during the day and take action. It does not require a lot of money or space, but only time and will power. It is important to understand that there is no shortcut to developing physical fitness.

Physical fitness consists of various components. A single activity alone is not sufficient to develop all these components. It is imperative to have a variety of activities to develop the different physical fitness components

Physical Fitness is identified as

- Health Related Physical Fitness
- Skill Related Physical Fitness

Health Related Physical Fitness components

- (1) Cardiovascular endurance
- (2) Muscular strength
- (3) Muscular endurance
- (4) Flexibility
- (5) Body composition

Skill Related Physical Fitness components

- (1) Speed
- (2) Power
- (3) Agility
- (4) Co-ordination
- (5) Balance
- (6) Reaction time

A few activities that help to develop the above components are as follows:

1. **Cycling** : Cycling is an effective activity for enhancing endurance and stamina. It is also an effective activity for reducing fat levels and improving balance and co-ordination in the body. The use of bicycle for daily tasks will provide exercise to the body, save for travelling money and help reduce pollution. Likewise, organizing bicycle trips to nearby places will provide stability and fitness for recreation.

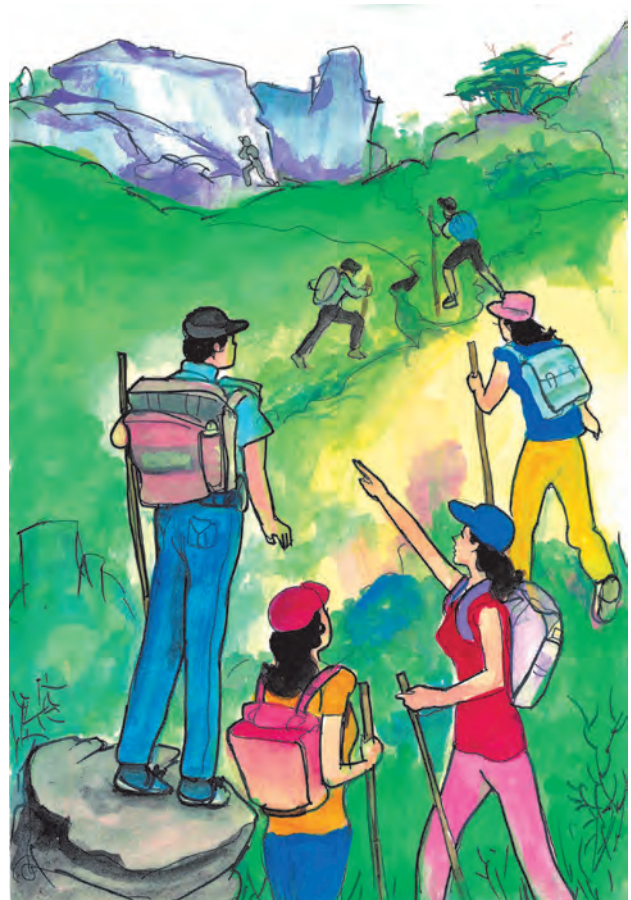


2. Rhythmic movements : Currently it is very popular among young generation because rhythmic activities are based on music and so avoids boredom. Performing rhythmic movements step-wise for a period of 20 – 30 minutes will help to improve fitness variables. Different rhythmic activities include aerobics, Zumba, rhythmic gymnastics. All these activities help to increase the endurance level of the body.



3. Games : Participating regularly in games of your choice will help to promote health and physical fitness. It helps to reduce academic stress, and is important to the mental and emotional aspects of fitness. Regular participation in various games such as kabaddi, kho-kho, football, basketball, table tennis, badminton, cricket, wrestling, etc. will help to maintain physical fitness.

4. Hiking and Trekking : Walking on nature trails along hilly regions has become a popular activity nowadays. Going for a hike or trek in between the hectic and fast paced life of today, helps to increase blood circulation, relaxes the mind and helps to improve mental health. Such activities are Lifestyle activities as it does not require company but can be done alone too.



5. Walking, running or swimming:

Walking, running or swimming helps to increase cardiovascular endurance and efficiency of the circulatory system. These activities are currently, very popular because they can help to control lifestyle diseases like diabetes and high blood pressure that are widely prevalent in society today. Swimming is a splendid way to exercise. It helps in the rehabilitation process to heal injuries and also helps to control body temperature. Exercise by walking or running should be done for at least 20 to 60 minutes at a stretch. The intensity of the walk or run is an important factor while exercising. By regulating the walking or running pace, the intensity level of the exercise can be termed as low, moderate or high. There are different methods to monitor exercise intensity.

6. Yoga :

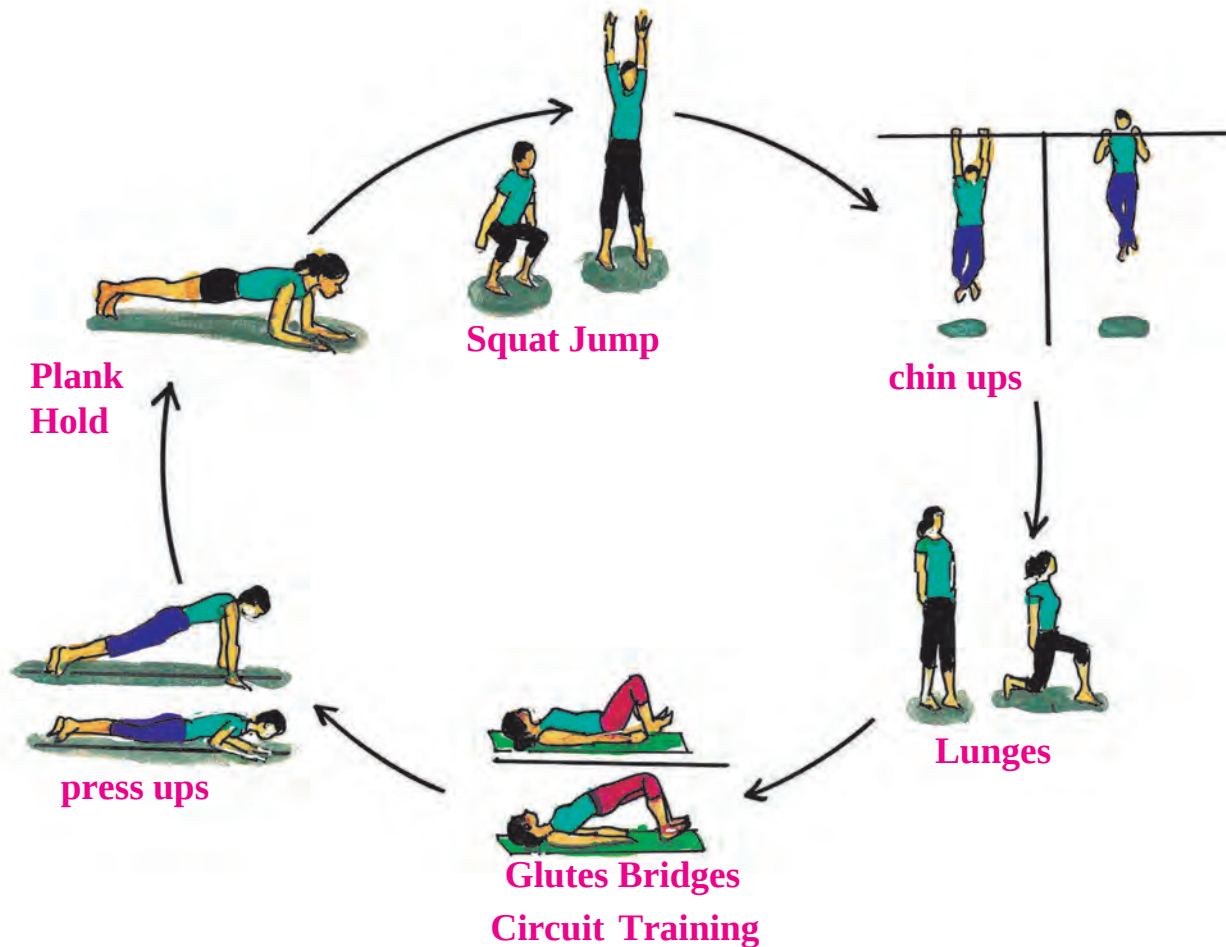


Yoga is one of the gifts that India has given to the world. Yoga is not just an exercise; it is a lifestyle. Yoga involves asana, pranayama, meditation. Yoga offers all kinds of benefits life, physical, mental, emotional and

spiritual. It is very useful for mental stability and peace of mind. Likewise, yoga helps in controlling many diseases related to diabetes, blood pressure, asthma and heart related diseases, Which is mentioned in various Indian texts. When doing yoga, begin with expert's guidance.

7. Training Methods : Training methods have a very important role to play in development of fitness. There are various training methods that can help improve fitness. For example, Circuit training, Weight training, Fartlek training, Plyometric training, etc. The basic details of these training methods are as follows:

7.1 Circuit training : Amongst the different training methods used, Circuit training is one of the most well-known methods. To develop the physical fitness required for different sports this method is used. In this training method, many activities or exercises are done in a specific order that forms the circuit. Each exercise is to be done for a fixed time or for a fixed count and then the next exercise in the circuit is to be done. Improved muscle endurance and develop fitness is the prime objective of Circuit training.



- In a circuit training there are at least 6 to 10 pre-decided exercise stations. The number of exercises can be increased based on the fitness of the sportsperson.
- Circuit training involves the exercise of the major muscles in the body.
- After each exercise there is a rest period followed by the next exercise. The rest duration between two exercise stations can range from 30 to 60 seconds.
- The time duration or frequency of doing the exercise or activity at every station is fixed, based on the sport and the objective to be achieved in the process.
- When all the exercises selected for circuit training are performed once, then one circuit is completed. In one

such training session 2 to 6 circuits can be performed. Based on the fitness levels the number of such circuits is to be determined.

- The rest period between two circuits could be anywhere between 3 to 5 minutes.

7.2 Weight training : A very popular training method currently prevalent amongst youngsters is weight training in the These include exercises performed with the help of free weights or machines. Increasing muscle strength and muscle endurance are the prime objective of weight training. Weight training as a training method is popular amongst average people, just as it is amongst sportspersons.



Weight training

- Weight training exercises are different for the various body parts such as the arms, shoulders, chest, back and legs.
- In weight training, repetitions of each exercise is usually between 8 to 15 counts. It can vary depending on the level of fitness and the purpose.
- The number of sets of a particular exercise in weight training will be in the range of 2 to 3.
- Rest period between two sets of exercise is about to three minutes.
- Weight training should be done for all the major muscle groups in the body and not specific to one muscle.
- Seek expert guidance to maintain proper body posture while weight training to help avoid injury.
- Few Weight Training exercises:

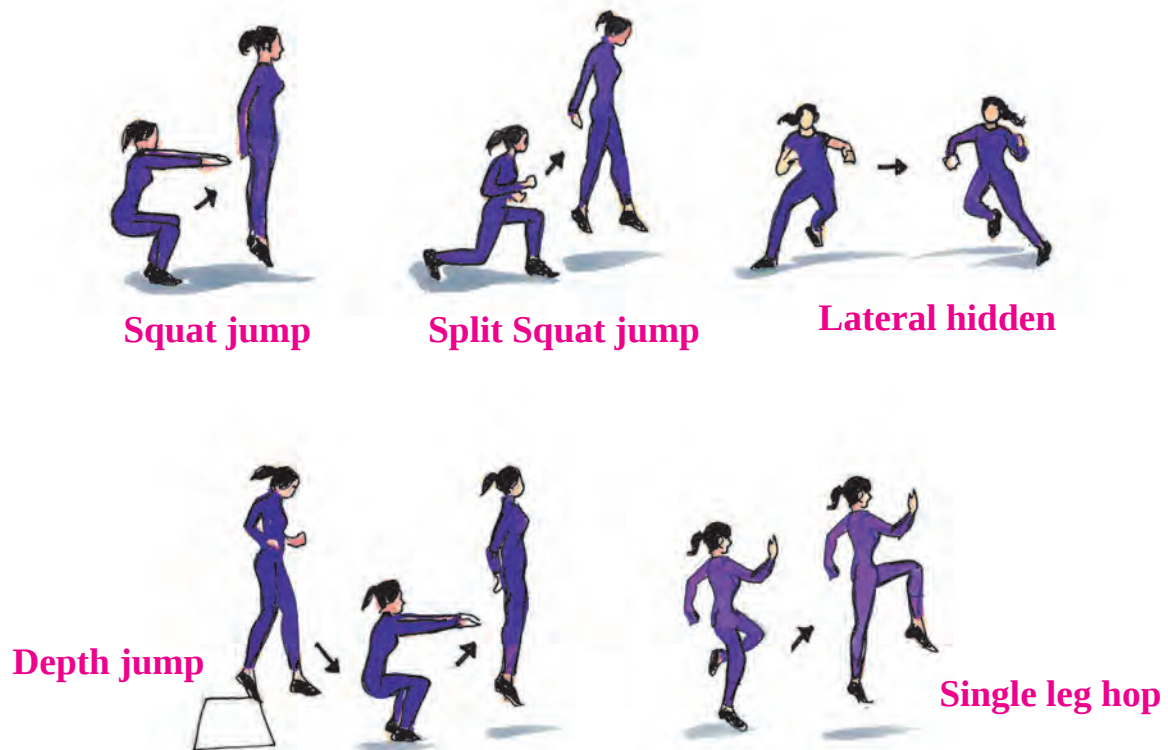
Bench Press, Shoulder Press, Squat, Bicep Curl, Leg Press, etc.

Important

- Level of fitness of individual is unique. So, while weight training avoid comparison with others.
- To observe results of any training a minimum of 6 to 8 weeks or more is needed. Immediate results in a day or two cannot be visible.

7.3 Plyometrics Training Method:

The fitness component of explosive strength can be enhanced with plyometric training. All movements in this training are fast, vigorous, and explosive. Plyometric training is more useful for sports like athletics, volleyball and basketball.



Plyometrics Training

- Plyometric Training involves intense and explosive movements and so individuals with joints problems should avoid this training.
- Proper warm up should be performed before plyometric training, followed by or muscle relaxing exercises after training.
- Plyometric training should be done under the supervision of a specialist as there is possibility for injury.
- Rest duration between two sets could range between three to five minutes.
- Few Plyometric exercises : Squat Jump, Plyometric pushups, Box jump, Depth jump, Split squat jump, etc.

Intensity measurement while training:

Intensity is an important factor while exercising or training. To assess intensity level while training there are some objective techniques and some individualized techniques.

Borg RPE Scale is as follows :

Rating of Perceived Exertion (RPE):

This technique is very popular in assessing the intensity level while exercising and training.

Procedure : An individual can self-assess the intensity level of the workout on a scale from 0 to 10 while exercising or the trainer can rate the intensity of the workout observing the physical symptoms while the individual is exercising.

Table G. Borg's RPE scale

1–10 Borg Rating of Perceived Exertion Scale	
0	Rest
1	Really Easy
2	Easy
3	Moderate
4	Sort of Hard
5	Hard
6	
7	Really Hard
8	
9	Really, Really Hard
10	Maximal : Just like my hardest race

Talk test - is an easy method to monitor intensity while performing endurance exercises. It does not require any equipment. Walking, running, cycling, swimming, dancing are all endurance activities involving the cardio respiratory system. If the intensity is appropriate while doing these exercises then only it will help in developing the cardio vascular endurance and hence the talk test technique is useful to test the intensity.

Procedure : Walking, running or cycling elevates the breathing rate. While doing such activities if you can speak non-stop but cannot sing, then your intensity is medium. While walking if you cannot speak and you experience breathlessness

while speaking then the intensity is high.

Misconceptions about physical fitness and exercise

1. Weight training is meant for men and not for women is a big misconception.
2. Lifting weights or weight training by women will make their muscles big, like men is also a big misconception about weight training. By nature, there are physiological differences between men and women, and even though women do weight training, their muscles will not bulk like those of men. Some men feel that they need not go to the gym as they do not want to appear like a bodybuilder. But only going to the gym cannot make one look like a bodybuilder.
3. I don't want to lose weight so I don't need to exercise is a misconception of many people. Exercise is not only for weight loss or for athletes but is important for the basic health and well-being of the general public.
4. Exercising is very difficult, requires lot of time, sweat and hard work is a misconception in the society. Participating regularly in any physical activity of your choice, makes physical activity a part of your lifestyle. Research in exercise science has advanced so much that under proper and guided supervision, effectiveness of exercise can be experienced in a minimum period of time.
5. Exercising is boring. To make exercise interesting the lesson provides information on different activities like

rhythmic movement performed to music, hiking, etc. that are good forms of exercises. Also playing regularly a sport of your choice is a good form of exercising. So, exercise is not just about running and squat thrust.

6. To increase muscle mass, ingestion of protein supplements or protein shakes is necessary. This is a big misconception spreading amongst the youth now a days. Protein supplement is needed mainly for body builders or high performing sports persons as the natural diet consumed may not

sufficient those participating in high intensity workouts and long duration training. Protein supplementation is conducive in such cases.

7. Sit-ups or crunches reduces abdominal fat. Body fat around the abdomen cannot be reduced with exercise targeted to that region alone. But overall body fat levels can be brought down through proper exercise. Sit ups or crunches are exercises to increase abdominal muscle strength and muscle endurance but not burn fat around the abdominal region.

Exercise

Q.1 Fill in the blanks.

- (1) Circuit training consists of at least ----- exercises.
- (2) Plyometric training develops --- ----- component of fitness.
- (3) Borg's technique measures -----.
- (4) Rest time period between two sets of plyometric exercise should be ----- minutes.

Q.2 Answer in brief.

- (1) Write in short the benefits of weight training method.
- (2) Give information about plyometric training.
- (3) What are the various activities for developing fitness?
- (4) What are the misconceptions about fitness and exercise?

Supplementary Studies :

Prepare a circuit training program of at least 6 exercises for oneself.