

Wheelchair Tennis



A First Introduction Resource Manual



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Introduction

This manual is intended as a reference for tennis coaches, recreation practitioners or anyone else interested in integrating wheelchair tennis into their current programming. Along with a sports chair provided by BC Wheelchair Sports Association (BCWSA) this manual should allow any tennis club to give a new participant an introduction to wheelchair tennis.

If you have any questions or would like further information about wheelchair tennis, BC Wheelchair Sports Association, or the Tennis Canada Wheelchair Tennis Instructors Course please contact your provincial wheelchair sport organization. BC Wheelchair Sports Association can be reached at info@bcwheelchairsports.com.

BC Wheelchair Sports Association would like to gratefully acknowledge viaSport, the Province of BC and the Government of Canada for their support in the production of this manual.

Wheelchair Tennis

History

Wheelchair Tennis was started in California in 1976 by 18 year-old Brad Parks after he was injured in an acrobatic skiing accident. Brad began hitting tennis balls from his day chair following rehab and later met Rehab Therapist Jeff Minnenbraker who had also for some time been interested in the possibility of wheelchair tennis. Over the next few years the pair developed tennis-specific wheelchairs and promoted the sport through camps and exhibitions across California. The first wheelchair tennis tournament took place in 1977 and in 1980 the National Wheelchair Tennis Foundation was officially formed.

Timeline

1977 – First Wheelchair Tennis Tournament

1980 – National Wheelchair Tennis Foundation is formed

1982 – France becomes the first country in Europe with a wheelchair tennis program

1985 – 1500 players compete in 40 sanctioned tournaments in the US alone

1985 – World Team Cup established with 6 men's teams

1988 – International Wheelchair Tennis Federation founded

1992 – Tennis Australia becomes the 1st country to employ a full-time coordinator for wheelchair tennis

1997 – Wheelchair tennis becomes a fully integrated part of International Tennis Federation (ITF)



Brad Parks

Wheelchair Tennis in Canada

Tennis Canada is the official governing body of wheelchair tennis in Canada and supports a competitive National Team program for the top Canadian players which includes competing nationally and internationally, and at World Team Cup. To grow the coaching capacity in the country Tennis Canada also supports a Wheelchair Tennis Instructors Course and coordinates with provincial tennis associations to support its athletes.

In BC, BC Wheelchair Sports Association (BCWSA) is the provincial sport organization for wheelchair tennis. BCWSA offers introductory sessions, beginner lessons, fun tournaments and special events as well as a wheelchair loan program to grow the sport of wheelchair tennis in BC.

National and International Competition

The Canadian tournament circuit consists of 6 ITF tournaments and the Birmingham National Championships. The circuit provides international competitive opportunities from the ITF Futures to ITF 2 Series levels including the ITF3 Vancouver International Wheelchair Tennis Tournament and the ITF Futures oops Legacy Games – hosted by BC wheelchair Sports Association. The National Championship are open to all Canadian players with the aim of developing wheelchair tennis in Canada. Additional provincial level tournaments, leagues and fun tennis days are organized regularly by Tennis Canada and Provincial wheelchair sport organizations.

The International Tennis Federation offers a professional circuit of over 160 tournaments worldwide. They range from elite Grand Slam events played in conjunction with the able bodied professionals to Future Series events for lower ranked players.

The BNP Paribas World Team Cup is the wheelchair tennis equivalent of the Davis Cup and Fed Cup. It is held annually with a different nation playing host each year. In 2017 World Team Cup will be held in Sardinia, Italy - with Canada sending both a Quad and Junior Team to compete. The first World Team Cup event was held in California in 1985 involving six men's teams. The women's competition began the following year, with quad and junior events introduced in 1998 and 2000, respectively. The event has experienced continued growth since.

Who Can Play?

To be eligible to compete in wheelchair tennis at ITF sanctioned tournaments and the Paralympic Games an individual must have a medically diagnosed **permanent mobility related physical disability**. In addition to being permanent, the disability must significantly negatively impact function in one or both of the lower extremities.

For more information on player eligibility visit www.itftennis.com/wheelchair/

The Rules

Wheelchair Tennis is Tennis - only played from a seated position. As such, individuals familiar with the game of tennis should be able to very easily adapt to coaching wheelchair tennis.

Wheelchair Tennis follows the **ITF Rules of Tennis** with the following exceptions:

A - The Two Bounce Rule

The wheelchair tennis player is allowed two bounces of the ball. The player must return the ball before it bounces a third time. The second bounce can be either in or out of the court boundaries

B - The Wheelchair

The wheelchair is considered part of the body and all applicable rules, which apply to a player's body, shall apply to the wheelchair.

C - The Service

The service shall be delivered in the following manner:

- Immediately before commencing the serve, the server shall be in a stationary position. The server shall then be allowed one push before striking the ball.
- The server shall throughout the delivery of the service not touch with any wheel, any area other than that behind the baseline within the imaginary extension of the centre mark and sideline.
- If conventional methods for the service are physically impossible for a quadriplegic player, then the player or an individual may drop the ball for such a player. The same method of serving must be used each time.

D - Player Loses Point

A player loses a point if:

- The player fails to return the ball before it has bounced three times; or
- Subject to rule e) below the player uses any part of his/her feet or lower extremities against the ground or against any wheel while delivering service, striking a ball, turning or stopping while the ball is in play; or
- The player fails to keep one buttock in contact with his/her wheelchair seat when contacting the ball.

E - Propelling the Chair with the Foot

- If due to lack of capacity a player is unable to propel the wheelchair via the wheel then he may propel the wheelchair using one foot.
- Even if in accordance with rule e) i. above a player is permitted to propel the chair using one foot, no part of the player's foot may be in contact with the ground:
 - a) during the forward motion of the swing, including when the racket strikes the ball;
 - b) from the initiation of the service motion until the racket strikes the ball.
- A player in breach of this rule shall lose the point.

F - Wheelchair/Able-bodied Tennis

Where a wheelchair tennis player is playing with or against an able-bodied person in singles or doubles, the Rules of Wheelchair Tennis shall apply for the wheelchair player while the Rules of Tennis for able-bodied tennis shall apply for the able-bodied player. In this instance, the wheelchair player is allowed two bounces while the able-bodied player is allowed only one bounce.

**This manual is meant to provide a general overview of the rules of Wheelchair Tennis. For a more detailed explanation please refer to the ITF Wheelchair Tennis Regulations which can be found online at <http://www.itftennis.com/wheelchair/organisation/rules-regulations.aspx>.

Disability and Wheelchair Tennis

In order to be eligible to compete in wheelchair tennis at ITF sanctioned tournaments and the Paralympic Games an individual must have a **medically diagnosed permanent mobility related physical disability**. In addition to being permanent, the disability must significantly negatively impact function in one or both of the lower extremities – which may include the legs, hips and/or gluteal muscles.

Disabilities of this nature may fall into a number of categories – the most common of which will be discussed here.

Spinal Cord Injury

A spinal cord injury interrupts communication between the brain and regions of the body impacted by nerves below the level of injury. Spinal cord injuries may result from a traumatic injury such as a motor vehicle accident or fall; acquired diseases or infections – including multiple sclerosis and polio; or congenital disorders like spina bifida.

The level and “completeness” of an individual’s spinal cord injury (SCI) will determine their function, mobility and strength in affected body parts.

Injury level refers to the region of the back or neck which has sustained damage. Different injury levels will affect different regions of the body – as shown in the diagram. In general, a higher injury level will result in greater impairment than a lower injury level. Paraplegia results from damage to the spinal cord at the thoracic level (T1 – T12) or lower. Injuries of this nature will impact function in the legs and lower trunk. Quadriplegia results from damage to the spinal cord at the cervical level (C3-C6) and will impact the legs, trunk, chest and arms to varying degrees.

A spinal cord injury may also be *complete* or *incomplete*. Incomplete spinal cord injuries may allow for some function below the level of injury.

For more information about spinal cord injuries please visit www.sci-bc.ca/resource-centre/

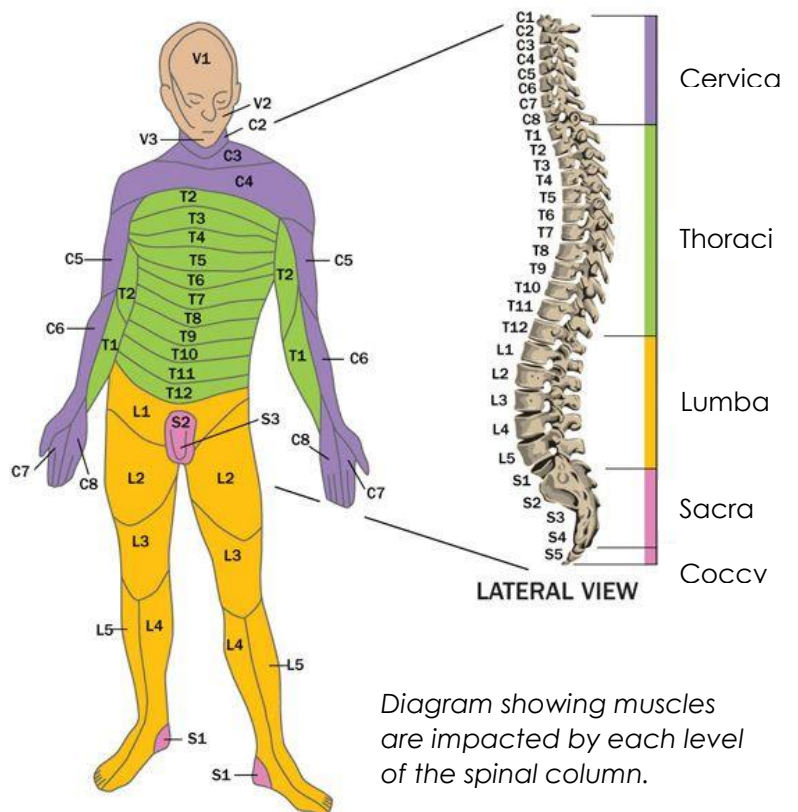


Diagram showing muscles are impacted by each level of the spinal column.

Cerebral Palsy

Damage to the brain during development or up to the first 3 years of life may result in Cerebral Palsy (CP) - a term used to describe a group of disorders affecting body movement and muscle coordination. CP affects the brain's ability to send messages to the body and the body's ability to relay messages back to the brain.

Cerebral palsy affects every individual differently however mobility related manifestations are common. Many individuals living with CP use canes, walkers or wheelchairs on a daily basis to enhance their mobility.

Symptoms of Cerebral Palsy may include:

- Lack of coordination
 - Spasticity
 - Muscle tightness or spasm
 - Involuntary movement
 - Different walking patterns
 - Difficulty with gross & fine motor skills

For more information about cerebral palsy please visit

<http://bccerebralpalsy.com/>



Amputations and other Mobility Related Disabilities

Amputation of any lower extremity joint proximal to the metatarsophalangeal joint (of the entire toe or further up) is an eligible disability for wheelchair tennis. *Ankylosis* – an abnormal stiffening and immobility of a joint due to fusion of the bones – and *Arthrosis* – a degenerative joint disease characterized by the deterioration of cartilage – are also eligible disabilities.

In addition to the three disability types above, an individual may be eligible for wheelchair tennis if they have a functional disability in one, or both, lower extremities which is equivalent to any of the above disabilities.

For more information about wheelchair tennis eligibility please visit:

<http://www.itftennis.com/wheelchair/organisation/rules-regulations.aspx>

Wheelchair Tennis Divisions

There are two playing divisions in wheelchair tennis and players qualify as follows:

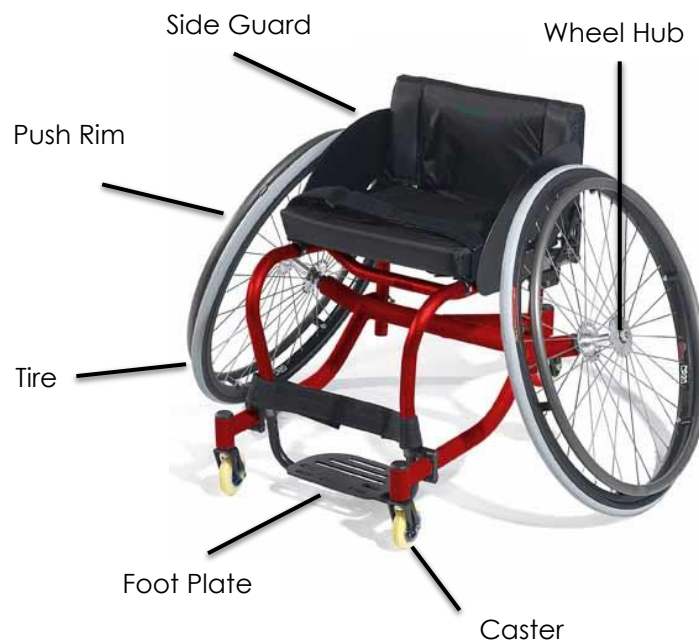
Open: All players with a medically diagnosed permanent mobility related physical disability as defined above are eligible to compete in this division.

Quad: Players must have a disability as defined above as well as a permanent loss of function in one or both upper extremities with a minimum of 3 limbs affected. This division may include power wheelchair users and individuals with triple amputations. Athletes wishing to compete in the Quad division must have extensive medical forms completed by their physician and be classified and deemed eligible for that division.

The Wheelchair Tennis Chair

Wheelchair tennis chairs are specifically designed for tennis and are therefore faster, lighter, and more stable and agile than traditional wheelchairs. While a new player can try wheelchair tennis in any chair, it is recommended that they use a chair designed for sport as soon as possible. This will serve to improve their overall experience and will increase the likelihood that they will continue playing tennis.

There are a number of differences between a sports chair and a daily-use wheelchair. The most apparent difference is that the wheels on a sports chair are cambered (angled) giving the chair more stability as well as maneuverability. Sports chairs also have a single or double caster on the back of the chair meant to keep it from tipping backward should the athlete lean to reach the ball. Finally, sports chairs do not have brakes so new participants should be careful getting in and out of the chair.



These changes, while beneficial for sports, make sports chairs less efficient at maneuvering in a non-sport environment. Casters make moving on uneven surfaces difficult and cambered wheels will not fit through traditional doorways. These factors should be considered when designing sports facilities. See the section on facility accessibility for more information.

Adjusting a Sports Chair

It is important to remember that each wheelchair tennis player is unique and will have different needs relating to their sports wheelchair. Coaches should work with participants to find a chair set-up that works best for them, using trial and error to figure out the ideal configuration. Chair needs will also change over time so adjustments to the chair should be made on a regular basis. The following components of a sports wheelchair are adjustable and will have various effects on the player's performance.

Sports Chair Adjustments

The following was adapted from The Tennis Foundations Tennis Wheelchair Setup and Maintenance Guide for coaches and players. For more information about wheelchair setup and maintenance please visit www.tennisfoundation.org.uk

Equipment	Adjustment	Impact	Suitable For
Seat Angle	The angle of the seat may impact balance and stability . In an inclined position the seat tilts backwards with the front of the seat higher than the back. In a declined position the seat tilts forward with the front of the seat lower than the back.		
	Inclined	Greater Stability	Players with lower core function Newer players wanting support
	Declined	Greater Mobility	Players with greater core function
Seat Height	The height of the seat will influence stability and mobility as well as reach, power and court view . Players should be able to reach the axle of their chair when seated.		
	Higher	Better Reach & Court View Increased Serving Power	Players with lower core function Newer players wanting support
	Lower	Greater Stability & Mobility	Players with greater core function
Backrest Height	Higher	Greater Support & Stability	Players with lower core function Newer players wanting support
	Lower	Greater Mobility Enhanced Shot & Serve Power	Players with greater core function
Backrest Tension	Backrest tension can be tightened or loosened to impact balance and comfort . A tighter backrest can push the player forward in their chair but may be less comfortable. Backrests should be well padded to avoid the occurrence of sores.		
Footplate	Feet in front of body	Greater Stability & Balance	Players who want more stability (including newer players)
	Feet under body	Great Mobility Enhanced Turning Speed	Players with good stability who want greater mobility
Wheel Size	Smaller	Faster Acceleration Greater Turn Efficiency	Personal Preference
	Larger	Higher Speed (once moving) Enhanced Momentum	Personal Preference
Wheel Camber	Greater Camber	Enhanced Balance Easier & Faster Turns	Personal Preference
	Less Camber	Faster (in a straight line)	Personal Preference

Additional Equipment

Straps

Wheelchair tennis athletes often use additional straps to enhance their stability and strength in key areas. Using straps may improve participants' stability and balance and help them to feel more secure when trying wheelchair tennis for the first time.

Chest & Waist Straps – mimic core and hip muscles. May help to improve the athlete's confidence or allow them to lean or reach further than they would otherwise be able to without falling over.

Leg & Foot Straps – mimic leg and ankle muscles. May help to keep the athlete's legs or feet securely on the chair or foot plate to will increase balance and stability.

Tape

Athletes with reduced grip strength may have difficulty gripping their racket or holding on to it as they swing. In such cases taping the racket to the hand with athletic tape may be an option. Be careful to ensure the tape is not so tight that it could cut off circulation to the hand. Adjust as needed.

Different athletes will have different needs in relation to racket taping. For many participants this will be a new experience which will require trial and error before determining the best taping method. Over time an athlete should be able to tape their racket their own or communicate to others how to best assist them in the taping process. It is important that an athlete be able to complete this task independent of their instructor if they are going to pursue wheelchair tennis on their own.



This athlete uses both a waist belt and knee strap as well as taping the racket to his hand.

For more detailed information on racket taping see the Tennis Canada Wheelchair Tennis Instructors' Manual or refer to the accompanying video.

Wheelchair Loans

Access to appropriate sports wheelchairs and equipment is a major barrier for people with disabilities looking to get involved in wheelchair sports. A basic sports wheelchair costs over \$3000 and specialized wheelchairs can cost even more. For this reason, BC Wheelchair Sports Association offers a comprehensive wheelchair loan program that allows athletes to access proper sports wheelchairs and equipment. Wheelchairs can be rented for a very low yearly rate.

For more information about the wheelchair loan program at BCWSA please visit:

<http://www.bcwheelchairsports.com/get-involved/wheelchair-loan-program>

Not in BC? Check with you Provincial Wheelchair Sport Organization or Tennis Canada about similar programs in your area.

Wheelchair Tennis for Beginners

To conduct an introductory wheelchair tennis session you need all the same equipment you would need for a beginner tennis lesson – balls, rackets, nets (or mini-nets) – as well as access to sports wheelchairs. Introductory sessions can be conducted on actual tennis courts but are equally as effective in gyms or alternative recreation spaces.

Introductory wheelchair tennis sessions typically run 30-60 minutes. In this time span it is possible to get brand new participants holding racquets, bouncing balls, and finally, getting close to playing an actual match. Depending on a player's skill level, some of the following drills can be skipped or fast tracked. It can be really helpful to have additional support for people with higher levels of disability or less coordination, as they may need extra attention for some drills. It may be beneficial to begin with foam balls or – for participants having more difficulty - balloons, as players get used to maneuvering the sports chair and holding a racquet.

Where possible it is recommended that able bodied participants including family members and friends are encouraged to participate in the session as this fosters the notion of inclusivity in the sport.

Introductory Warm-Ups, Drills, and Games

The following was adapted from the Tennis Canada Wheelchair Tennis Warm Up Games and Drills Resource which can be found at www.tenniscanada.com/competitive/wheelchair/

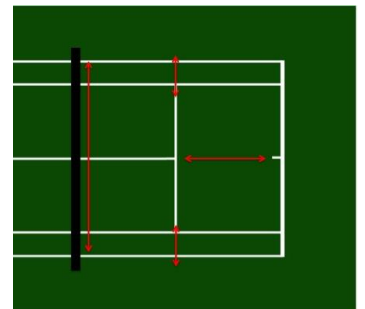
For more information about leading an introductory wheelchair tennis session please contact BC Wheelchair Sports Association or Tennis Canada or refer to the accompanying video.

Warm-Ups

“Pac-Man”

Objective: “Ghosts” try to tag all “pac-men”. Once a pac-man is tagged he leaves the game. The game is over once all pac-men have been tagged.

- Participants are only allowed to move along lines on the court/gym floor. The net is considered a line as well as the service line through the doubles alley and middle line as shown in the diagram.
- This game focuses on speed and turns and aims to increase mobility.



“Know Your Lines”

Objective: Coach calls out lines and participants must sprint to the called line. ie. “doubles side line” or “baseline”

- Last player to reach the line is eliminated until only one player remains.
- This game teaches court lines as well as focusing on speed and turns.

Self- Rallies

For the following drills the athlete should hold the racket with a continental (hammer) grip. Exercises should be performed first with the palm up and then palm down

Balancing ball on racquet face

Player balances the ball on strings trying not to let it drop on the ground

- Progression 1: Player balances the ball and moves it clockwise and then counter-clockwise around the racket face
- Progression 2: Include a "pit stop": players try to get the ball to land in the 'open throat' below the racket head before bringing it back onto the strings

Self-Rallies without floor bounce

Player bounces the ball off the middle of the racket face

- Progression 1: continuous bounce (no catching)
- Progression 2: alternate between palm up and palm down with each bounce

Self-Rallies with floor bounce

Player bounces the ball off the middle of the racket face and lets it bounce off the ground before bouncing it off the racket face again. Progression 1 & 2 as above.

- Progression 3: place a marker on the ground – ball must bounce off the marker (*opportunity for competition – first player to bounce off marker 3 times wins*)

Cooperative Rallies

Players complete the above drills (self-rallies) in teams of two. Teams may compete against each to see who can complete the most rallies in a row.

Feeding Rallies

Coach drop feeds balls to forehand. Player hits the ball cross court over the net towards a target on the opposite side (wheelchair, chair, box, etc.).

- Progression 1: same drill on backhand
- Progression 2: include movement (player has to push towards the spot where the ball has dropped and recover back to hub/start after shot)
- Progression 3: alternate between forehands and backhands
- Progression 4: opportunity for competition – first player to 3 successful target hits wins
- Progression 5: same drill with volleys (no bounce – close to net)
- Progression 6: same drills with coach feeding across the net

Note: targets are a great way to keep drills fun while working on technical fundamentals

“Maniac Tennis” (to finish a session)

Begin with one team on each side of the net made up of as many players as available. The aim of the game is to get the ball across the net by any means possible (over the net, past the net, under the net, rebounding off a wall, passing the ball to a teammate before hitting it over). A team scores a point if the ball comes to a dead stop on the other side of the net.

Club Integration: Promoting Wheelchair Tennis

Wheelchair Tennis is an excellent sport for integration given that it uses the same courts, rackets, and balls and has a very small number of rule differences. Wheelchair tennis players and able-bodied players can easily play against each other by observing the two-bounce rule for wheelchair tennis athletes only.

Integration is very important to the development of wheelchair tennis athletes – especially in regions or clubs where there are fewer wheelchair tennis players. Initially, it may be beneficial to provide wheelchair tennis-specific lessons for new players as they develop their skills and confidence. The end goal, however, should be to include wheelchair tennis players in regular programs and lessons. This will greatly increase the number of local training opportunities for wheelchair tennis players while also enhancing other players' knowledge of and exposure to wheelchair tennis.

An integration philosophy will benefit the host club or organization as well. Involvement in wheelchair tennis may lead to further hosting opportunities and increased participation in existing programming as well as increased partnership opportunities with local organizations and government. Other benefits may include enhancing the knowledge and awareness of participants about wheelchair tennis and the development of an inclusive environment where everyone is welcome.

Wheelchair Tennis Exhibitions

Offering wheelchair tennis demonstrations or exhibitions is a great way to educate the local tennis community about wheelchair tennis and is a great opportunity to recruit new wheelchair tennis players, coaches, and supporters. Exhibitions can be held in conjunction with a pre-arranged tournament, a media event, a publicized announcement or any other special event which includes learning or spectating opportunities.

Up & Down Play Opportunities

Up and down play opportunities can be included in wheelchair tennis exhibitions and are a great way to promote integration. In Up & Down Doubles, wheelchair tennis players are paired with able-bodied players against a team of the same. All players follow the same rules with the sole exception that wheelchair tennis players are allowed two bounces.

“Up & Down” tournaments are a fun way to demonstrate the similarities between wheelchair tennis and stand up tennis while also giving wheelchair tennis players the opportunity to showcase their skills.



Accessibility

When working with athletes with a disability it is important to consider the accessibility of the tennis facility. Accessibility refers to the degree to which a person can access or gain entry to a facility with ease. When thinking about accessibility in tennis centres there are a few key areas to consider:

The Courts

All players must be able to get on and off the courts unassisted. There should not be any steps, steep inclines, or unpaved ground hindering the entrance. Doorways and gates must be wide enough to accommodate a wheelchair. Because of the camber on a wheelchair tennis chair the minimum requirement of 34" – which will accommodate a typical wheelchair – is not wide enough to accommodate a sports chair. A door width of 47" is preferable.

Due to the use of the second bounce wheelchair tennis is often played beyond typical court boundaries. Tennis courts should have ample back and side court spacing available for players to maneuver.

Court Surfaces

Wheelchair tennis is played on all court surfaces although some are preferred over others. "Hard" surfaces such as plexipave require less effort to maneuver on than "softer" surfaces such as clay or grass.

Gates

Where possible there should be direct gate access to individual courts to allow athletes to move directly onto their court without crossing the other courts. This will help to reduce disruption to other players while also reducing the distance athletes have to travel with all of their equipment.

Washrooms

Washrooms should also be accessible and located within an accessible area of the tennis facility. Washroom accessibility includes the entry door as well as the size of the bathroom stalls. Support bars should be installed in all accessible stalls.

Showers, where available, should have a seat inside and be large enough to maneuver a wheelchair within. Faucets should be low enough to reach from a seated position.



Valuable Contacts

BC Wheelchair Sports Association

BCWSA is the provincial sports organization which oversees wheelchair tennis, wheelchair rugby and wheelchair athletics. They provide programs for athletes from the grassroots to the Paralympic level, and develop world-class coaches, officials, classifiers and other sport professionals. BC Wheelchair Sports Association is committed to access to sport for all and provides a wheelchair loan program and grant opportunities to support this goal.

BC Wheelchair Sports Association

Program Coordinator, Michelle McDonell

Phone: 604-333-3520 x208

Email: michelle@bcwheelchairsports.com

Provincial Coach, Steve Manley

Email: steve@bcwheelchairsports.com

Website: www.bcwheelchairsports.com

Bridging the Gap

Bridging the Gap: Getting Physically Active (BTG) is a non-profit organization, with a mission to help Canadians with a disability get physically active. They are made up of Program Coordinators throughout Canada, who administer first-involvement wheelchair sports events. (In BC, BC Wheelchair Sports Association Program Coordinators are also employed by Bridging the Gap). BTG offers Have a Go days for individuals to try various wheelchair sports as well as referrals, wheelchair loans, wheelchair sport development programs and clinics, and mentorship and other support.

Bridging the Gap

National Coordinator, Duncan Campbell

Phone: 604-333-3539

Email: duncancampbell@cwsa.ca

Website: www.btgcanada.ca

Tennis Canada

Tennis Canada and the International Tennis Federation produce a lot of material to support coaches working in wheelchair tennis. In addition Tennis Canada provides extensive support to Paralympic or National Stream athletes in the form of financial assistance for travel or training, coaching on the road, training camps, court privileges at national training centers, and access to sport specialists and the Sport Canada Athlete Assistance Program.

Wheelchair Tennis at Tennis Canada

National Coach, Kai Schrameyer

Phone: 778-995-4613

Email: kschrameyer@tenniscanada.com

Website: <http://www.tenniscanada.com/competitive/wheelchair/>