

INTRODUCTION

Table tennis is a game that is quite similar to lawn tennis. It is played by two or four players. The equipment required for playing table tennis include a table, wooden paddles and a small hollow plastic ball. Like in lawn, the table has a net, which divides the playing area into two portions. During the service, the ball must bounce once before clearing the net and should again bounce before being struck by the player at the other end. However, the player who returns the ball back should not let it bounce again on his side once striking the ball. In a table tennis game, a player scores a point when his opponent's service does not land properly or when his opponent's ball is not returned properly. Players require serving two times in a row. The player who first earns 11 points wins the game. In table tennis, the service is done with the ball resting freely on the open palm of the server's stationary free hand. Then the server tosses the ball upwards and strikes it as it begins to fall, bouncing it once on his side before it passes over the net and bounces on the opponent's side.

Historical development of table tennis

In this century, table tennis is the most exciting new sports to reach major status and world-wide acclaim. With the possible exception of the North Pole, it is played in every country in the world and its continued expansion and development is a phenomenon of sports history. There is countless good reason for this incredible success. It's a wonderful game with a wonderful story. In its wide scope and adaptability it has so much to give to every age and physique. It is the easiest game for every member of the family to learn, but in this wide range it can also be the most difficult. In no other sport is there so broad and universal and appeal which, in its higher phases, combines the psychology of bridge, the grace of eurhythmics. It is played in royal palaces, universities, stadia, halls, school, factories, and even in the back street of African towns. Men and women of every walk of life, of every rank, in every country have acclaimed it. As a spectacle, big time table tennis draws crowds in tens of thousands.

Like most other sports, table tennis had humble beginnings as a "parlor game," open to anyone with access to a table, paddle, and ball. The game began in the 1880s, when lawn tennis players adapted their game to play indoors during the winter. Ping-Pong is a trademark name for table tennis and associated equipment. The name "Ping-Pong" was invented by the English firm J. Jacques and Son at the end of the 1800s. The game quickly caught on, and as early as 1901, tournaments were being conducted with over 300 participants. The Ping-Pong Association was formed but was renamed The Table Tennis Association in 1922. In 1922, an All England Club

was formed, which boasted such luminaries as Jack Hobbs the cricketer and other famous names of the time from the world of sport Table tennis was firmly on the map, and on April 24, 1927, the English Table Tennis Association was born, under the chairmanship and direction of Iv or Montague, son of Lord E watt ling. The 1950s saw the game turned upside down by the invention of the sponge or sandwich rubber, this new material for bats, which, up until now, had been a relatively simple affair with a universal thin covering of pimpled rubber. Until this time, spin had played only a minor part in a game that had been dominated by the defensive style of play. The ITTF, the game's governing body, was quick to legislate in a bid to control this new development, seen in some quarters as equipping players with an unfair advantage. The thickness of the sponge and rubber sandwich was controlled and remains so to this day. The culmination of this has been its recognition as an Olympic Games sport, being featured for the first time in the 1988 games in Seoul. Chinese top players are regarded as national heroes with pop star statuses.

MEASUREMENTS OF COURT

- For full size table tennis table, the upper surface is called the playing surface and it requests for certain elasticity and even bounce of ping pong ball.
- The full table tennis table size is 2.74 meters long, 1.525 meters width and 76 centimetres height measure from the ground.
- In parallel with the horizontal, the table needs to paint with dark colour.
- The long line is called long edge line while the short line is called the end line.
- There is a 3mm (1/8 inches) width of white line in the mid of the table which is called the centre line and is use when playing in doubles games. The area was divided into left and right portions and a net is placed between the 2 portions of the table

Standard Dimensions of Table Tennis Table:

In mm: Length: 274cm Width: 15.25 cm Height: 760 cm Net Height: 152.5 cm.

In feet: Length: 9.0 ft Width: 5.0 ft Height: 2.5 ft Net Height: 0.5 ft

In inches: Length: 107.87 inches Width: 60.0 inches Height: 29.92 inches Net Height: 6.0 inches

While for folding or foldable type, the dimensions of the table tennis table when folded into half would be: $22''(W) \times 60.25''(L) \times 65.75''(H)$.

FUNDAMENTAL SKILLS

The Shake hand Grip

The Shake hand Grip is actually a family of different styles, each with very minor variations. It is possibly the oldest and most common grip in the sport, with virtually all Western players and roughly two thirds of Asian players using this grip. We hold the handle in the palm of our hand and let the bat head fit snugly into a "V" shape formed by your thumb and first finger. For better control, let our thumb and first finger lie roughly parallel with the straight edge of the rubber at the base of the racket head. The remaining three fingers should then be wrapped around the handle to provide stability

The Pen hold Grip

The Pen hold Grip is also a family of styles, but they have greater variations from each other as compared to the Shake hand family. The three most popular Pen hold Grips are the Traditional Chinese Grip, the Reverse Pen hold Backhand Chinese Grip, and the Japanese/Korean Grip.In general however, the racket is handled as one would grip pen, with the thumb and index finger, while the rest of the fingers are either curled or spread on the other side. In the Traditional Chinese Grip, players hold a shortened handle, with the three remaining fingers resting against the other side."Japanese" paddles have a raised handle, which is called a "hook." The index finger curls around the "hook" for extra leverage.

Basic Drives techniques

- 1. **Fore hand drive** Once mastered, the forehand drive will become one of your most used table tennis shots. It forms the basis for more advanced strokes such as the block, the loop and the counter loop, so it's really important to develop a strong and consistent stroke.
- 2. **Back hand drive**. The backhand drive is an attacking stroke played with a small amount of topspin. It is a drive shot and nota topspin loop. The backhand drive is played against long or medium length topspin or float balls
- 3. Fore hand push- The fore hand push is the third basic table tennis stroke to master and it's probably the most difficult of the four. A push is more of a defensive shot than the drive and the aim is to play down the back and underneath the ball to create some back spin.
- 4. **Back hand push** is probably the easiest stroke to learn. A push is more of a defensive shot than the drive and the aim is to play down the back and underneath the ball to create some back spin, making it more difficult for our opponent to attack the ball.

ADVANCE SKILLS

1. THE LOOP

The loop drive is the primary attacking stroke of serious players today. A loop is basically a spinney counterpart of a drive, emphasizing topspin over forward motion.

- a) **Forehand loop** from the ready position, bring the right foot slightly back. At the same time, rotate your body backward and slightly down, depending on which spin you are playing against.
- b) **Backhand loop-** This time the back swing goes in front of our legs, and to do so we should drop our right shoulder somewhat.

2. THE CHOP

The chop is the mainstay of advanced defensive player. Essentially an extreme backspin shot, the ball tends to travel in a very flat trajectory and bounce low. Chops are always taken when the ball is dropping, often below the table up to 15 feet away.

- a) **Forehand chop** Back up, depending upon the speed of the incoming ball. At the same time put your weight on the back foot. Bring the arm back and paddle up, while rotating your waist.
- b) **Backhand chop** Similar to the forehand chop brings the paddle up and the wrist back while rotating the waist. Transfer weight to back foot. Snap the wrist and follow through all the way.
- **3. THE FLIP** The flip is one alternative to the push in taking short balls. By allowing one to return such ball faster, it can provide an element of surprise. The nature of the flip requires a special foot position for support.
- i. **FOREHAND FLIP-** Bend the wrist back. Slide the right foot forward, then will the racket open, moves it under a dropping short ball. When the ball touches the paddle, immediately rotate the wrist and move the arm forward and up grazing it.
- **ii.** BACKHAND FLIP- Bend the wrist back. With right foot forward, execute a mini loop with extra wrist and follow through.

CONCLUSION

Table tennis has many factors to be studied; many important scientists and the NASA (National Aeronautical and space administration) had made many studies about this complicated sport in many aspects, starting from how the physics intervene in muscular and mental factors of table tennis. This sport has 3 principles features which are the physics including the gravity, Magnus effect, Newton laws, etc. the other one are mental processes in which are included brain structures, strategies and the benefits of these sport to the brain. Finally in the 3rdpoint is the muscular part, starting from the meal plan, physical preparation and muscular use and conjunction. Table tennis is a very interesting sport to be studied because of its lots of physical phenomena such as the most important, gravity which has been studied through hundreds of years, and how this sport can defies many of its laws.
