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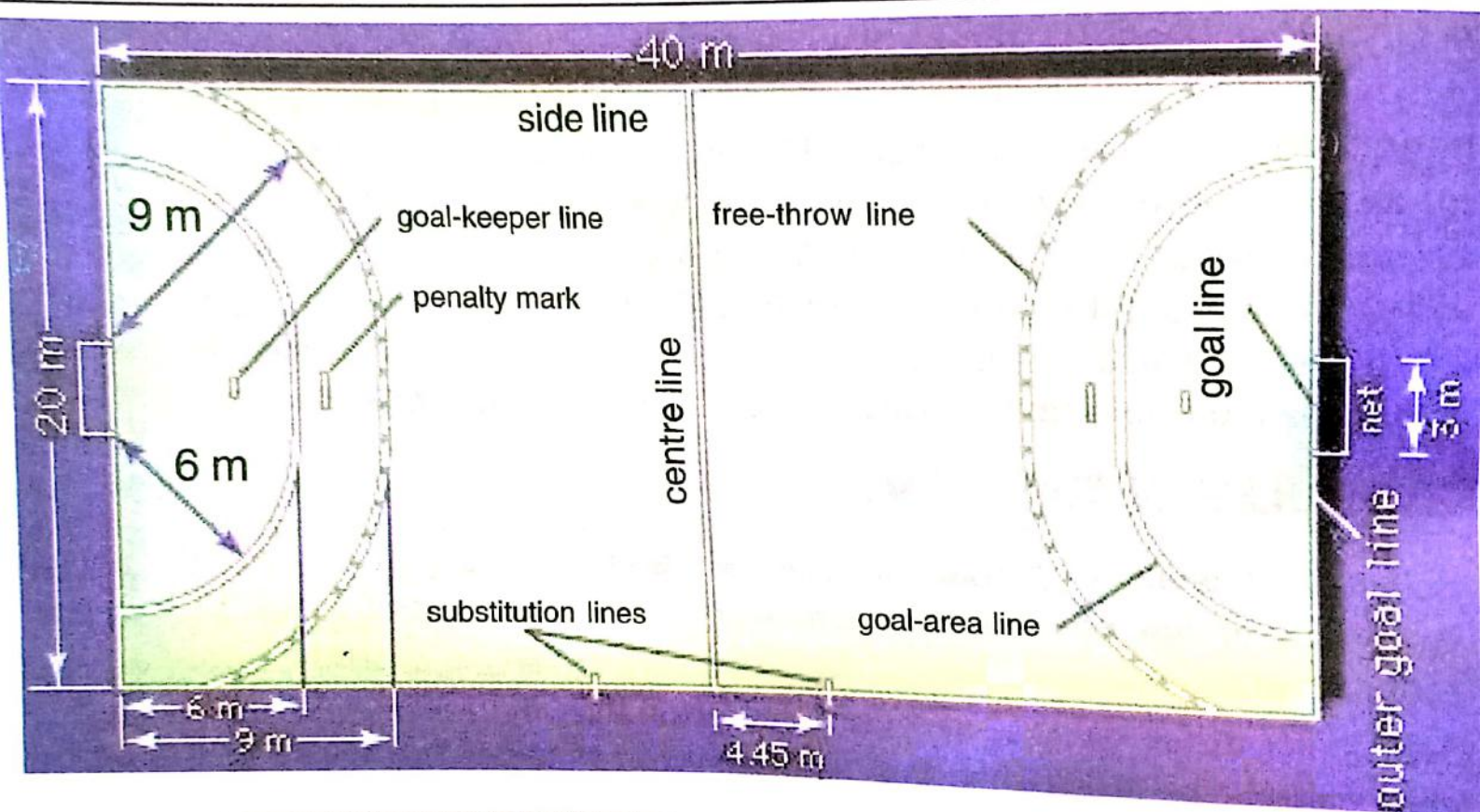
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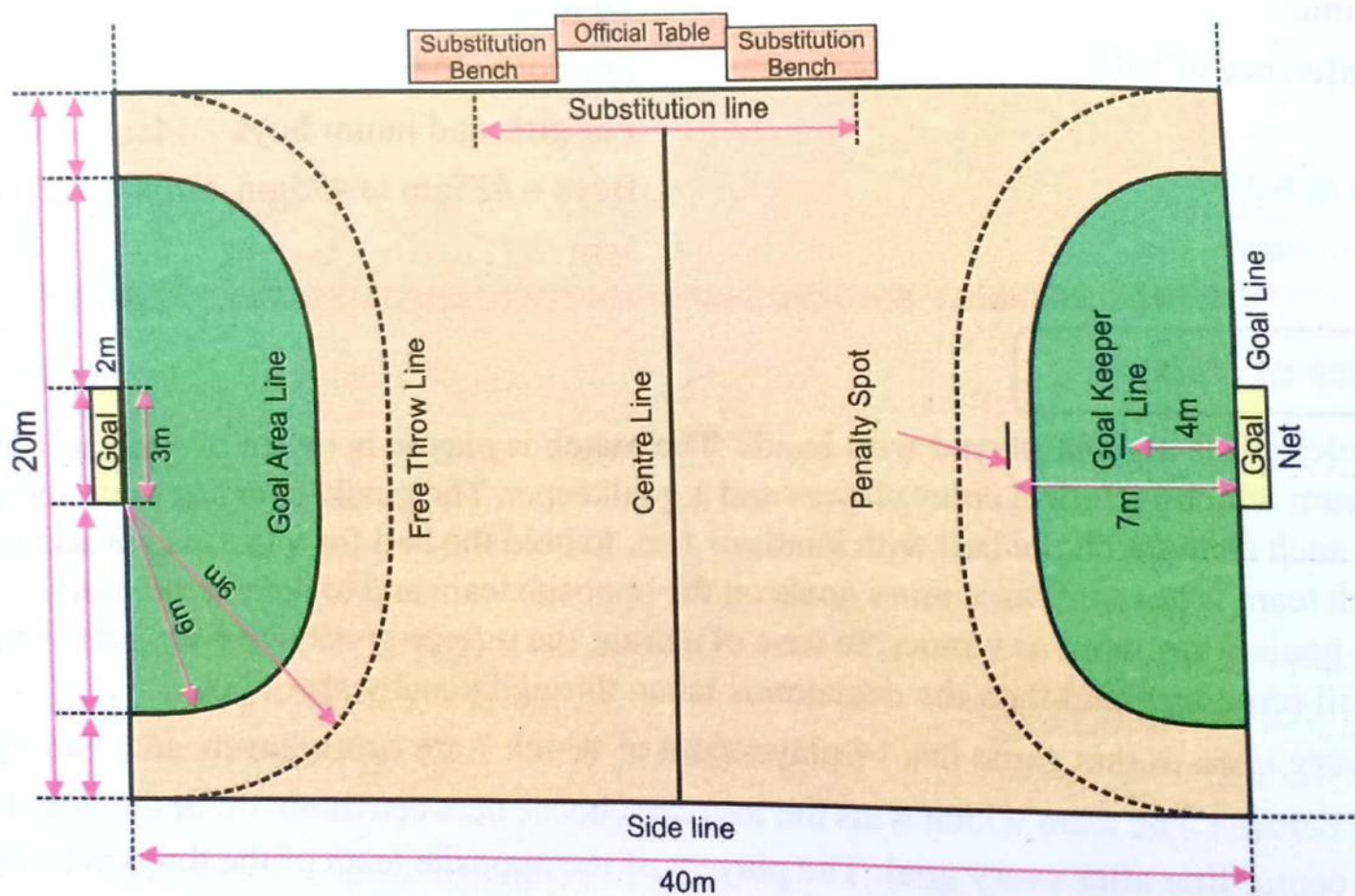
History

1. HISTORY

Handball was developed in Germany by *Konrad Koch* (a gymnastic instructor). *Frederik Knudsen* modified this game in 1911 (Denmark). The *International Amateur Handball Federation* was formed in 1928 during the Amsterdam Olympics. Handball (for 11 player team) was a demonstrative sport at the Berlin Olympics in 1936. The first World Championships for 11 and 7 player-teams were organized in 1938 in Germany. But the 11 players version gradually disappeared, as the 7 players version became more popular. Handball is governed by the *International Handball Federation (IHF)*. It became an Olympic event for men in 1972 at Munich and for women in 1976 at Montreal Olympics. In India it had a slow progress. *Handball Federation of India (HFI)* was formed in 1955. It regulates its organization, selection of players and training of players in India.

Field





Tips to Remember :

(i) Size of Playing Field	= 40 m × 20 m
(ii) Shooting Circle	= 6 m Inner Shooting Circle / Goal Line and 9 m Outer Circle/Free Throw Line
(iii) Penalty Point	= 7 m
(iv) Goalpost	= 2 m × 3 m (8 cm thick block outside)
(v) No. of Players	= 12 (7 Court Players and 5 Substitutes)
(vi) Duration of Game	= 2 halves of 30 minutes (M) and 25 minutes (W) [5 to 10 min break in each half]
(vii) Weight of Ball	= 450 g ± 25 g (M) and 350 g ± 25 g (W)
(viii) Circumference of the Ball	= 60 cm (M) and 55 cm (W)
(ix) Fouls	= Yellow card, Red card (Disqualification) 2 Minutes Suspension, Expulsion
(x) Officials for Match	= 2 Referees, 1 Scorer, 1 Timekeeper, 1 Recorder
(xi) Timeout in Game	= 1 timeout (of 1 minute duration) in each half
(xii) Extra Time	= 2 Halves of 5 minutes each (1 min break in-between)
(xiii) Free Space Area	= 3 metres on all sides of playing field.

Latest

general

rules

2. LATEST RULES OF THE GAME

- (i) A handball game is played between two teams of 12 players (7 field players and 5 substitutes). According to new rules the team consists of 16 members out of which 12 members team is enlisted over score sheet.
- (ii) The object of the game is to score more goals than the opposing team. A goal is scored when the ball goes entirely or crosses the goal line within goalpost. After the goal scored, the game restarts from throw off from the centre line.
- (iii) The game is played in two halves of 30 minutes period for men and 25 minutes for women, with 10 minutes rest in-between. Overtime period of 5 minutes of two halves is given in case of tie in regular time, with 1 minute half time break. The game clock starts or stops according to Referee's signals.
- (iv) Players with possession of ball may throw or pass or dribble or hit or move with the ball or catch the ball with their hands or arms but never with their feet. Both hands (simultaneously) can only be used while catching or while throwing the ball.
- (v) There are the violations like *double dribble ; kicking the ball; running with the ball for more than three steps fouls are like pull or hit the ball to opponents; blocks opponent with arms or legs; restrain, hold, pass, run or jump into opponent or endanger opponent, etc.* In these cases opponent are awarded Free-Throw.
- (vi) Only the goalkeeper is allowed inside the goal area (inside 6 m goal line). Goalkeeper restraining line (at 4 m from goal line) is applicable during *Penalty Throw*.
- (vii) The game starts with a *Throw-Off* from centre line by the team that wins the toss or after the goal scored by opponent or after each half.
- (viii) During throw off the player with the ball passes it to a teammate while each team must stay in their own half of the court before the start of game (upto Throw-off). The player throwing, must keep one foot in contact with the centre line until the ball leaves his hand.



- (ix) A player in possession of the ball shall not take more than 3 steps while holding the ball, player should not hold the ball without dribble for more than 3 seconds.
- (x) Substitute is only permitted with the consent of Referee and Table Official. The player to be substituted should only enter from the area of substitute restraining lines if other player has moved out of playing field. Otherwise 2-minutes Suspension will be given to the substituted player.
- (xi) Penalty-Throw (7 m Throw) is awarded from 7-metre line. This is given when defending player intentionally obstructs the opponent from behind or by blocking dangerously while player is throwing towards goal. The goalkeeper alone defends the goal whereas opponents throw the ball behind 7 m mark. The goalkeeper is also restricted to come ahead of restraining line for goalkeeper. Rest of players have to stand behind 9 m line or free throw line.
- (xii) *Two-minutes Suspension is given when player misbehaves with Referee, performs unsportsman act to opponents ; manhandling the opponents ; intentional obstruction from behind ; repeatedly obstruction in spite of warning or yellow card ; attempts to endanger the opponent's health while attacking.*

Fundamental Skills

FUNDAMENTAL SKILLS OF HANDBALL

- ❖ **Passing:** Bounce pass, chest pass, hook pass, overhead pass, jump pass, shoulder pass, side arm pass
- ❖ **Dribbling:** Low dribble, high dribble
- ❖ **Shot:** Jump shot, dive shot, underhand shot, lob shot, reverse shot

Bounce Pass: In this pass, the ball is thrown in such a manner that the ball bounces off the floor three feet in front of the receiver. The aim is to make the ball rise to the receiver's chest level. The receiver then moves towards the ball and tries to catch it by short hopping.

Chest Pass: It is a short distance pass and therefore can be done with control and speed. Consequently, it is the most accurate form of passing the ball. From a two-handed throwing position, keeping the ball at chest height, the ball is pushed out through the fingers in the direction of the receiver.

Hook Pass: Hook pass is executed in such a way that the ball is passed without interference from a defender. It is used when the player is in the air doing a jump shot. At the highest point of the jump, the ball should be curved around by rotating the shoulder and released to the teammate, who moves towards the goal.

Jump Pass: Jump pass is performed with a jump. At the highest point of the jump, the ball is flicked with the wrists. Proper care should be taken to execute this pass before the player starts losing the height.

Shoulder Pass: In this long distance pass, the ball is thrown at a greater height to trick the opponents. The ball is held at a height level to the head with the fingers spread behind it. The whole arm follows the ball and the throw is done in a straight line between the thrower's shoulder and the receiver's hand.

Dribbling: It advances the ball and manoeuvres into scoring position by bouncing it off the ground. It can be performed between two hands to confuse the opponents. For proper dribbling, the players should stand in an astride position with knees slightly bent. The ball is bounced with the fingertips and controlled with a smooth and rhythmic action of the hand.

Jump Shot: In a jump shot, the foot opposite to the shooting hand of the player is placed forward. The player jumps in such a way that the shooting arm and back make a 90 degree. The shoulder is rotated and the hip flexed backward simultaneously and in the same direction as the throwing arm.

Dive Shot: The player stretches her/his body and directs her/his momentum towards the goal. During the dive, the ball is released at the last moment and as close as possible to the goalmouth.

Underhand Shot: Having a low trajectory and a continuous follow through this shot is used when all the passing lanes of high trajectory shots are blocked by the defending team. The player brings the hand forward and up below the shoulder height. Right-handed throwers turn their left body towards the goal. To accelerate, the feet are put in a crossover step position with the rear left foot giving a push-off of the right foot.

Lob Shot: This high arc shot is performed when the goalkeeper is away from the goal. The attacker does a jump shot and lobs the ball over the goalkeeper's head directly into the goal or to a teammate. Timing is of importance for execution of this shot.

FOULS AND PENALTIES IN HANDBALL

- ❖ The referee is given the power to award penalties when an act that can be deemed as foul has been committed by a player. The yellow card is awarded as warning to the players not following the rules. Additional fouls lead to suspension. Three 2-minute suspensions result in disqualification.
- ❖ A disqualified player can be substituted after 2 minutes. A player that has been awarded an exclusion for assault cannot enter the court again for the rest of the game.
- ❖ An action that might cause harm to or intentionally block the player of the opponent team is considered a foul. For example, using the elbow during play to keep away defending players to clear their own path.
- ❖ A free throw is awarded to the opponent team for a minor foul. The throw must take place exactly on the same spot where the violation took place.
- ❖ If illegal techniques are used to block an attacker's attempt to score a goal, a penalty throw (7-metre throw) is awarded to the opponent team. For example, a defending player entering her/his own goal area to gain advantage over an attacking player in possession of the ball.
- ❖ All players, except the defending goal keeper, should be outside the free throw line when the penalty throw is taken.

Terminologies

4. TERMINOLOGY

Dribble : It is a skill of controlling the ball and preventing opponents to gain the possession of the ball by bouncing, dodging and faking with the ball.

Pivot Player : A tall player or player who remains at centre during attack and defence. Pivot player keeps the movement of ball and tries to break the defence of opponent.

'O' Degree Throw : A throw attempted near the corner of goal line.

Fast-Break : A ball is quickly passed from one end to another end, to own team make for scoring goal whereas opponent's defence cannot be set-up.

Passive Play : It is a method of intentionally delaying for attempting goal and keeping the possession of the ball for more than 20 seconds. The Referee indicates this by raising one hand up. After the Referee's signal the team has to execute the ball towards opponent goal.

Fake : A skill to deceive opponent in wrong direction and thus making free space to move ahead.

Throw-Off : To start (after the goal scored or in beginning of each half) the game, a player passes the ball by cutting centre line whereas players of both teams remain in their own half.

Goal-Throw : During play if ball goes out from the end lines (goal line) by the opponent, then goalkeeper starts the game by goal throw. This is also known as *goalkeeper throw*.

Throw-In or Referee-Throw : During play if ball goes out from the sideline, then opponent gets the chance for ball's possession by Referee's consent and giving the ball first to referee and then is given the ball pass by cutting sideline.

Goal-Area : The arc around goalpost at 6 m, which is restricted for all players except goalkeeper.

Double-Dribble : If player uses both hands simultaneously while dribbling. It is a fault.

Obstruction : It is an illegal way to stop the opponent.

Free-Throw : It is also known as 9 m throw. If defensive team commits fault or violation then opponent is awarded with 9 m free-throw. Defensive player must be 3 m away from the opponent players.

7-Metre-Throw : It is also known as *penalty throw*. In this goalkeeper alone defends the goal whereas opponent throws the ball towards goalpost behind 7 m mark. The goalkeeper is restricted to come close upto restraining line

of goalkeeper. Other players stand outside 9 m line or free throw line. It is given when defending player intentionally obstructs the opponent while he is going for throw towards goalpost.

Running : A player with ball is not allowed to run or move more than 3 steps without dribbling the ball otherwise fault of running is given to opponent.

Substitution : Any player can be replaced from extra players with consent from table official. The player to be replaced has to come out of playing field first and then the substitute player has to enter from the substitute restraining line near the official table.

Goalpost : It is wooden post made with inner dimensions of 2 m height and 3 m length. The wooden log must be 8 cm thick in cubical shape log. It should be painted in black and white with dimension of 20 cm × 8 cm with alternate colour.

Playing-Time : The regular time is 30 minutes for men and 25 minutes for women in two halves. The rest period in-between each half is 5 to 10 minutes.

Wings : It is the strategy of attacking from sides whereas player spread around 9 m free throw line, their movement is such that they should break opponent defence from sides.

Line-Cut : During attempt for goal if a player cuts or crosses the goal line, this is a violation.

Three-for-two-rule : It is a strategic move in which two defenders come close and restrain the opponent to throw the ball.

Shuffling : It is again a strategic move during attack when man to man check by defenders is done. In this, player moves or changes his position to break the defence of defenders.

Tie-Rule : If there is tie in regular time then extra-time of 5 min of two halves is given. If tie still exists, then five penalty throws are taken alternatively by each team to break the tie.

2-minutes Suspension : If player intentionally obstructs the opponent, he remains out for two minutes, whereas team has to play with less number of player till he gains come-in.

Yellow Card : It is warning against player who is not playing under rules.

Red Card : It means disqualification of a player who is repeatedly committing obstruction inspite of warning. He is not allowed to play further.

Duties of Recorder : Recorder sits over the official table. He fills the score sheet carefully. He notes down the players, fouls, suspension, warning cards, etc. over the score sheet. He notes down the player scoring the goal. He checks the changing player.

Duties of Timekeeper : Timekeeper sits by side of Recorder on the official table. He starts the game clock and stops the game when the playing time ends, after each half. He stops the game clock during timeout and informs the end of timeout to Referee. He stops or starts the game clock in-between (by the indication of Referee). He notes the duration of 2-minute suspended player and sends him for play accordingly. He assists Recorder by telling the chest number of the player scoring the goal.

Duties of Captain : He is the player who decides the choice of choosing the side or throw off to begin the game. He is responsible for the decisions of the team in the playing time. He is responsible for the conduct of his team in the playing area.

Duties of Referee : Two referees are there, both standing diagonally opposite to each other. They assist one and other for better coordination among them. They judge the fair play in their halves and give decision accordingly. They start the game by throw-off and end the game by blowing whistle. They signal fouls, timeout, enforce foul and penalties, side-pass, suspend player, warning to player. They indicate the beginning of the passive play and control the game under rules. They give decision when goal has been scored. They check player's equipments, ball, ground dimensions; ground safety area, etc.

Important Tournaments

IMPORTANT TOURNAMENTS AND PERSONALITIES

Important Tournaments

Olympic Games, Asian Games, IHF World Men's Handball Championship, IHF World Women's Handball Championship, IHF Emerging Nations Championship, IHF Super Globe, National Games, HFI Men's National Handball Championship, HFI Women's National Handball Championship.

Famous Personalities

Nikola Karabatic (France), Mikkel Hansen (Denmark), Anita Gace (Croatia), Maja Zebic (Croatia), Kornel Nagy (Hungary), Katrine Lunde (Norway), Gro Hammerseng (Norway), Therese Helgesson (Sweden), Oussama Boughanmi (Tunisia), Anders Eggert (Denmark), Linnea Torstenson (Sweden), Sachin Choudhary (India), Raghu Gurung (India), Renu Goswami (India), Mamta Sodha (India).

Equipments

Specifications of Playfield and Basic Requirements/Equipments :

- A rectangular court of length 40m and width 20m
- Shorts, sports shirt, fleet, socks etc.
- A ball

Aaphe Physical Fitness Test

Aahper Test...

It is a motor fitness test. Earlier the name of this alliance was AAPER i.e. American Alliance for health, physical edu. and recreation. but now it is known as AAPERD i.e.

"American alliance for health, physical education recreation and dance" and is one of oldest organisations of USA. The 1st test was published in 1958 then was revised in 1965 and in 1976 final Test manual was prepared with following items.

- (a) Pull ups (for boys) & flexed arm hang (for girls)
- (b) Flexed leg situps
- (c) Shuttle run
- (d) Standing long jump.
- (e) 50 yard dash.
- (f) 600-yard run walk.

PULL-UPS FOR BOYS



Purpose: To measure arms and shoulder strength.

Equipment: A metal or wooden bar approximately 1½ inches in diameter and a stopwatch.

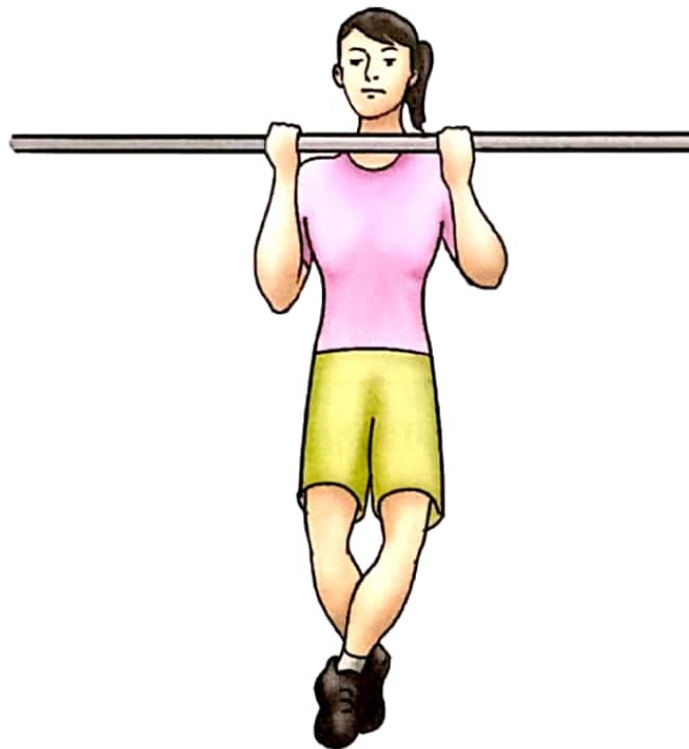
Procedure: The height of the bar is adjusted according to the height of the student. The student holds the bar

with his palms facing away from him and raises his body so that the chin reaches above the level of the bar. This test measures the total number of repetitions without taking rest by noting the number of pull-ups done. One score is awarded for every pull-up.

Rules: The student should not swing his body. The pull should not be a snap movement. In case this happens, the guide should extend his arms across the front of the student's thighs.

Scoring: The number of completed pull-ups is recorded to the nearest whole number.

FLEXED ARM HANG FOR GIRLS



Flexed arm hang for girls

Purpose: To measure arms and shoulder strength.

Equipment: A metal or wooden bar approximately 1½ inches in diameter and a stopwatch.

Procedure: The height of the horizontal bar is adjusted approximately equal to the standing height of the

BOYS

NO. OF SIT-UP IN 1 MINUTE

GIRLS



② Flexed leg Sit ups ...

The student lies on the back with legs in flexed posⁿ i.e in bent knee position. One's hand should be behind the neck. Elbows must touch the knees while doing sit ups. The total number of repetitions are noted in 1 min.

Scoring: The score is counted as the maximum number of sit-ups done in 1 minute.

SHUTTLE RUN



→ Shuttle run

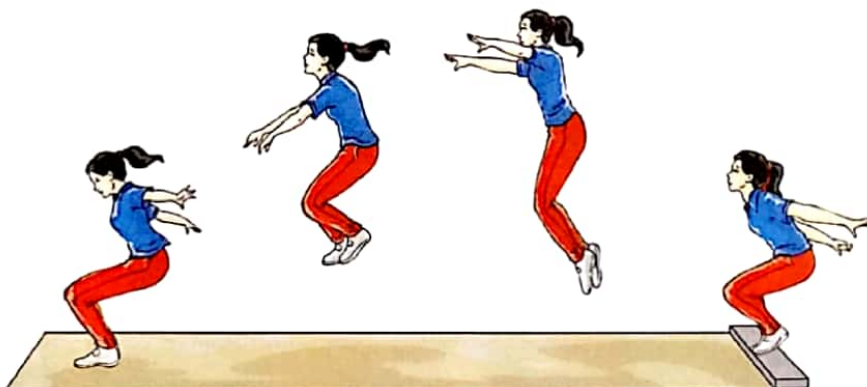
Purpose: To measure speed and agility.

Equipment: Two blocks of wood (2 × 2 × 4 inches) and a stopwatch.

Procedure: Two parallel lines are marked on the ground 30 feet apart, and two blocks of wood 2 × 2 × 4 inches are placed behind one of the lines. The student stands behind the other line. On start, the student runs towards the wooden blocks, picks one of them and runs back to the starting line, places it behind the starting line. They then run back and pick up the second block and carry it to the starting line. Two trials are allowed.

Scoring: The time taken in both trials are noted down and the best one is taken as final score.

STANDING LONG JUMP



→ Standing long jump

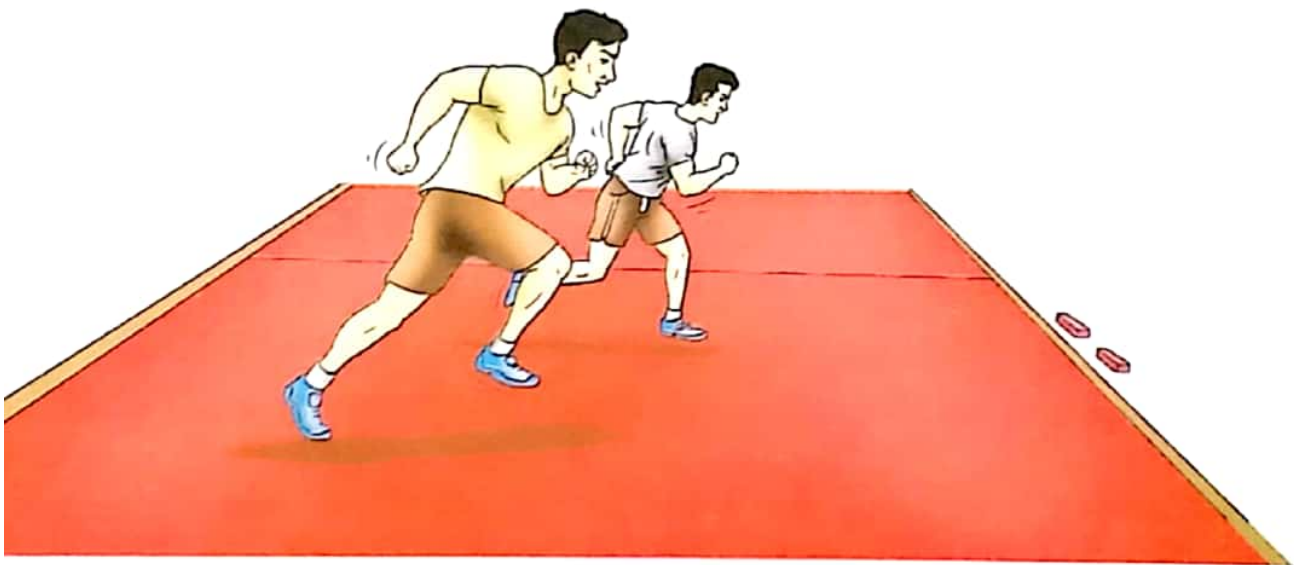
Purpose: To measure power.

Equipment: A mat or clean floor and a measuring tape.

Procedure: A take-off line is marked on the ground and the student stands behind this line with both feet apart. The student then swings the arms and bends the knees, and then jumps into the long jump pit. The distance from the take-off line to the heel or other part of body that touches the ground nearest to the take-off line is measured and noted in feet and inches. Three trials are given.

Scoring: The best score of the three is recorded as the final score.

50-YARD DASH



- 50-yard dash

Purpose: To measure speed.

Equipment: Stopwatch

Procedure: The students are asked to run 50 yards.

Scoring: The time taken is recorded as the score in seconds to the nearest tenth of a second. The time

taken is the amount of time between the starter's signal and the instant the student crosses the finish line.

600-YARD RUN



- 600-yard run/walk

Purpose: To measure endurance.

Equipment: Stopwatch.

Procedure: The students are asked to run or walk for a distance of 600 yards from a starting line.

Scoring: The time taken is recorded in minutes and seconds.

YOGA

HISTORY

The word '*yoga*' comes from the Sanskrit word '*yuj*' which commonly means 'to add', 'to join', 'to unite', or 'to attach'. Yoga can be called a spiritual discipline which focuses on bringing harmony between mind and body.

Yoga is believed to have historically existed in the pre-Vedic period (2700 BCE) of ancient India. Various sages and practitioners have contributed to preserving and developing yoga into the form we know today. The period 1700 to 1900 CE is considered as Modern Period in the history of yoga. Ramana Maharshi, Ramakrishna Paramhansa, Paramhansa Yogananda, Vivekananda, among others, contributed to the development of Raja Yoga during this period.

Yoga is now practised widely for physical fitness and mental well-being. It has been popularised in many countries through the teachings of Swami Shivananda, Shri T Krishnamacharya, Swami Kuvalayananda, Shri Yogendra, Swami Rama, Sri Aurobindo, Maharishi Mahesh Yogi, Acharya Rajneesh, K Pattabhi Jois, B K S Iyengar, and Swami Satyananda Sarasvati.

ASANAS FOR OBESITY

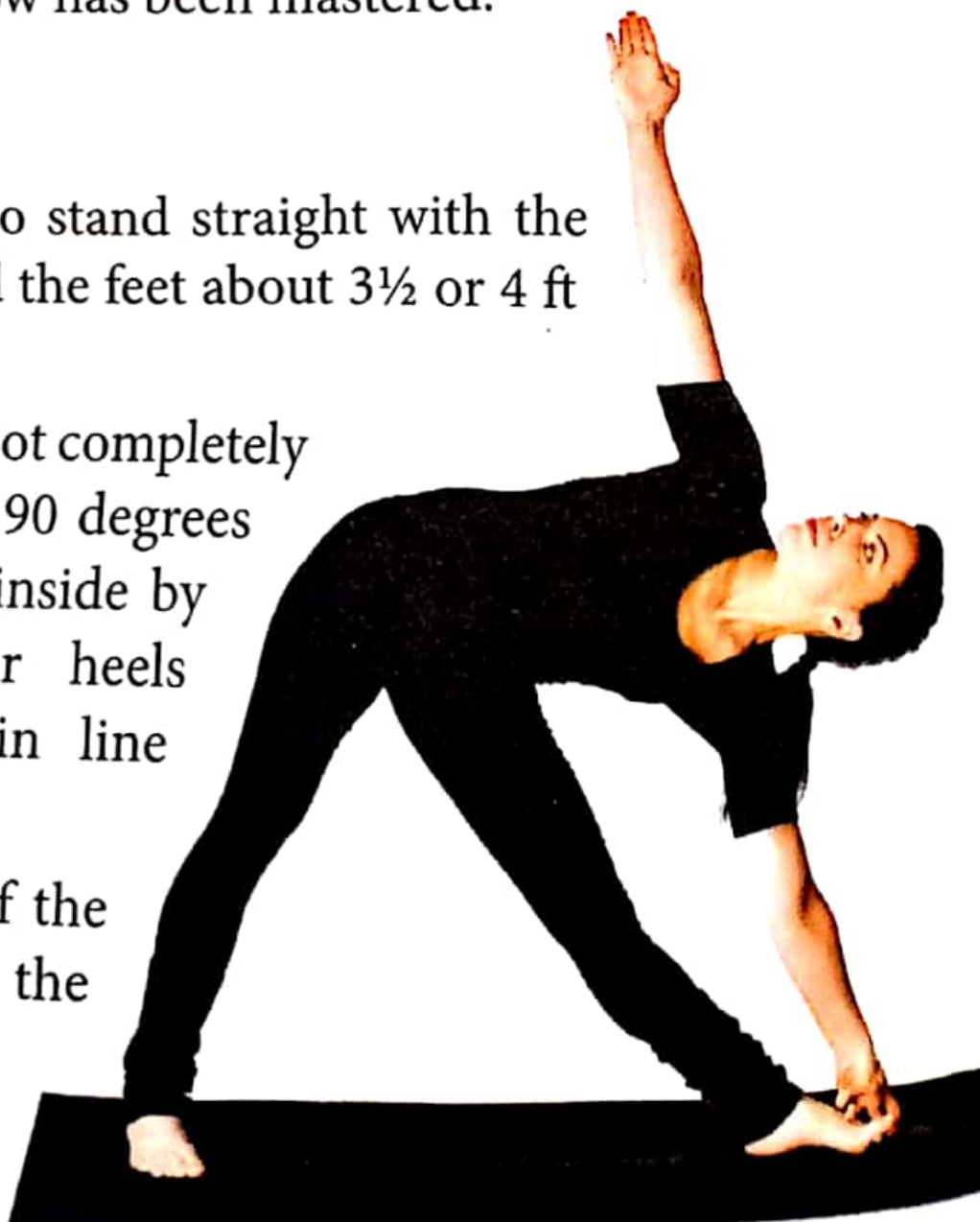
Obesity is a physical condition in which a person has accumulated so much body fat that it might have a negative effect on her/his health. Obese people are prone to several potential diseases, such as arthritis, hypertension, cancer, flat foot, respiratory disease, liver problem, diabetes, etc. Obesity can be caused by genetics, overeating, eating frequently, physical inactivity, and also psychological factors.

Trikonasana

Trikonasana, or the Triangle Pose ('*trikona*' for 'triangle'), is another standing yoga pose which those wanting to control their weight will find useful. It has three advanced forms: *utthita trikonasana* (extended triangle pose), *baddha trikonasana* (bound triangle pose) and *parivrtta trikonasana* (revolved triangle pose), which should be done only after the basic procedure given below has been mastered.

Procedure

1. The first step is to stand straight with the knees unbent and the feet about 3½ or 4 ft apart.
2. Turn your right foot completely to the outside by 90 degrees and the left foot inside by 15 degrees. Your heels should be kept in line with the hips.
3. Align the centre of the right heel with the centre of the arch of the left foot. Your feet should



- press the ground firmly and the weight of the body should be equally balanced on both the feet.
4. Spread your arms to the sides. They should be parallel to the ground with the palms facing down. Extend your trunk to the right.
 5. Drop the right arm so that the right hand reaches the front of the right foot.
 6. Now, extend the left arm vertically. Twist the spine and trunk gently in a counter-clockwise direction. This time, the spine should remain parallel to the ground.
 7. Stretch the arms away from one another. You may turn your head and look up to intensify the spinal twist.
 8. Hold this position for 5 to 10 breaths. Inhale deeply. Relax your body with each exhalation.
 9. Repeat the posture by switching the position of the legs.

Benefits

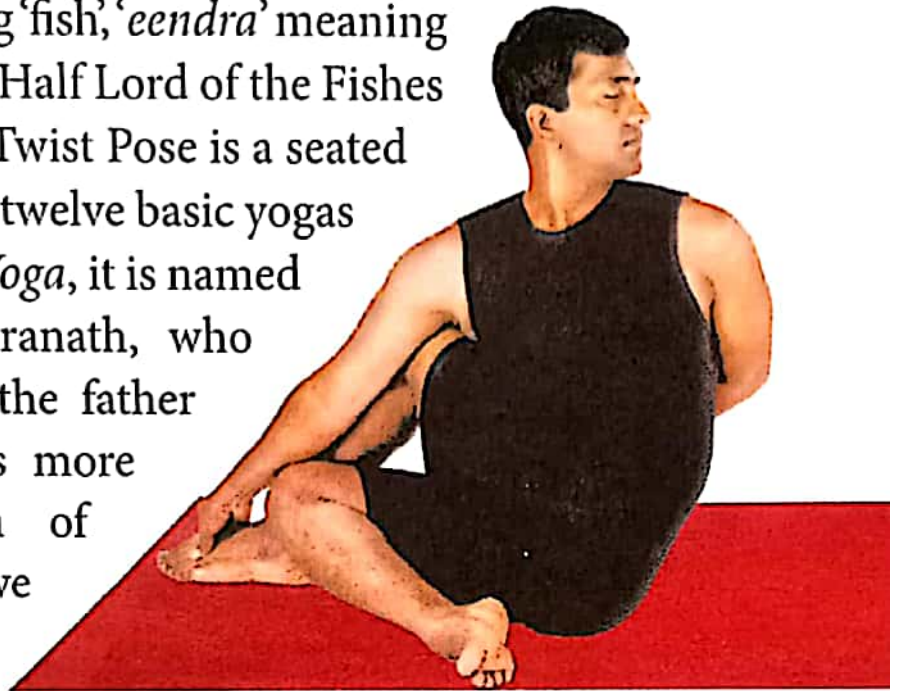
- ❖ It relieves gastritis, indigestion, flatulence, and acidity. Since it helps burn fat, it is highly recommended for those hoping to lose excess weight.
- ❖ It also improves flexibility of the spine and corrects the posture of the shoulders.
- ❖ It massages the pelvic organs and strengthens them.
- ❖ It reduces stiffness in the back, neck, shoulders and knees.
- ❖ It reduces anxiety and stress.
- ❖ It improves blood circulation and strengthens and stretches the hips, back, arms, thighs and legs.

Contraindications

1. This asana should be avoided by those who have migraine, diarrhoea, blood pressure problems or injuries of the neck and back.
2. Those with high blood pressure should not raise their hand overhead if they want to try this pose, as the stance may raise the blood pressure.
3. Beginners should practise this under the guidance of an expert.
4. Those with cervical spondylosis should not look up for too long.
5. Those with a heart condition should practise against a wall and avoid raising the arm. Rather the arm should rest along the hip.

Ardha Matsyendrasana

Ardha Matsyendrasana ('*Ardha*' meaning 'half', '*matsya*' meaning 'fish', '*eendra*' meaning 'king'), also known as Half Lord of the Fishes Pose and Half Spinal Twist Pose is a seated yoga pose. One of the twelve basic yogas performed in *Hatha Yoga*, it is named after Yogi Matsyendranath, who is considered to be the father of Hatha Yoga. It is more complicated version of *Vakrasana*, which we will read about later.



Procedure

Figure 12.4 Ardha Matsyendrasana

1. First, sit up with the legs stretched out straight in front of you. Keep the feet together and the spine erect.
2. Bend your right leg. Place the heel of the right foot beside the left hip, and bring the left leg over the right knee.
3. Place the right hand on the left leg and the left hand behind you.
4. Gently twist your waist, shoulders and neck in this sequence to the left, looking over the left shoulder. Your spine should be erect.
5. Hold the position for a few seconds, keeping your breath steady.
6. Exhale and release the left hand first, followed by the waist, chest, and then finally the neck.
7. Sit up relaxed yet straight. Repeat with the other side.

Benefits

- ❖ The twisting position massages the abdominal organs, increasing the release of digestive juices and improving the functioning of the digestive system.
- ❖ It brings relief from stiffness, stress and tension in the back.
- ❖ By opening up the chest, it greatly increases the supply of oxygen to the lungs.
- ❖ It also loosens up the hip and makes the spine more flexible.
- ❖ It improves the circulation of blood.
- ❖ It improves the flexibility of the back muscles, leg muscles, etc. and tones the muscles.

Contraindications

1. Pregnant and menstruating women should avoid this position as the twisting of the abdomen might be too strong for them.
2. People who have had heart, abdominal or brain surgeries, and those with spinal problems and slipped discs should not practise this asana.
3. People who have severe back or neck pain should practise carefully and under the supervision of an expert.

ASANAS FOR BACK PAIN

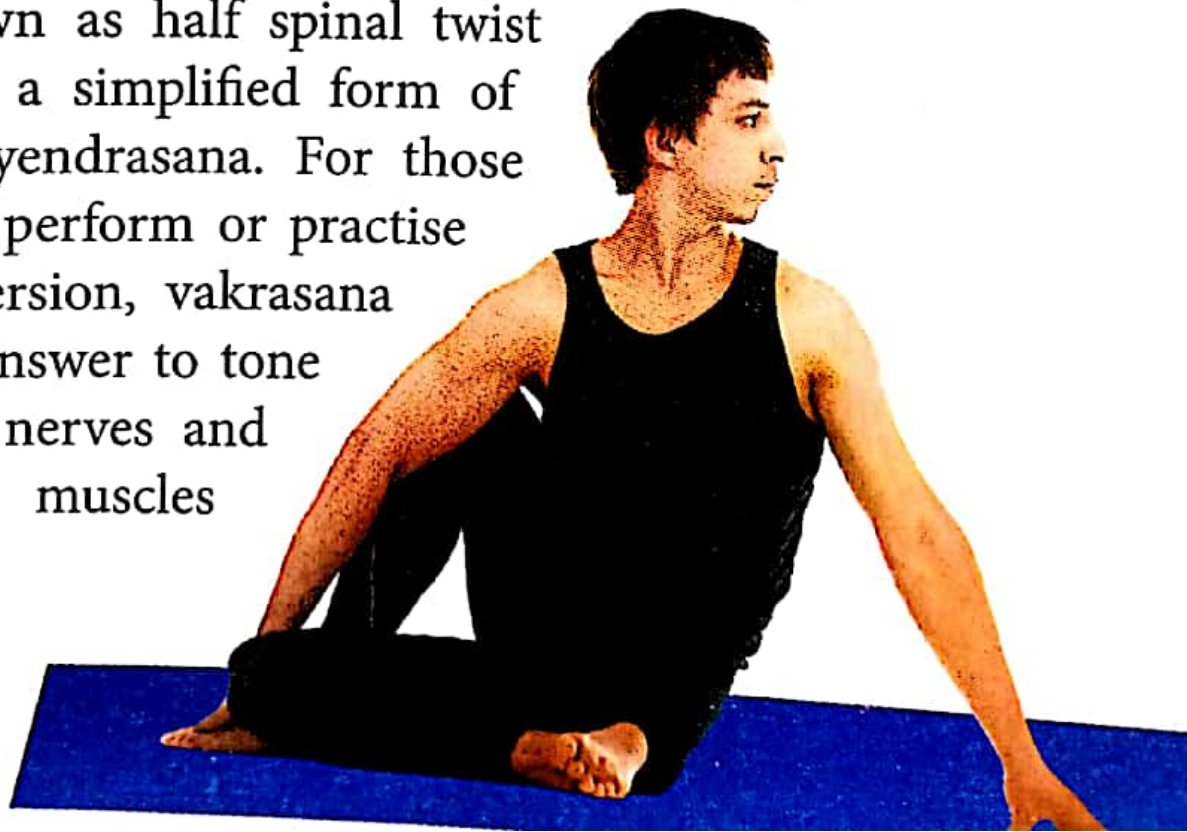
Back pain is pain felt in the back and may be neck pain (cervical), middle back pain (thoracic), lower back pain (lumbar), or coccydynia (tailbone). It may differ in intensity or duration. Sometimes, it may extend to the hands and feet.

The common causes of back pain are incorrect body posture resulting from poor build of the body or slouching due to use of electronic gadgets, accidents, excessive weight, muscle strains and/or spasms, sports injuries, lack of exercise, etc.

Vakrasana

Vakrasana ('*vakra*' meaning 'twisted') is also known as half spinal twist pose and is a simplified form of Ardha Matsyendrasana. For those who cannot perform or practise the fuller version, vakrasana can be the answer to tone their spinal nerves and abdominal muscles and organs.

Figure 12.15
Vakrasana



Procedure

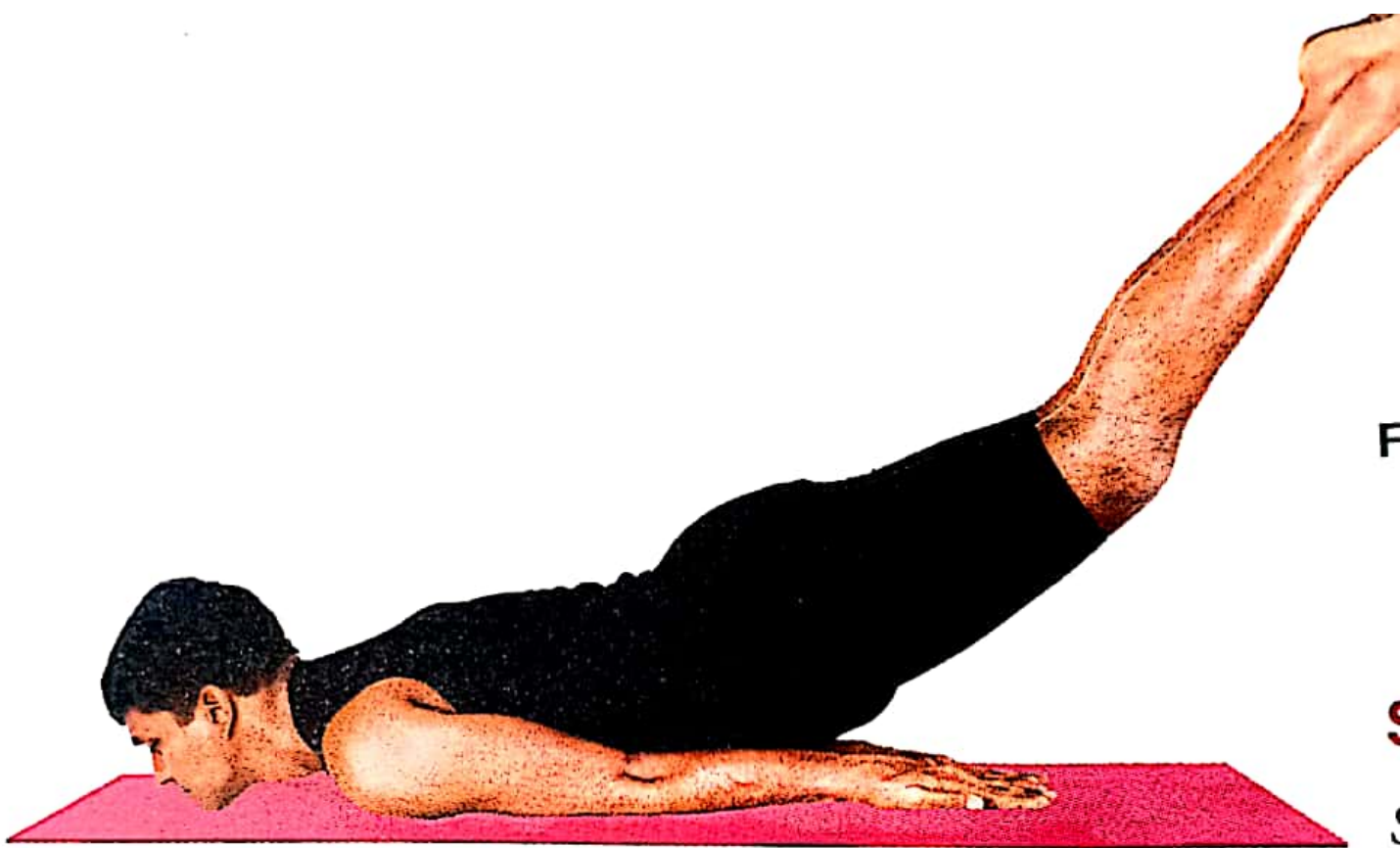
1. Sit down and stretch out your legs. Rest your hands beside your thighs or buttocks.
2. Keep your right leg straight and stretched.
3. Place your left foot beside the right knee as you keep your left knee raised upward.
4. Inhale and straighten your elbows by raising the shoulder. As you exhale, twist your body to the left by placing the right arm by the outer side of the left knee and with your right hand, hold on to the left ankle. Then place the left hand behind the back by resting the palm on the floor.
5. Turn your head backward from the left side. The final position of each stage should be held while breathing naturally. Hold the position as long as it is comfortable.
6. Next, inhale and straighten the elbow of your right arm by raising your shoulder. As you exhale, release your body that is twisted towards the left by placing your right hand by the side of the right buttock and left hand by the side of the left buttock.
7. Relax as you take a deep breath. Repeat the same steps on the other side.

Benefits

- ❖ It helps to reduce abdominal fat, which can cause back pain. It also improves the function of the spine.
- ❖ It massages the abdominal organs and enhances digestion by regulating the secretion of digestive juices.
- ❖ Among other things, it strengthens the kidneys and prevents enlargement of the liver and spleen.

Contraindications

This asana should not be performed by individuals who have ulcer and liver problems.



Shalabhasana

- *Shalabhasana* ('shalabh' meaning 'locust'), also known as locust pose because the body looks like a locust or a grasshopper, is simple to do and suitable for everybody. This asana is especially beneficial for the spine.

Procedure

1. Lie down on your stomach and place both hands underneath the thighs.
2. Inhale and lift up your outstretched right leg. Rest your chin on the ground.
3. Maintain this position for 10 to 20 seconds. Then exhale and bring back your leg to its initial position.
4. Follow the same steps with your left leg and repeat the cycle 5 to 7 times.
5. Inhale and lift up both your legs without bending the knees. Repeat the same process for both your legs 2 to 4 times.

Benefits

- ❖ It is beneficial for the disorders of the lower end of the spine, especially backache and sciatica.
- ❖ It helps in reducing extra fat around the abdomen, waist, hips and thighs.
- ❖ It has the ability to cure cervical spondylitis and spinal cord ailments if practised daily.
- ❖ It strengthens the muscles at the back.

Contraindications

1. Do not practise this asana if you have injured or weak knees.
2. Also, avoid this pose if you have an injured ankle.

ASANAS FOR HYPERTENSION

An increase in blood pressure beyond normal level is called hypertension. The main function of the heart is to supply purified blood to various parts of the body through the arteries. When the heart contracts, it pushes the blood through the blood vessels and consequently the blood pressure increases in the arteries. This pressure is called systolic blood pressure. When the heart muscle is relaxed between beats, it is said to be in diastolic mode. The systolic and diastolic pressure represent the maximum and minimum pressure respectively. Normal blood pressure at rest should be within the range of 100–140 mm/Hg systolic (which is the top reading), and 60–90 mm/Hg diastolic (bottom reading).

Hypertension may lead to strokes, aneurysms, arterial diseases and even chronic kidney diseases. It is a major cause of death throughout the world.

Causes of Hypertension

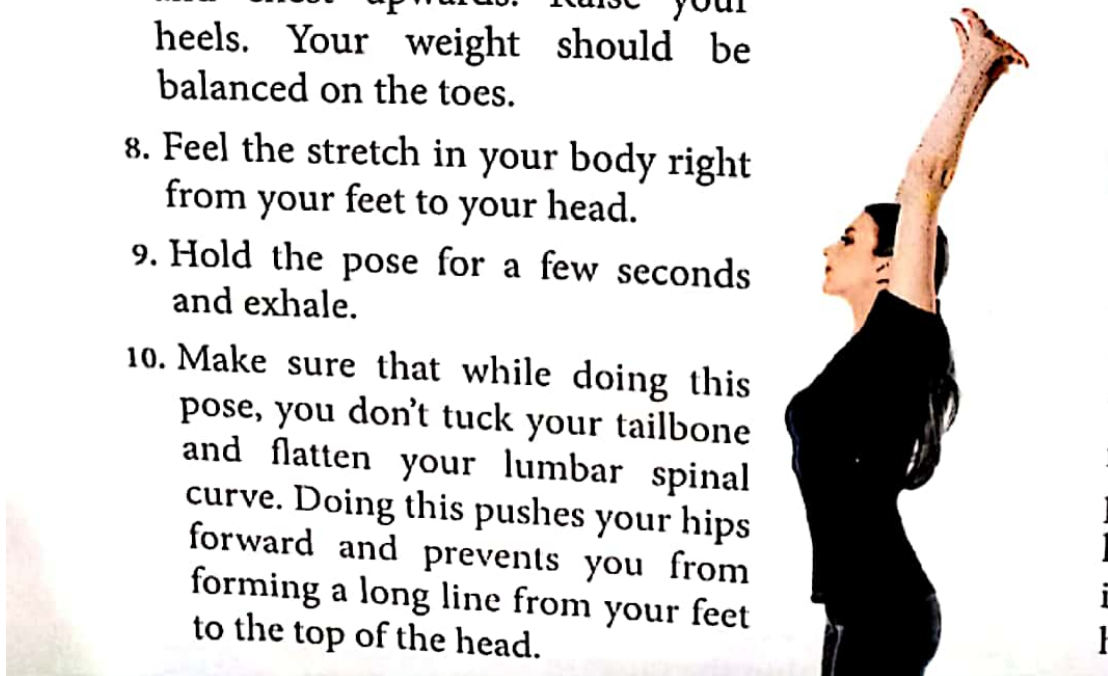
- ❖ Genetic causes
- ❖ Unhealthy lifestyle
- ❖ Obesity
- ❖ Lack of exercise

Tadasana

The prefix 'tada' means 'palm', so this asana is also referred to as palm tree pose. Alternatively, it is also called the mountain pose. It is a simple preparatory asana which can be used to warm-up before taking on complicated poses. Though it can be performed at any time of the day, it is recommended that you do it 4-6 hours after taking your meals.

Procedure

1. Stand erect with your feet together and your arms at the sides. Breathe steadily.
2. Distribute your body weight evenly on the feet. Then lift and spread your toes and the balls of your feet. Lay them gently on the ground.
3. Make your thigh muscles firm and lift your knee caps. This should be done with the relaxation of the abdominal muscles.
4. Lift your inner ankles to strengthen the inner arches.
5. Turn your upper thighs slightly inward.
6. Elongate your tailbone towards the floor and lift your pubis towards your navel.
7. Now breathe in and stretch your shoulders, arms and chest upwards. Raise your heels. Your weight should be balanced on the toes.
8. Feel the stretch in your body right from your feet to your head.
9. Hold the pose for a few seconds and exhale.
10. Make sure that while doing this pose, you don't tuck your tailbone and flatten your lumbar spinal curve. Doing this pushes your hips forward and prevents you from forming a long line from your feet to the top of the head.



Benefits

- ❖ It strengthens the chest and improves respiration, and opens up the heart and spine. The flow of blood in the arteries thus becomes more fluid and smooth.

- ❖ It enhances the nervous system, strengthening your ability to focus.
- ❖ It improves posture, and makes the buttocks and abdomen firmer.
- ❖ It strengthens the thighs, knees, and ankles, in addition to increase their flexibility.

Contraindications

1. Tadasana should be carried out with caution by those suffering from headaches, insomnia or low blood pressure.
2. Hyper extension of the knee can cause knee problems.
3. This asana should be avoided during pregnancy.

Pavanmuktasana

Pavanmuktasana ('pavan' meaning 'wind', and 'mukta' meaning 'free'), also known as wind removing pose or wind liberating pose, is a bending pose in which the practitioner lies supine to release tension in the abdomen and back area.



Figure 12.7 Pavanmuktasana

Procedure

1. Ideally, this asana should be performed in the morning in order to get rid of gas inside your body. It is particularly effective to do it as the first step of your morning routine since it will make other poses easier. If not, then allow at least four to six hours to pass after your meal.
2. Lie on your back on a smooth and flat surface and keep the legs straight and relax.
3. Inhaling slowly, raise your legs and bend the knees. Bring them gradually towards the chest till your thighs touch the stomach.
4. Clasp your hands around your legs to hug your knees. Lock your fingers to secure the position.
5. Next, try to touch the knee with the nose tip.
6. Hold this position for 20 to 30 seconds.
7. Exhale slowly and undo the pose after you roll from side to side about three to five times. Relax.
8. Practise 3 to 5 cycles daily.

Benefits

- ❖ It strengthens the abdominal muscles and massages the intestines and internal organs of the digestive system. Consequently, trapped gases are released and digestion is enhanced.
- ❖ It helps burn fat in the thighs, buttocks, and abdominal area, thereby contributing to loss of weight.
- ❖ It also brings relief from menstrual cramps and pain in the lower back.
- ❖ It boosts blood circulation in the hip areas.

Contraindications

1. Those who have had abdominal surgery recently or are suffering from hernia or piles must avoid this asana.
2. Pregnant women must avoid this asana in order to avoid causing stress to the body or causing complications.
3. It should also be avoided by patients of heart problems, hyper-acidity, high blood pressure, slipped disc, hernia, back and neck problems, or a testicle disorder.
4. An individual with a neck injury should practise this asana with her/his head resting on the floor, and only with the approval of a doctor.

ASANAS FOR DIABETES

Diabetes Mellitus, or diabetes, is a disease that causes sugar to build-up in our blood. Our body uses a hormone called insulin to control the level of sugar in our blood. When the body fails to produce sufficient amount of insulin or when insulin does not work properly, diabetes occurs. This disease, also known as 'blood sugar', is characterised by hyperglycaemia (high blood sugar level), glucosuria (glucose in the urine), polydipsia (excessive thirst) and polyphagia (excessive appetite). Tiredness, blurred vision, poor immunity, slow recovery from wounds, excessive weight gain or loss are other common symptoms.

There are three main types of diabetes:

1. **Type 1 (insulin dependent):** The pancreas gland does not produce insulin.
2. **Type 2 (insulin independent):** An inherited variety that normally appears after the age of 40 years in which cells fail to respond to insulin properly. The primary cause is excessive weight and lack of physical activity.
3. **Type 3 (gestational diabetes):** It occurs when pregnant women without a history in diabetes suddenly develop a high blood sugar level.

Bhujangasana

Bhujangasana ('*bhujang*' meaning 'cobra'), also known as cobra pose is a back bending pose which forms the eighth pose of the twelve poses of *Surya Namaskar*. It should be practised on an empty stomach; you should have taken your meals at least four to six hours before practising this pose. The best timing for performing this asana is early morning.

Procedure

1. First, you must lie flat on your stomach with forehead touching the floor. Place your hands on the side of your thighs.

2. Move your hands to the front, keeping them at the shoulder level, and place your palms on the floor.
3. Balancing your body's weight on the palms, breathe in and slowly raise your head and trunk. Your arms should be bent at your elbows at this stage.
4. Work towards arching your neck backward. This is done to assume the pose of a cobra with a raised hood. It is important that your shoulder blades remain firm and that your shoulders are away from your ears.
5. Press your hips, thighs and feet to the floor.
6. Hold the position for 15–30 seconds while breathing normally.
7. To undo the pose, slowly bring your hands back to the sides. Rest your head on the ground by bringing your forehead in contact with the floor. Place your hands under your head. Then, slowly rest your head on one side and breathe.

Benefits

- ❖ It puts the abdominal muscles and shoulders to work, increasing the circulation of the blood and oxygen in those regions, which in turn raises the body temperature and boosts the body's metabolism to levels that are beneficial at controlling diabetes.
- ❖ It fights acidity, indigestion and constipation, and helps the practitioner lose weight.
- ❖ It enhances the function of the liver, kidney, pancreas and gall bladder.
- ❖ It strengthens the arms and shoulders.

Contraindications

Contraindications

1. Those with severe back problems, neck problems, hernia and carpal tunnel syndrome and pregnant women should avoid this *yoga* pose.
2. Those suffering from stomach disorders like ulcers and intestinal tuberculosis should perform this under the guidance of a trained expert.

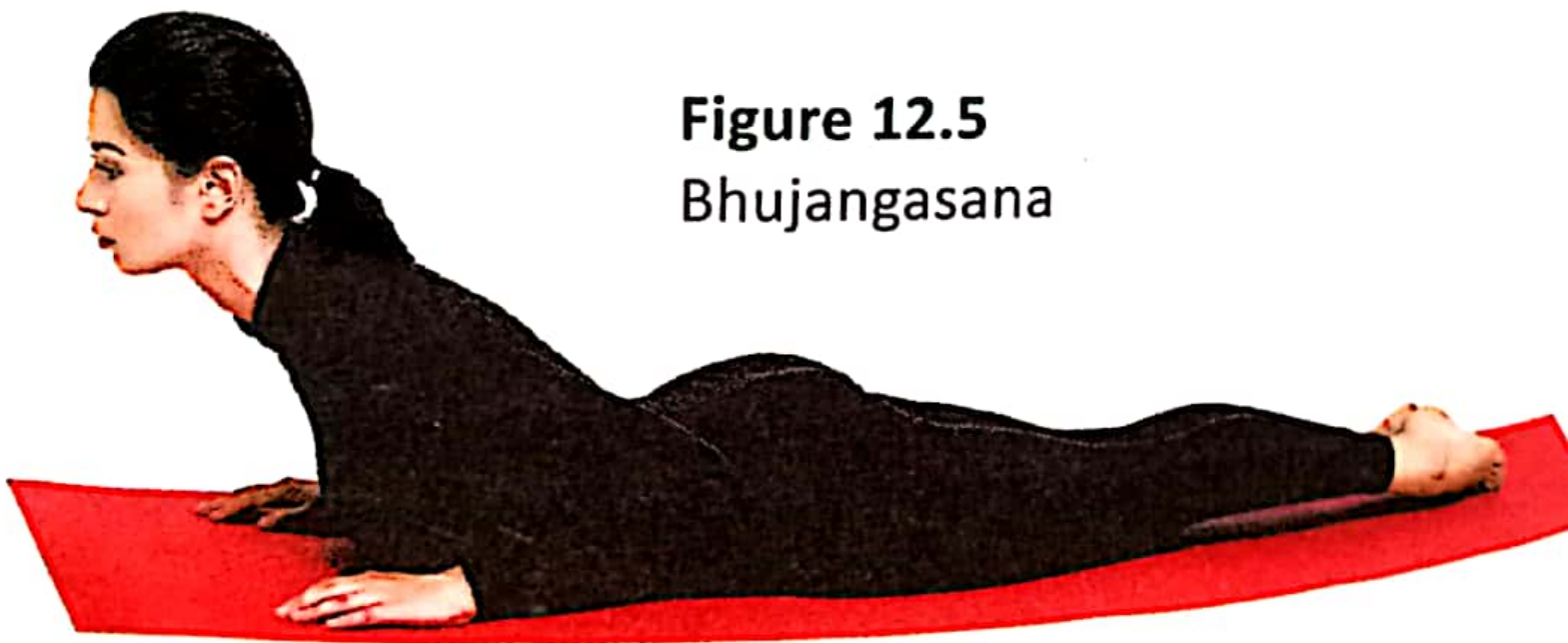


Figure 12.5
Bhujangasana



Figure 12.6 Paschimottasana

Paschimottasana

Paschimottasana ('paschim' meaning 'west', or backside of the body, and 'uttana' meaning 'stretch'), also known as seated forward bend pose is a sitting pose used for stretching the spine. It is particularly beneficial for diabetic people.

Procedure

1. The first step is to lie down on your back on a mat. Your legs should be straight.
2. Stretch your hands upward, keeping your fingers straight. Inhale deeply.
3. With your arms still stretched, slowly raise your body and sit. Your spine should be erect and toes flexed towards you. Breathe normally.
4. Slowly raise both the arms straight above your head and stretch your back. This should be done while inhaling.
5. With slow exhalation, bend forward from the hip joint. Move your chin towards the toes keeping the spine erect.
6. Place your hands on your legs without over-exerting them.
7. If you can hold your toes, pull on them to help you go forward. If not do not put undue pressure trying to achieve this step. The trick is to start with what you are comfortable with.
8. Stay in this position as long as possible. Then breathe in and rise, stretching your arms above your head.
9. Exhale and bring your arms down, placing the palms on the ground.

Benefits

- ❖ While practising paschimottanasana, the intestine and gall bladder are smoothly pressed and stimulated, enhancing their functions.
- ❖ It massages and tones the abdominal and pelvic organs and improves blood circulation.

- ❖ It also reduces belly fat and brings relief from constipation.

Contraindications

1. Pregnant women and those who have had stomach operation should avoid this asana.
2. In case of a damaged and enlarged liver and/or spleen, or if you have a herniated disc or acute appendicitis, it is advisable not to practise this asana.

ASANAS FOR ASTHMA

Asthma is a respiratory disease in which the airways become blocked or narrowed, resulting in breathing difficulty. Symptoms include extra production of mucus, excessive coughing, wheezing and shortness of breath. Asthma tends to occur in the mornings and nights – especially during the colder hours. For some people, asthma can be a serious and debilitating condition. They have to carry a nebuliser (breathing machine) around to help them recover from the attacks. It is an incurable disease, but one that can be

controlled. The causes of asthma are as follows:

1. It can be allergic or non-allergic. In the former case, attacks are often triggered by allergens in the air, including smoke and fumes, perfumes, scented soaps, etc.
2. Genetic factors are also known to cause asthma.
3. Respiratory infections such as cold, flu, sore throat and sinus infections, exercising in cold temperature, and certain medications like aspirin and non-steroid anti-inflammatory drugs are also found to be causes of asthma.

Chakrasana

Chakrasana ('chakra' meaning 'wheel') also known as *Urdhva Dhanurasana* or upward facing bow pose, is a back-bending pose commonly referred to as 'back bridge' in acrobatics and gymnastics. It is one of the final sequences in *Ashtanga Vinyasa* Yoga, the modernised version of classical yoga popularised by K Pattabhi Jois.

Procedure

1. You may begin this asana with a performance of *bhujangasana*.
2. Lie on the back with the feet parted, bend the knees and bring your feet closer to the buttocks.
3. Fold your arms and bring the palms under the shoulders. The two elbows should have a shoulder width distance between them.

Figure 12.9
Chakrasana



4. Inhale and press your palms firmly against floor.
5. Lift your shoulders using your elbows as levers. Both your palms and feet should be firmly pressed against the floor as you do this.
6. Now, raise your hips so that your spine is arched in a semicircular fashion.
7. Stretch your arms and legs as much as possible so that the hips and chest are pushed up. Hold this position for at least 15–30 seconds.
8. To release yourself from this pose, lower your head and shoulders to the floor by bending the elbows. Then bend your knees and lower your spine and hips. Breathe normally.

Benefits

- ❖ Chakrasana opens up our lungs and stretches our chest and shoulders. As this refines the act of breathing, this asana is highly advantageous for asthma patients.
- ❖ Additionally, it makes the shoulder blades, wrists, arms, legs, spine, buttocks, the heart and the muscles of the hips stronger.
- ❖ It also stimulates the thyroid and pituitary glands.

Contraindications

1. This asana is not recommended for those with carpal tunnel syndrome, back injuries, blood pressure problems, headache, diarrhoea, hernia or heart problems.
2. Pregnant women too are advised against taking up this asana.

Gomukhasana

Gomukhasana ('go' means 'cow' and '*mukha*' means 'mouth' or 'face') is also known as cow face pose. It is so named because the overall position of the thighs, calves and feet of the person has the appearance of the face of a cow when viewed from above. This position must be practised on an empty stomach and after bowel movements. It is best to do it in the morning.

Procedure

1. Sit on the floor with your legs stretched out in front of you. Your spine should be erect.
2. Gently bend your left leg and bring it under your right leg so that the calf rests beneath the right hip. Fold your right leg and position the calf above the left thigh.



Figure 12.10 Gomukhasana

3. Stack your right knee on top of the left one.
4. Now fold your left arm and place it behind your back. The elbow should point downwards. Fold your right arm and bring it behind the shoulder with the elbow pointing upwards.
5. Stretch your arms till the two hands are touching each other. Do not worry if you cannot achieve this the first time.
6. Still keeping the spine straight, open up your chest, then lean back slightly.
7. Hold this pose for as long as you can, taking deep and slow breaths.

Benefits

- ❖ This asana strengthens the chest and eases breathing. It also gets rid of stiffness in the shoulders and the back.
- ❖ It also trains an individual to breathe correctly by making her/him focus on her/his own breathing.
- ❖ Additional benefits include relaxation, stretching of muscles, and bringing relief from frequent urination.

Contraindications

1. This asana should be avoided by those who have ailments of the knee, back and neck.
2. Overweight individuals should start slowly and not exert themselves beyond comfortable limits.

*Senior
Citizen
Fitness Test*

Even in old age, people want to be fit and be able to continue to do their work without pain as long as possible. It requires proper fitness regime during old age. In the beginning, there were not enough tests to assess functional fitness. This test is also known as **Fullerton Functional Test** of senior citizens. **Rikli and Jones** developed the Senior Citizen Fitness Test in 2001. This test has proved to be beneficial for senior citizens. It helps the early identification of at-risk participants. Along with this, it is significant to plan safe and effective physical exercise programmes for senior citizens because individual's health and fitness level can be known better with the help of this test. The Senior Citizen Fitness Test includes the following test items.

A. Chair Stand Test

Purpose. The main purpose of this test is to measure the lower body strength, particularly the strength of legs which is usually required for various tasks such as climbing stairs, getting in and out of vehicles, bath tub or chair.

Equipment Required. A chair with a straight back and a seat of at least 44 cm and a stopwatch.

Instructions for Participants

1. The participant should sit in the middle of the chair.
2. He should keep his hands on the opposite shoulder crossed at the wrists.
3. The feet should be flat on the floor.



Chair stand test

4. His back should be erect.

5. Repeat standing up and sitting down for 30 seconds.

Administration of Test: Keep the chair against the wall. The participant sits in the middle of the seat. His feet should be shoulder width apart and flat on the floor. The arms should be crossed at the wrists and held close to the chest. From the sitting position, the participant should stand up completely and then sit down completely at the start of the signal. This is repeated for 30 seconds. Count the total number of complete chair stands. In case the participant has completed a full stand from the sitting position when the time is finished the final stand is counted in the total.

Scoring. The score is the total number of completed chair stands during the given 30 seconds. The following table shows the recommended ranges for this test for different age groups.

Recommended Ranges for Chair Stand Test

Norms for Men			
Age	Below Average	Average	Above Average
60-64	<14	14 to 19	>19
65-69	<12	12 to 18	>18
70-74	<12	12 to 17	>17
75-79	<11	11 to 17	>17
80-84	<10	10 to 15	>15
85-89	<8	8 to 14	>14
90-94	<7	7 to 12	>12

Norms for Women			
Age	Below Average	Average	Above Average
60-64	<12	12 to 17	>17
65-69	<11	11 to 16	>16
70-74	<10	10 to 15	>15
75-79	<10	10 to 15	>15
80-84	<9	9 to 14	>14
85-89	<8	8 to 13	>13
90-94	<4	4 to 11	>11

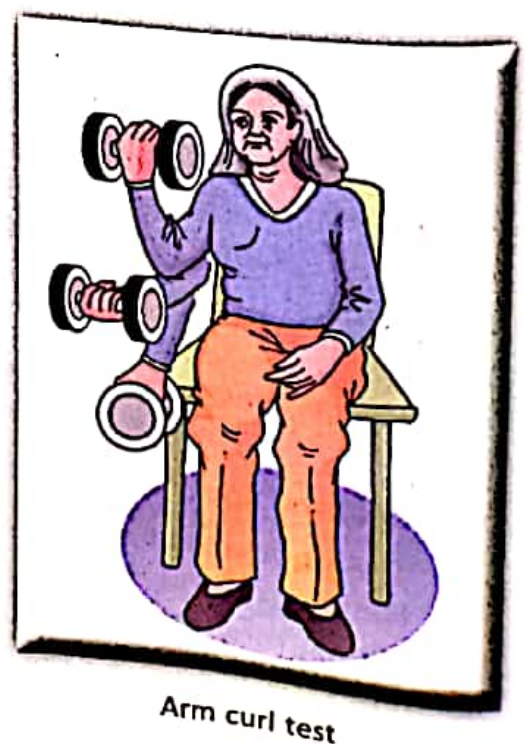
B. Arm Curl Test

The arm curl test is a test to measure the upper body strength. It is a part of the senior citizen fitness test. It is designed to test the functional fitness of aged people.

Purpose: The main purpose of this test is to assess the upper body strength and endurance which is required for performing household and other activities involving lifting and carrying things.

Equipment Required: A 5-pound weight for women and a 8-pound weight for men, a chair without arms and a stopwatch.

Procedure: The aim of the test is to find out the maximum number of arm curls that one can complete in 30 seconds. Arm curl is performed with the dominant arm side. The participant sits on the chair, holds the weight in the hand using a suitcase grip. It means the palms should be facing towards the body. The arm should be in



a vertically downward position. The upper arm should not move but lower arm should move freely. Curl the arm up through a complete range of motion gradually keeping the palm up. When the arm is lowered through the complete range of motion, gradually return to the starting position. The arm should be completely bent and then completely straightened at the elbow. This complete action should be repeated by the participant as many as times as possible within 30 seconds.

Scoring. The score is the total number of arm curls performed within the given 30 seconds duration. The following table shows the recommended ranges for the test for different age groups.

Recommended Ranges for Arm Curl Test

Norms for Men			
Age	Below Average	Average	Above Average
60-64	<16	16 to 22	>22
65-69	<15	15 to 21	>21
70-74	<14	14 to 21	>21
75-79	<13	13 to 19	>19
80-84	<13	13 to 19	>19
85-89	<11	11 to 17	>17
90-94	<10	10 to 14	>14

Norms for Women			
Age	Below Average	Average	Above Average
60-64	<13	13 to 19	>19
65-69	<12	12 to 18	>18
70-74	<12	12 to 17	>17
75-79	<11	11 to 17	>17
80-84	<10	10 to 16	>16
85-89	<10	10 to 15	>15
90-94	<8	8 to 13	>13

C. Chair Sit-and-Reach Test

Purpose: To assess the lower body flexibility, which is important for good posture, normal gait patterns and various mobility tasks such as getting in and out of bath tub or car.

Equipment required: Ruler, a chair with straight back approximately 44 cm high.

Procedure: The participant sits on the edge of the chair (kept against a wall for safety purpose). One foot should remain flat on the floor while the other leg should be extended forward with the knee in straight position.

Heel should be on the floor and ankle should be bent at 90°. Place one hand on the top of the other with tips of the middle fingers at the same level. Instruct the participant to inhale and then as he exhales, reach forward towards the toes by bending at the hip. His back should be straight and head up. Avoid any jerk or bounce and never stretch too much. Keep the knee straight and hold the reach for 2 seconds. The distance is measured between the



Chair sit-and-reach test

tip of the finger tips and the toes. If the finger tips touch the toes then the score is zero. If they do not touch, measure the distance between the fingers and the toes (negative score). If they overlap, measure the distance (positive score).

Scoring. The score is noted down to the nearest 1/2 inch or 1 cm as the distance reached either a negative or positive score. The following table shows the recommended norms in inches for this test for the different age groups.

Recommended Ranges for Sit-and-Reach

Norms for Men (in inches)				Norms for Women (in inches)			
Age	Below Average	Average	Above Average	Age	Below Average	Average	Above Average
60-64	<-2.5	- 2.5 to 4.0	>4.0	60-64	<- 0.5	- 0.5 to 5.0	>5.0
65-69	<-3.0	- 3.0 to 3.0	>3.0	65-69	<- 0.5	- 0.5 to 4.5	>4.5
70-74	<-3.5	- 3.5 to 2.5	>2.5	70-74	<- 1.0	- 1.0 to 4.0	>4.0
75-79	<-4.0	- 4.0 to 2.0	>2.0	75-79	<- 1.5	- 1.5 to 3.5	>3.5
80-84	<-5.5	- 5.5 to 1.5	>1.5	80-84	<- 2.0	- 2.0 to 3.0	>3.0
85-89	<-5.5	- 5.5 to 0.5	>0.5	85-89	<- 2.5	- 2.5 to 2.5	>2.5
90-94	<-6.5	- 6.5 to 0.5	>- 0.5	90-94	<- 4.5	- 4.5 to 1.0	>1.0

D. Back Scratch Test

Purpose: This test helps to assess the upper body (shoulder) flexibility, which is essential for a person to perform various jobs such as combing hair, putting on overhead garments, reaching for a seat belt, etc.

Equipment Required: A ruler.

Procedure: This test is performed in a standing position. Keep one hand behind the head and lower it down gradually over the shoulder and reach as far as possible at the middle of your back. Your palm should touch your body and the fingers should be downwards. Then carry your other arm behind your back with palm facing outward and fingers facing upward and try to reach up as far as possible in order to touch or overlap the middle finger of the other hand. Fingers should be aligned. Measure the distance between the tips of the fingers.

If the finger tips touch then the score is zero. If they do not touch measure the distance between the fingertips (negative score). If they overlap measure the distance (positive score). Let the participant practise twice and then two trials be conducted.



Back scratch test

Scoring. Record the best score out of the two trials to the nearest centimetre or 1/2 inch. The following table shows the recommended norms (in inches) for this test for different age groups.

Recommended Ranges for Back Scratch Test

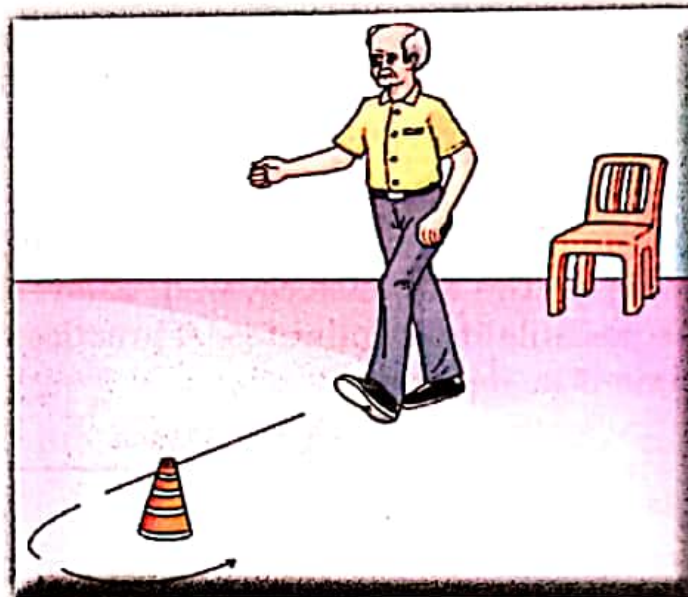
Norms for Men (in inches)				Norms for Women (in inches)			
Age	Below Average	Average	Above Average	Age	Below Average	Average	Above Average
60-64	>6.5	6.5 to 0	<0	60-64	>3.0	3.0 to 1.5	<1.5
65-69	>7.5	7.5 to -1.0	<-1.0	65-69	>3.5	3.5 to 1.5	<1.5
70-74	>8.0	8.0 to -1.0	<-1.0	70-74	>4.0	4.0 to 1.0	<1.0
75-79	>9.0	9.0 to -2.0	<-2.0	75-79	>5.0	5.0 to 0.5	<0.5
80-84	>9.5	9.5 to -2.0	<-2.0	80-84	>5.5	5.5 to 0	<0
85-89	>10.0	10.0 to -3.0	<-3.0	85-89	>7.0	7.0 to -1.0	<-1.0
90-94	>10.5	10.5 to -4.0	<-4.0	90-94	>8.0	8.0 to -1.0	<-1.0

E. Eight Foot Up and Go Test

This test is conducted to assess coordination and agility in aged people.

Purpose: This test helps to evaluate speed, agility and balance of a person while moving. These are important factors in performing jobs which require quick manoeuvring, such as getting off a bus in time, to answer the phone, etc.

Equipment Required. A chair with straight back (about 44 cm high), a stopwatch, cone marker, measuring tape and an area without any hindrances.



Eight foot up and go test

Procedure: Keep a chair next to the wall and place the cone marker 8 feet away in front of the chair. The participant is initially completely seated, hands resting on the knees and feet flat on the ground. On the command 'Go', stopwatch is switched and the participant stands and walks (no running at all) as quickly as possible towards the cone, turns around and returns to the chair to sit down. Time is noted as he sits down on the chair. Two trials are given per participant.

Scoring. The best trial is recorded to the nearest 1/10th second. The table shows the recommended norms or ranges in seconds for this test for different age groups.

Recommended Ranges for Eight Foot Up and Go Test

Norms for Male (in Seconds)			
Age	Below Average	Average	Above Average
60-64	>5.6	5.6 to 3.8	<3.8
65-69	>5.7	5.7 to 4.3	<4.3
70-74	>6.0	6.0 to 4.2	<4.2
75-79	>7.2	7.2 to 4.6	<4.6
80-84	>7.6	7.6 to 5.2	<5.2
85-89	>8.9	8.9 to 5.3	<5.3
90-94	>10.0	10.0 to 6.2	<6.2

Norms for Female (in Seconds)			
Age	Below Average	Average	Above Average
60-64	>6.0	6.0 to 4.4	<4.4
65-69	>6.4	6.4 to 4.8	<4.8
70-74	>7.1	7.1 to 4.9	<4.9
75-79	>7.4	7.4 to 5.2	<5.2
80-84	>8.7	8.7 to 5.7	<5.7
85-89	>9.6	9.6 to 6.2	<6.2
90-94	>11.5	11.5 to 7.3	<7.3

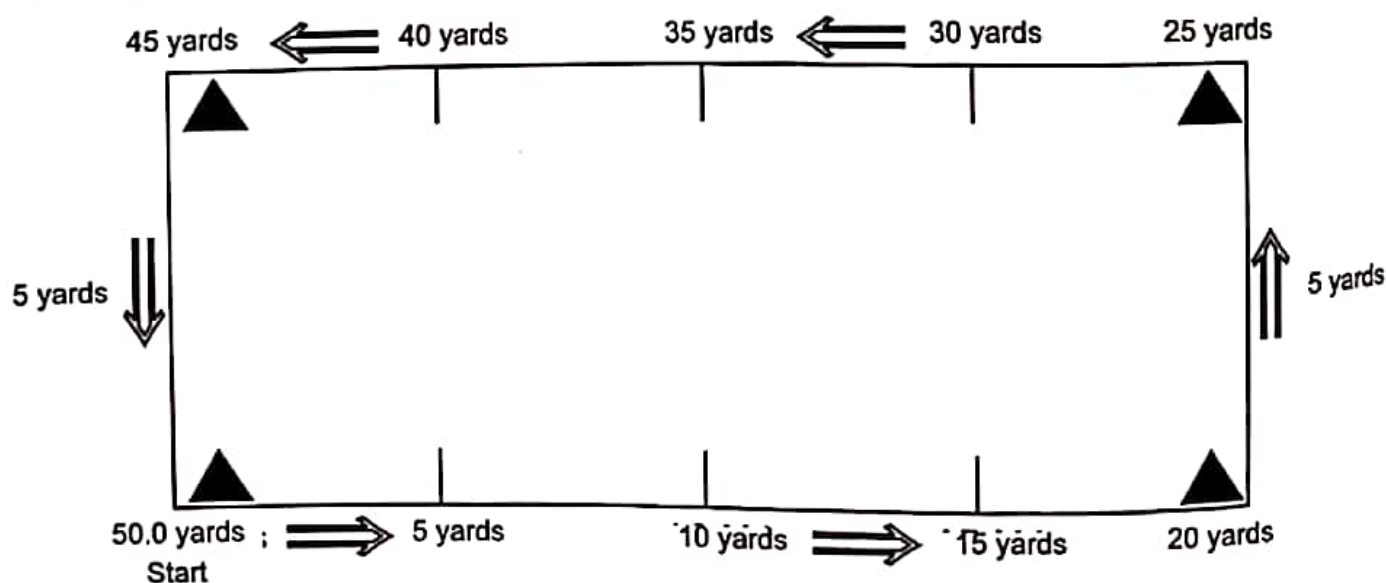
F. Six-minute Walk Test

The six-minute walk test is designed to test the functional fitness of senior citizens.

Purpose. This test helps to assess the aerobic fitness or aerobic endurance of a person which is an essential component for walking distances, stair climbing, shopping, sightseeing, etc.

Equipment Required. A measuring tape, a stopwatch.

Procedure: The walking distance or course is marked i.e., 45.72 m or 50 yards in a rectangular area (20×5 yards) of 5 yards with cones placed at regular intervals to indicate the distance covered. Efforts are made to walk maximum distance as quickly as possible in six minutes. A practice trial is given to the participant. He may stop any time if he desires so.



Six-minute Walk Test

Scoring. The total distance covered in six minutes is recorded to the nearest metre.

Recommended Ranges for Six-Minute Walk Test

Norms for Male (in yards)				Norms for Female (in yards)			
Age	Below Average	Average	Above Average	Age	Below Average	Average	Above Average
60-64	<610	610 to 735	>735	60-64	<545	545 to 660	>660
65-69	<560	560 to 700	>700	65-69	<500	500 to 635	>635
70-74	<545	545 to 680	>680	70-74	<480	480 to 615	>615
75-79	<470	470 to 640	>640	75-79	<430	430 to 585	>585
80-84	<445	445 to 605	>605	80-84	<385	385 to 540	>540
85-89	<380	380 to 570	>570	85-89	<340	340 to 510	>510
90-94	<305	305 to 500	>500	90-94	<275	275 to 440	>440