



Ibrahim Elhusseiny Hamadtou of Egypt serves during a match against Hong Kyu Park of South Korea. Photo Credits: Remy Gros, ITTF

# GAME ON

**How Table Tennis is Designed to be one of the Most Inclusive Sports in the World**

by **Meher Gulati**



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Few sports are as ubiquitous as Table Tennis. It requires a relatively small playing arena as well as a low investment to get started. After a few rounds of knocks, the player will realize the subtle nuances behind effectively getting the ball across the net towards the opponent. With a little more practice, the player can learn how to spin the ball and counter spin shots themselves. After gaining some more confidence, the player can start exploring the backhand. As a regular player myself, I learn something new every time I pick up the racket. It is an extremely rewarding experience.

Table tennis started in Victorian England, as an upper-class after dinner parlour game. Almost a century-and-a-half later, table tennis is now one of the most popular sports globally. In fact, Para Table Tennis is played in more than 100 countries, and has the 3rd highest number of participants of any Paralympic Sport. This is a testament to the constant effort of the International Table Tennis Federation and their design-choices related to the organization of the sport. Karine Teow, Field Programmes Manager at ITTF Foundation writes, "Accessibility is not optional – it is about inclusion, diversity, and human rights, but also design."

There is much that we can learn from this inclusive design success-story.

Pablo Perez, Technical Operations Manager of the recently held Table Tennis tournament at the Paralympics Games told me, "Para Table Tennis is just Table Tennis + classification". So before we explore classification, it is important to know more about Table Tennis itself. As designers, we want to know what already works well, and why it works well before trying to make any modifications. In the case of table tennis, it is useful to study elements of regular table tennis as-is, and then explore additional modifications that will need to be designed for Para-athletes. The eponymous "table" is rectangular, 2.74 m long and 1.525 m wide, and is 76 cm above the floor. The ball is spherical, has a diameter of 40mm and weighs 2.7 g. The racket is on average 17 cm long and 15 cm wide, and weighs less than 300 g. The playing space is rectangular and not less than 14 m long, 7 m wide and 5 m high. In short, these numbers simply mean that the equipment can be handled equally well by athletes as well as Para-athletes. Even the relatively smaller playing area means the athletes need to cover a smaller distance during play, allowing for more accessibility. In addition to non-marking table-tennis shoes, there is no other specialized equipment or clothing needed to play table tennis, even at the highest levels of competition.

***The uncomplicated and wieldy equipment needed for table tennis serves as an open-invitation for anyone wanting to try the sport, regardless of their physical or mental capabilities.***



Almost 300 competitors participated in 31 events at the 2020 Tokyo Paralympic Games. There are 11 classifications in table tennis - 1 to 5 are assigned to athletes who compete in wheelchairs, 6 to 10 for athletes who can stand, and class 11 is for athletes with intellectual impairment. Illustration: Author



Now that we know which elements from regular table tennis provide a conducive environment for Para table tennis, we can now learn more about the specific design decisions that result in making the sport more inclusive. These design decisions are classification, allowing the use of adaptive equipment, as well as modifications to the rules. Mr. Perez said, "classification is the fabric of Paraspot." The official ITTF Classification Rulebook describes the need for this process as follows: "Classification is undertaken to define who is eligible to compete in Para Table Tennis and consequently who has the opportunity to reach the goal of becoming a para Athlete, and to group athletes into Sport Classes which aim to ensure that the impact of Impairment is minimised and sporting excellence determines which Athlete or team is ultimately victorious." In other words, this document outlines how the sport is designed to ensure as many people as possible are able to compete in competitions, and that the nature of their disability doesn't prevent them from participating competitively.

The ITTF has undertaken an immense effort to create the classification process, which involves appointing qualified staff and medical assessment of every Para-athlete to ensure that classification is fair and fosters the spirit of competition. For an athlete to participate in Para Table Tennis, they must have an "eligible impairment" as outlined in the rulebook. Following that, the athlete is allocated into an appropriate class in which they can compete. Depending on the severity of the impairment, there are 11 classes in which an athlete can be placed.

***Only athletics, swimming and table tennis enable such a wide range of athletes to participate, making table tennis one of the most inclusive sports in the world.***



Bhavina Patel serves during her gold-medal match against World No.1 Zhou Ying of China. Photo Credits: Remy Gros, ITTF

In addition, the athletes are permitted to use a range of adaptive equipment such as wheelchairs, orthotic devices, crutches, canes and other prosthetic devices to enable the motor skills necessary for playing the sport. Even the rules of the game are modified such that they take into account the constraints of the athletes. For example in the wheelchair category, if during a serve the ball returns in the direction of the net after touching the receiver's court, it is considered a "let" (the point is played again). Rules such as these are created after deep consideration and deference to the specific needs of a particular type of athlete. Because players in wheelchairs are by definition restricted in their reach, hitting the ball such that it returns back towards the net is considered unfair. The players are even allowed up to 10 minutes of medical recovery time if the athlete is unable to play temporarily due to the nature of their disability. The benefits of designing table tennis to be more inclusive go beyond the competitive arena.

Dr. Rajat Kathuria, Dean, School of Humanities and Social Sciences at Shiv Nadar University, told me how Table Tennis is also prescribed in the treatment of Alzheimer's disease. In

a Japanese study, MRI scans showed that table tennis engages up to five regions of the brain, thus increasing awareness and preserving cognitive functions.

One way to think about "design" is that it is a bridge between people who have the skills to create something new and people who have needs but don't have the skills, time or money to create it for themselves. At the core of every design process is the fundamental need to empathize with the user. As Cliff Kuang asks in his book "User Friendly": "When empathy becomes an imperative, the question becomes: With whom should you empathize?" The ITTF has emphatically answered this question in their motto: "Table Tennis. For All. For Life." A broader goal that the ITTF has is to not only make table tennis more inclusive, but also to use table tennis to break down other mental and physical barriers and enable people to make contributions to the Sustainable Development Goals through their pursuit of excellence in the sport. The design implication here is realizing that there should be a broader goal to strive towards, and that deciding this broader goal should be one of the first choices that we must make as designers.



Bhavina Patel poses after winning the historic table tennis silver. She became the first Indian to win a medal in Table Tennis at the Paralympic Games. Photo Credits: Remy Gros



Modified rackets with increased grip are placed on the table before a match. Photo credits: Remy Gros, ITTF

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