



THE WHEELCHAIR TENNIS WHOLE PLAYER DEVELOPMENT PATHWAY



Acknowledgements	03
Introduction	05
Wheelchair Tennis WPDP	06
The 5 Cs	08
The Five Entry Points	10
Stage 1	17
Discovery	
Stage 2	19
Active Start	
Stage 3	21
Fundamentals	
Stage 4	26
Development	
Stage 5	31
Consolidation	
Stage 6	38
Performance	
Stage 7	47
Life as a Pro	
Glossary	55
Appendices	56
Appendix A	57
Mental Health & Wellness	
Appendix B	60
Mobility In Wheelchair Tennis	
Appendix C	67
Wheelchair Tennis Beginner Drills	
Appendix D	69
Wheelchair Tennis Hand-Eye Coordination Drills	
Appendix E	71
Wheelchair Tennis Warm-up Drills and Games	
Appendix F	73
The Pronated or Inverted Backhand	

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WELCOME

We are grateful to all clubs, coaches, Provincial and Territorial Tennis and Wheelchair Sport Associations, volunteers, parents, players, families, staff, and board members who have provided inspirational leadership and contributed to the success of Canadian wheelchair tennis.

Canadian wheelchair tennis has come a long way over the past 30 years. It takes a village to raise a child, and, in this case, it takes a village to grow, develop, and promote our great sport and strive to make Canada a leading wheelchair tennis nation. Tennis Canada would like to thank everyone who has contributed to our sport in Canada and show special appreciation to those who helped create the Wheelchair Tennis Whole Player Development Pathway (WTWPDP).

Our success is a collective effort. The commitment and sacrifices made by athletes, families, and coaches across our entire system are admirable. The energy and resources required to achieve a player's potential are real, and the rewards are well worth it. The process isn't easy, but the returns go beyond winning as the character and life skills gained by everyone who embarks on this journey are the keys to developing better people. Many of the world's top wheelchair tennis players are exceptional athletes and role models for Canadians.

Our sport celebrates equity, diversity, inclusivity, and accessibility and has awakened national pride and inspiration in the many people who play and follow wheelchair tennis. We will continue to work in these areas, and we recognize that more barriers must still be lifted to make our sport equitable, diverse, inclusive, accessible and safe for people with disabilities, women and girls, Indigenous people, newcomers to Canada, members the 2SLGBTQIA+ communities, seniors, and those living in poverty and isolated communities.

The years of hard work invested by many have led to historic success and helped realize our not-for-profit mission and purpose to grow, develop, promote, and improve the health and well-being of Canadians through positive tennis experiences. Canada's Grand Slam singles, doubles, and mixed doubles champions, Top 10 and world-class players, Parapan Am gold medalist, and Paralympic, Olympic, Davis Cup and Billie Jean King Cup team members have inspired many Canadians to follow and play tennis, as we strive to be a leading tennis nation.



Guillaume Marx,
Vice President High-Performance

INTRODUCTION

We believe all Canadians should have the opportunity to play and enjoy the sport of wheelchair tennis in an environment that allows them to reach their full potential on and off the court. The Wheelchair Tennis Whole Player Development Pathway (WTWPDP) has been developed as a blueprint to help illustrate the various stages of development available to facilitate the enjoyment of wheelchair tennis for life.

Tennis Canada aspires to be among the world's leading wheelchair tennis nations by championing positive tennis experiences for everyone in safe, welcoming, and inclusive environments.

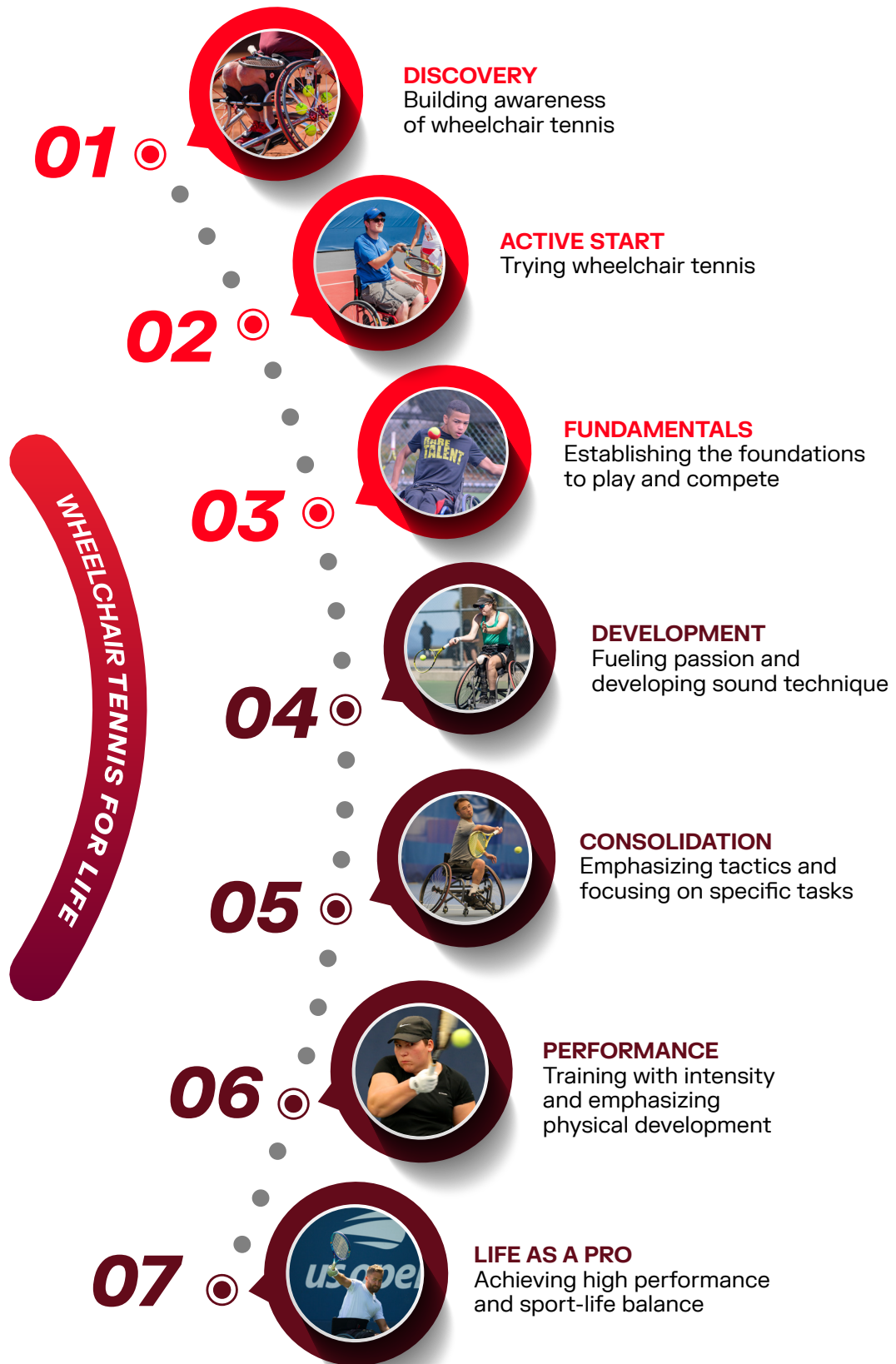
Developing Great People and Players

From discovery to the highest levels, the WTWPDP was developed based on best practices and research to help each player understand their own journey to reaching their potential. Wheelchair tennis provides a myriad of benefits including better physical and mental health, strong social bonding, and the opportunity to develop life skills.

This holistic approach aims to develop great wheelchair tennis players — and great people - who can be role models and inspire future generations.

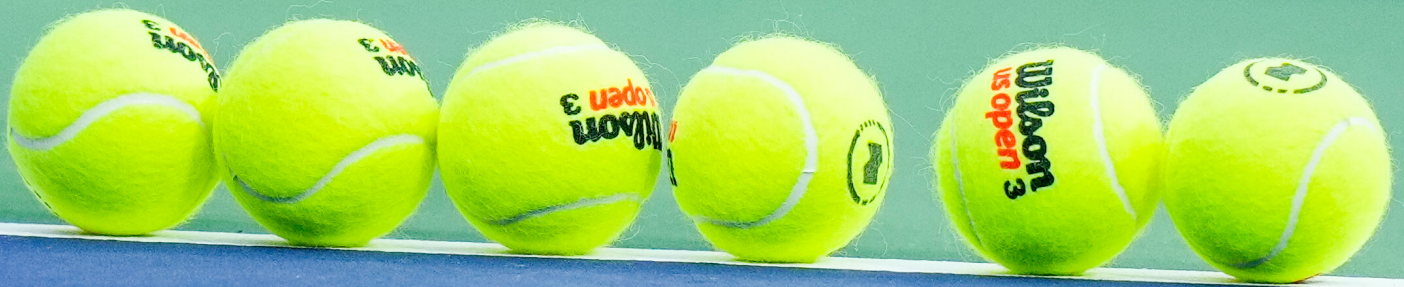


The Wheelchair Tennis Whole Player Development Pathway



The seven stages to develop wheelchair tennis players, achieve excellence, and help them embrace a lifelong tennis journey.





WTWPDP: It's about the journey

The WTWPDP reinforces the idea that long-term development is important to sport performance and to a life-long commitment to physical activity for good health and wellness. This pathway requires alignment from community to high-performance programming involving clubs, coaches, families, community organizations, and Provincial and Territorial partners.

5Cs of coaching

The WTWPDP framework is designed around the 5Cs of skill coaching that help develop a well-balanced player and individual with the following key components:



THE 5Cs

1

Culture

The sum total of all of our behaviours and actions, verbal and nonverbal, on and off the court: A way of doing the right things.

2

Character

Leadership skills at each age and stage of development.

3

Confidence

Psychological development that supports self-confidence: The process on the path to developing resilience.

4

Connection

Social and emotional development focused on relationships and connectivity in an increasingly disconnected world.

5

Competence

Tactical, technical, physical, and mobility development recommendations, from fundamental movement skills through sport-specific wheelchair tennis training based on level.



INFLUENTIAL FACTORS FOR DEVELOPMENT

A player's journey through each stage of development is influenced by many factors including:

- **Starting age:** starting at a younger age may make it easier to adapt and learn wheelchair tennis skills.
- **Physical impairment:** the level of physical impairment may influence the pace of development.
- **Physical literacy:** being physically active and developing sound physical literacy skills prior to playing wheelchair tennis may help with the learning of fundamental skills.
- **Previous tennis experience:** Playing tennis prior to acquiring a physical impairment may make grasping tactical and technical skills easier.
- **Previous wheelchair sport experience:** playing other wheelchair sports prior to wheelchair tennis may accelerate learning mobility skills.

Other vital factors that can influence long-term development are intrinsic motivation, work ethic, goal setting, health, lifestyle, and a support system.



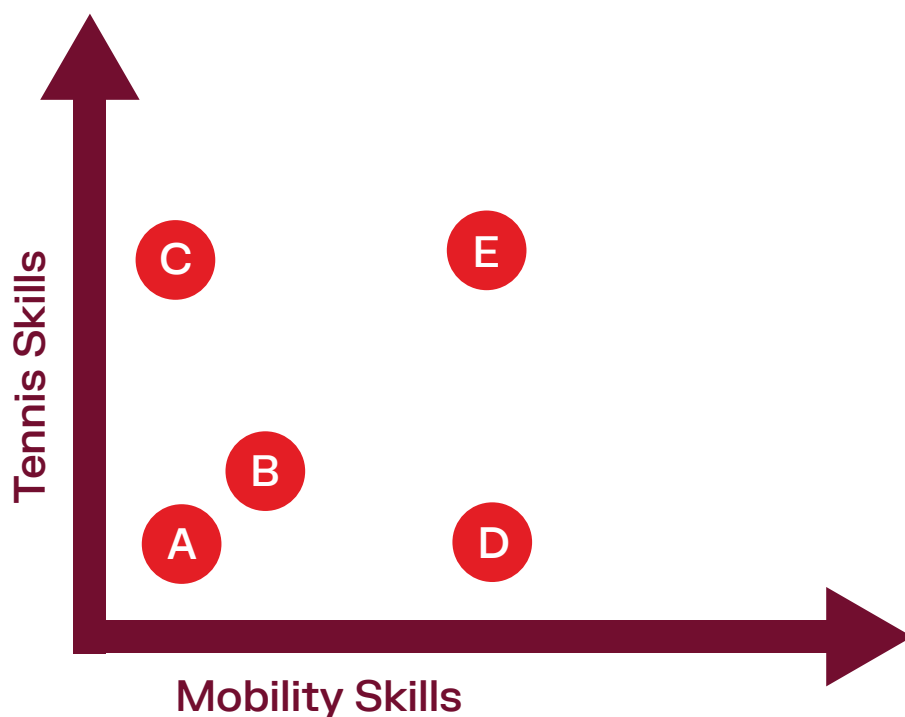
FIVE ENTRY POINTS

A player may enter the WTWPD through one of the entry points below:

Entry Point A	The player has a physical disability and has not been exposed to any sports in their lives. This player will have to learn basic physical literacy, wheelchair tennis specific mobility, tactics and technical skills.
Entry Point B	The player has engaged in other sports and has acquired a physical disability. They will have to learn wheelchair tennis-specific mobility, tactical, and technique skills. This player may have well-developed physical literacy skills which will be conducive to learning wheelchair tennis.
Entry Point C	The player has previous tennis experience prior to acquiring a physical disability. They have the advantage of understanding many aspects of tennis tactics and technique. Wheelchair tennis mobility may be the most challenging aspect of the learning process as well as the adjustment to wheelchair specific techniques.
Entry Point D	The player participated in other wheelchair sports prior to engaging in wheelchair tennis. They have the advantage of having already developed mobility skills that may be transferred to wheelchair tennis. The wheelchair tennis tactics and techniques may be the most challenging aspect of the learning process.
Entry Point E	The player has previous tennis experience prior to acquiring a physical disability. They also have previous wheelchair sports exposure before they start playing wheelchair tennis. This player has the advantage of understanding many aspects of tennis tactics and technique as well as a knowledge of wheelchair mobility, albeit not specific to wheelchair tennis.

PLAYER ENTRY POINTS

(BASED ON THEIR SKILLS AT THE START OF THEIR WHEELCHAIR TENNIS DEVELOPMENT)



The chart depicts the five entry points as they relate to tennis and mobility skills

Coaches need to be flexible and ready to introduce concepts from advanced stages earlier in the process if suitable for the player. They may have to spend more time on a certain progression if the player requires longer to master that skill.



Wheelchair Tennis for Life

The WTWPDP provides the blueprint for participants to play wheelchair tennis for life.

The earlier stages focus on building a solid foundation to play and enjoy the sport, connect with the community, and provide the opportunity to start competing. The latter stages of the pathway focus on higher training and competition volume for those who want to pursue the competitive stream. All participants can move through the pathway as they desire and enjoy wheelchair tennis for life.

Leadership opportunities within the wheelchair tennis community are available and encouraged. There are individuals part of Wheelchair Tennis for Life who contribute in ways other than being a player, such as coaches and instructors, officials, administrators, volunteers, and those involved in sport science and medicine.



Sport Safety

Tennis Canada is committed to protecting the security, safety, and health of everyone in our sport. A safe sport environment is one that does not jeopardize a player's mental, physical, emotional, sexual health or well-being but instead promotes strength, resilience and self-confidence. Please visit the Tennis Canada [Sport Safety webpage](#) to learn more about our commitment to positive tennis experiences.

As with any player, coaches need to understand the unique needs of the person they are working with. This is especially important when working with wheelchair tennis players regardless of which stage of the WTWPDP they are in. In the appendix, we provide links to important training and resources for individuals working with players with a disability. Taking a player-centered approach by regularly engaging in open conversation will help ensure a safe and welcoming environment. A few key considerations include:

- Respect the person
- Understand the unique needs of the player, their abilities, self-advocacy, and comfort level
- Create an environment where players (regardless of age, skill, ability) feel comfortable speaking up and engaging in conversation.
- Understand the [Rule of Two](#) and how to support your player in a way that makes you both feel comfortable.

Ultimately it is about communication – understand each player, what they need, and how you can provide support. Be sure to ask, clarify, engage and listen. Lastly, recognize that their feelings, situation and outlook might change so keep the lines of communication open. A coach needs to get to know the person first before learning how to best coach their wheelchair tennis journey. When a situation occurs, know you are supported through our Sport Safety department.

Women & Girls

Tennis Canada is committed to advancing equity for women and girls in our sport, recognizing the history of underrepresentation at all levels of the tennis system. To learn more about our Game. Set. Equity. commitment in partnership with National Bank, an ambitious and holistic strategy which details how Tennis Canada will advance equity for women and girls at all levels of the tennis ecosystem in Canada, from playground to the pro tours, visit our [webpage](#).

Mental Health & Wellness

As players increasingly share their struggles with mental health, Tennis Canada is committed to providing resources and support and taking action. Partnering with the University of Ottawa, Own the Podium, the Canadian Centre for Mental Health and Sport (CCMHS), and Game Plan, Tennis Canada has designed, implemented and evaluated a comprehensive long-term [strategy](#) to improve the mental health and wellness of Tennis Canada athletes, coaches, parents, and staff.





Wheelchair Tennis Specific Elements

The WTWPDP largely follows [the Whole Player Development Pathway](#). The game is played on the same size tennis courts and by almost identical rules. Players use the same grips, hit the same strokes, and apply similar tactics and corrective techniques. Coaches can apply the same teaching methodology and progressions.

There are a few aspects that are unique to wheelchair tennis including:

1. Two Bounce Rule

The ball is allowed to bounce twice. The first bounce has to be inside the court and the second bounce can either be inside or outside the court.

2. Mobility

Getting from A to B on the tennis court requires moving the tennis wheelchair versus running or using side or shuffle steps. The WTWPDP will address the subject of wheelchair mobility in detail.

3. Tennis Wheelchairs

Sport wheelchairs are specially designed for athletes who participate in wheelchair sports, such as tennis, rugby, basketball, and racing. These sport wheelchairs enhance mobility, speed, agility, and performance, and meet the unique needs of each sport.





Some features of sport wheelchairs include:

- **Lightweight construction:** typically made from lightweight materials such as aluminum or titanium, which make them easy to maneuver and more responsive.
- **Ergonomic design:** designed to fit the user's body and provide maximum support, comfort, and stability. They may have adjustable seat heights and angles, footrests, and backrests, as well as customizable cushioning.
- **Seating:** wedged seats (to allow for hips to rotate into shots) and angled (cambered) wheels to help with quick stops and turns.
- **Wheel configuration:** may have different wheel configurations, depending on the sport. For example, racing wheelchairs have large rear wheels and small front wheels, while tennis wheelchairs have two wheels and 3-4 casters that allow for quick turning and maneuverability.
- **Straps and supports:** to keep the user secure during fast and aggressive movements or to provide support (in the case of limited core function). These may include lap belts, chest straps, and leg straps.

As players move through the WTWPDP, their sport wheelchair needs will change. In the first three stages, it is sufficient for players to use a general sport wheelchair (i.e. basketball). From the Development stage onwards, players should be seated in specific tennis wheelchairs to enhance their enjoyment, mobility, and development.

Coaches and support staff should be aware of these changes and prepare athletes for the investment and adjustments that will be made as they progress through their wheelchair tennis journey. There are wheelchair loan programs available in many provinces to help alleviate the cost.

4. Facility Accessibility

The accessibility of facilities and amenities, including washrooms and showers, must be addressed when selecting a venue for training or competition. Most tennis wheelchairs are wider than a standard door and would benefit from wider access to and from the gym. Players must be able to enter the building in which the court is located, and an appropriate space is required around each court to provide players with a safe distance in the out-of-bound area. Players also need adequate space to change ends of the court, therefore benches should not be permanent to accommodate flexibility of the space.

Consideration should be given to on-site storage of wheelchairs. Should on-site storage not be available, it is important to note that the wheels of tennis wheelchairs can easily be removed, which makes transport in a vehicle straightforward.





5. Player Classification

Wheelchair tennis is a sport played by people with varying degrees of physical abilities. The classification system is designed to ensure that players of similar functional ability compete against each other. To be eligible to compete in international tournaments governed by the [International Tennis Federation](#) (ITF) a player must participate in the classification process.

The ITF operates two Sport Classes: the Open Division and the Quad Division. In the Open Division, women and men compete in separate draws, whereas in the Quad Division, they compete together in one draw.

Players may be eligible to compete in the Open Division if they have a permanent physical disability that results in substantial loss of function in one or both lower extremities (limbs) and that meets or exceeds the sport's eligibility criteria. Players who also have a permanent physical disability that results in substantial loss of function in one or both upper extremities, and where at least three extremities are affected, may be eligible to compete in the Quad Division.

Read more about these [classifications](#).

Players under the age of 18 may compete in the Junior Division.

6. Coaching Considerations

Quality coaching is critical to the successful delivery of the WTWPDP. There are four key considerations for coaches:

1. Coaches need to understand the nature and capabilities of each player and how it impacts their ability to execute various skills.
To learn more about adapting to the needs of a player, [click here](#).
2. Coaches are encouraged to learn and use inclusive language to help create a positive and welcoming environment:
 - a. For further information on inclusive language, [click here](#).
3. In wheelchair tennis, groups may often be small with players of varying abilities. Coaches are encouraged to be creative in designing practices that address a group of players in different stages of development.
4. Heat Management: certain levels of impairment impact the athlete's ability to regulate their body temperature. Coaches need to be aware that Quad Division players may have internal temperature regulation difficulties and require equipment to help handle hot weather conditions such as:
 - a. Spray bottles
 - b. Hats
 - c. Lightweight and light-coloured clothing
 - d. Ice towels for the neck

Also be mindful of when the training is scheduled to avoid the hottest time of day.



THE WHEELCHAIR TENNIS WHOLE PLAYER DEVELOPMENT PATHWAY STAGES

STAGE 1

DISCOVERY

Focus: Building awareness of wheelchair tennis

Stage Overview

The purpose of the Discovery stage is to inform the general public and prospective participants of the wheelchair tennis opportunities available.

In the case of individuals who acquire a disability, the period following its acquisition is generally one of great change and transition. Some of their previous physical activities may no longer be open to them in the same form and they may not be aware of the many adapted sport and physical activities available. Sharing the opportunity to participate in wheelchair tennis can help ease this transition.

Ways to help raise awareness of wheelchair tennis and find new participants may include:

Rehabilitation Centres

Collaborating with rehabilitation centres to educate patients and families on available sports and try-it opportunities. Given that rehabilitation centres are the primary first point of contact with potential new participants post-injury, this is a highly suitable opportunity to introduce information about wheelchair tennis.

Schools

Partnering with schools to introduce wheelchair tennis to a wider audience. This can include organizing demonstrations or training sessions for students or working with schools to establish a wheelchair tennis program.



High Profile Tennis Events

Delivering wheelchair tennis demos at ATP, WTA, Tennis Canada Challenger events, tennis clubs, Billie Jean King Cup and Davis Cup ties to leverage exposure to a wider audience. These events attract an audience with a high interest in tennis and serve as an opportunity to present wheelchair tennis by showcasing high-performance players as well as inviting spectators to try the sport. This is a great opportunity to educate a wider audience and raise awareness.

Partnerships

Building partnerships with organizations that support people with physical disabilities can be a valuable way to raise awareness of wheelchair tennis. This could include working with organizations that focus on accessibility (Provincial Wheelchair Sports Associations, Canadian Paralympic Committee, tennis clubs, amputee stakeholders, doctors and physical therapists, organizations that support disability rights) and community organizations (municipalities, parks and recreation).

Tennis Clubs & Community Champion

Supporting a certified tennis coach and/or community champion to start a wheelchair tennis program at a club or on a public court.

Communication channels that can be leveraged to raise awareness may include:

Social Media

Social media can be a powerful tool for raising awareness of wheelchair tennis. Posts can include photos, videos, testimonials, and updates on tournaments, players, and training sessions. Various social media channels are a great tool to share success stories and inspire others to participate in the sport.

TV & Media

Engage with national/local media (TV, radio, print) to help promote and cover local/national events, highlight profiles of top Canadian players, and raise awareness of wheelchair tennis activities. New players often discover their interest in wheelchair tennis after having watched top players on TV or online.

Coaches & Players as Role Models

Leverage existing or former high-profile players and coaches to share their stories to inspire others to see the pathway and opportunities available to them in wheelchair tennis.

The goal of this stage is to increase awareness of the sport and the opportunities to try it. The next stage will provide details on how to deliver a successful introduction to wheelchair tennis.



STAGE 2

ACTIVE START

Focus: Trying wheelchair tennis



Stage Overview

The Active Start stage is focused on ensuring participants have a positive first experience and remain engaged in the sport. Given you may only have ONE chance at a first impression, it is important to create an environment that is encouraging, inclusive, and fun!

Following that first experience, it is critical that organizations have a follow-up program in place to encourage ongoing participation. For additional information, refer to the following appendices.

- [How to Run a Beginner session](#)
- [The 3 warm-up drill documents](#)
- [Wheelchair Tennis Warm-Up Games](#)
- [She Belongs PDF](#)

Culture

We want to create a culture that emphasizes:

- Recognizing that players should have a fun and positive first experience;
- Encouraging players to participate as much as they feel comfortable and letting them know that just observing is okay; and
- Reinforcing curiosity when players try new things (e.g., “That’s a great question!” or “Way to go!”).

Character

We want to seek players’ positive behaviours by:

- Having a positive attitude and outlook;
- Giving their best effort every time; and
- Showing up and being ready to participate.

Confidence

We want to reinforce players’ motivation through:

- Encouraging ongoing positive self-talk;
- Following simple and clear instructions; and
- Being attentive to the task.

Connection

We want to help players learn how to connect with each other, the instructors, and the club by focusing on:

- Being upbeat and enthusiastic with body language and communication;
- Acknowledging when players do the right things; and
- Respecting others and the rules in a welcoming environment.

Competence

Tactical

Early success is key to maximizing new participants' engagement and enjoyment.

- Try to keep the instructions simple (e.g. "Get the ball over the net and into play!")

Some examples include:

- Play mini tennis with balloons/foam/red/orange balls. Only in exceptional circumstances (e.g. adult players with previous sports/tennis exposure) should green or yellow balls and bigger court sizes be part of the activity.
- Each participant should use a racquet of appropriate length, weight, and grip size.
- Play floor tennis/throw tennis activities as early progressions.
- Finish every session with 'game play' or adapted variations that are fun and ensure the session ends on a high note.

Technical

This stage includes a basic introduction to ground strokes, including the following elements:

- Continental grip on forehands and backhands, unless the player has a tennis background and has already developed more advanced grips
- Impact point in front of body
- Low to high racquet path in order for the ball to clear the net

Volleys and serves may be introduced depending on the skill level of the participants:

- **Volleys:**
 - Racquet head above wrist
 - Short backswing
 - Block feel
- **Serve:**
 - Continental grip
 - Toss at "1 o'clock"
 - Racquet in throwing position

Mobility

Provide basic introduction to wheelchair mobility:

- Learn the basic movements of pushing a wheelchair with the racquet in-hand
- Learn to keep the racquet in the hand and not on the lap
- Hold the racquet with a continental grip with four fingers, and place the thumb on the push rim to lock the grip
- Push on the wheel from "12 o'clock to 3 o'clock"

Additional Considerations

In addition to the 5C's, important considerations include:

Equipment

Wheelchairs:

If they are aware of the equipment requirements and what to expect when they attend their first session, the players are more likely to have a positive introduction to wheelchair tennis.

- Participants can use tennis or basketball wheelchairs which may be provided by a Provincial Wheelchair Sports Association or club hosting an Active Start session. A good-fitting wheelchair will make the experience more enjoyable and successful. For those with spinal cord injury (SCI), their hip width, leg length (upper and lower), backrest height, and dump (seat angle) should be considered when providing a sport wheelchair.
- Participants can use their everyday wheelchair, if necessary, but safety should be monitored to ensure they are aware of tipping while playing
- Straps will ensure players are supported and stable sitting in the wheelchair. Straps come in different forms (e.g. ratchet or velcro) and for different areas of the wheelchair and body:
 - Chest
 - Waist
 - Legs
 - Thighs
 - Knees
 - Feet

STAGE 3

FUNDAMENTALS

Focus: Establishing the foundations to play and compete



Stage Overview

The focus of the Fundamentals stage is to build a foundation of basic tactical, technical, physical, mobility, and psychological skills. Players are introduced to the rules of the game and tennis etiquette.

Use the progressive tennis approach (**red**, **orange**, and **green**) to play, develop, and compete with the appropriate racquet and balls on the right-size court.

It's important to create a safe, inclusive, positive environment to promote life-long participation. At this stage, participants may engage in other sports and are not solely focused on just wheelchair tennis. When working with junior players (under 18 years old), coaches should follow the [Quality Standards for Kids' Tennis](#).

Culture

We want to create a culture that emphasizes:

- Using appropriate language and inclusive actions with and towards others;
- Respecting others and the rules. This includes an understanding that everybody progresses at their own pace; and
- Learning how to address and voice concerns.

Character

We want to seek players' positive behaviours by:

- Being honest with oneself and others;
- Demonstrating care and respect for the club, coach, parents, officials, teammates, opponents, and administrators; and
- Showing integrity by doing the right thing.

Confidence

We want to reinforce players' motivation through:

- Encouraging ongoing positive self-talk;
- Developing a love of playing; and
- Dealing with early disappointments, especially in the area of wheelchair mobility.

Connection

We want to help players learn how to connect with each other, the instructors, and the club by focusing on:

- Doing what is right, even if it is challenging;
- Linking actions and consequences; and
- Understanding the rules of the game and the concept of fair play.

Competence

The player is introduced to the basic concept of consistency. Keeping the ball in the court is the primary goal. Players will learn to serve, rally, and keep score.

Tactical

- To develop the mentality of putting one more ball in the court than the opponent
- To learn to hit cooperative rallies with their partner

Technical

Groundstrokes and Service Returns:

- For forehand, use the Continental or Eastern grip and for the backhand grip use the Continental grip unless the player has already developed advanced grips
- Ready position when the opponent hits the ball includes hands on wheels with racquet above the wrist
- Early preparation before the ball crosses the net; the player starts to make decisions whether to impact the ball after the first or second bounce
- Build a consistent point of contact between the waist and the shoulders for improved shot timing
- Balanced hitting keeping the non-dominant hand on push rim/wheel for stability
- Low to high racquet path
- Players are focused on the control of the ball (feel of the ball/soft hand)

Volleys:

- Racquet at eye level in front of the body with elbows in front
- Contact the ball in front with a short back swing and firm wrist

Overhead:

- Sideways position to the net
- Racquet in proper throwing position

Serve:

- Establish a balanced starting position at the baseline facing the net post
- Practice a consistent toss
- Racquet in throwing position
- Follow through on the opposite side of the body

Physical

Developing and acquiring fundamental movement skills in the wheelchair is important. For players that do not have any previous wheelchair pushing experience, it starts with teaching the basic mobility movements and fundamentals of pushing, throwing, catching, and leaning to pick up a ball in a wheelchair.

Physical development should also include:

- Learning the concepts of warm-up and cool down
- Integrating basic upper body strength development in their training routines for shoulder health and preventative care

Refer to Appendix C -

[Wheelchair Tennis Beginner Drills](#)



Mobility

Introduction to the cycle of mobility:

- Neutral position: both hands on push rims
- Maneuvering (movement to position for the shot): pushing, braking, and turning
- Preparation (setting up for shot and shot itself): importance of the timing of the racquet hand making the transition from pushing to hitting
- Recovery: propelling the wheelchair towards the recovery position (often referred to as the “hub”) to anticipate the next shot without stopping (circular mobility) *

*During the sequence of mobility cycles that occur during a point, it is an important goal for the player to keep moving continuously.

For details on the mobility cycle please refer to [Appendix B - “Mobility in Wheelchair Tennis”](#)

Additional Considerations

Competition

Competition is introduced at this stage through match play during weekly practice sessions.

Players will be introduced to scoring and all relevant tennis etiquette for match play (i.e. warm-up, calling lines, changeovers, etc.). Match sessions organized by the Provincial Association or coach will also give players a chance to gain their first competitive experience in a low-stress environment.

Equipment

Modified tennis balls, racquets, nets, and courts allow players to learn to rally quickly. Progressive tennis enables players to train and compete on courts and with equipment that is best suited to their skill level. By the end of this stage, the goal is for players to progress to full court.

Racquets

The Progressive Stages graph below provides recommendations on racquet sizes for junior players at various levels.

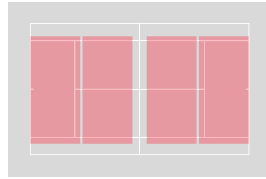
Players first learning wheelchair tennis should start with a light racquet featuring a larger head size, often called an “oversized” racquet. This will help them make contact with the ball consistently while learning to rally without wearing out their arm as their muscles get used to the game.

When choosing a tennis racquet for a beginner, here are a few things to consider:

- Oversize head size
- Lighter frame

PROGRESSIVE APPROACH

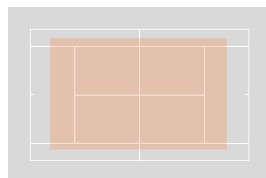
RED COURT



Ball: Oversize, high-density foam (or red) ball

Racquet: 19" - 21"

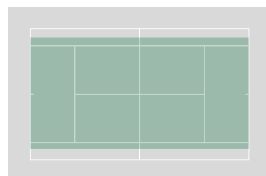
ORANGE COURT



Ball: Low-compression balls (orange)

Racquet: 23"

GREEN COURT



Ball: Low-compression balls (eg. Wilson Easy Play)

Racquet: 23-25"

Tennis Wheelchair

Players will continue to use adjustable tennis or basketball wheelchairs. The Provincial Wheelchair Sports Associations and some tennis clubs run loan programs so players can get accustomed to one wheelchair as opposed to having to switch at every session. If possible, players can take the wheelchair home to practice with between sessions.

At this stage, players may begin to make adjustments to their wheelchair to find their ideal sitting position. The following are typical adjustments a player might consider:

- **Seat height:** the height of the seat has an impact on stability, mobility, reach, power and court view.
- **Seat angle (the “dump”):** reduce or increase the seat angle, to find the ideal alignment of hips to knees in function of the disability. This has an impact on the balance and stability of the player.

- **Centre of gravity:** adjust forward or backward to position the body weight in front or behind the axle. The further back the center of gravity is, the more stable the wheelchair will be. The further forward the center of gravity is, the better the wheelchair will turn.
 - Move the footplate forwards or backwards positioning the feet in front of or under the body. The further the feet are in front of the body, the more stability and balance, but the less turning speed the player will have. And vice versa if the feet are placed under the body.
- When running regular programming, consideration should be given to on-site storage of sport wheelchairs. Should on-site storage not be available, players can remove the wheels to make it easier to transport the wheelchair in a vehicle.

For a full overview of tennis wheelchair configurations please refer to the [“Tennis Wheelchair Set Up”](#) and [“Mobility in Wheelchair Tennis”](#) in the Appendix B



STAGE 4

DEVELOPMENT

Focus: Fueling passion and developing sound technique



Stage Overview

The focus of the Development stage is on building a solid technical foundation, allowing players to develop their potential. Sound technique is essential to adapt and thrive in all tactical scenarios. The player understands and can apply efficient wheelchair mobility to cover the court in all phases of play including baseline, transition, and the net.

As players progress through this stage, some will start prioritizing wheelchair tennis while continuing to enjoy other activities. It is important to stress a healthy balance between school/work, wheelchair tennis, and family/friends.

Culture

We want to create a culture that emphasizes:

- Being accountable for their development;
- Being consistent in practice and competition routines; and
- Developing a growth mindset.

Character

We want to seek players' positive behaviours by:

- Setting goals and honing the skills needed to achieve them;
- Having a strong work ethic; and
- Following through with deliberate actions.

For support with breathing exercises, [click here](#).

Connection

We want to help players learn how to connect with each other, the instructors, and the club by focusing on:

- Advocating for needs and requirements;
- Building relationships by supporting and encouraging mutual trust and respect; and
- Developing self-care through rest and recovery.

Competence

Tactical

Players will focus on tactical development including:

- Being introduced to the concept of phases of play (neutral, offence, defence).
- Continuing to focus on consistency, managing and delivering more variation and playing percentage tennis.
- Developing proficiency in the three elements of control: direction, depth, and height.
- Recognizing when to hit a higher trajectory ball when in a defensive situation.
- Learning to control the middle of the court with the forehand.
- Serving with intention (flat or slice) directed at spots (wide, at body, down the 't').
- Awareness of an opponent's strengths and weaknesses to develop basic tactical game plans.

Doubles:

- Doubles play is introduced once a singles tactical and technical foundation is in place. Beginning doubles tactics will involve both players playing from the baseline. The team will only venture to the net on short balls or if drawn in. The players try to provoke opponents' mistakes by being consistent, playing deep or moving opponents with precision and/or power. When attacking a short ball, they will try to finish the point with a groundstroke or by approaching the net and finishing with a volley.
- Players learn the importance of continuous communication with their doubles partners during and inbetween points.
- For details on wheelchair tennis doubles, refer to the two-part Tennis Canada manual:

[Wheelchair Tennis Doubles Part 1](#)

[Wheelchair Tennis Doubles Part 2](#)

Technical:

Groundstroke and Service Returns:

- Moving players from a Continental/Eastern grip or semi-western forehand grip to allow for more top spin
 - Grip progression will depend on the coordination and skill level of the participant. Some participants will go through the grip progression from standard to advanced grips more quickly than others.
- Introducing shot rhythm and feels (hit, jab, push, catch, and block)
- Developing the ability to hit the ball on the rise to take time away from opponent
- Developing feel through various spins (slice, top spin)
- Maintaining a consistent impact point between the waist and shoulder height
- Using body segments to conduct smooth and effortless strokes
- Creating longer striking zone
- Introducing the "inverted" backhand
 - The inverted (or pronated) backhand is a unique shot only widely seen in wheelchair tennis. It allows the player to impact balls hit above the head without sacrificing power and control
 - The player impacts the ball on the backhand side with the same racquet face as the forehand ("windshield wiper motion") A grip change from the forehand is not required as the player uses the same (usually) semi-western grip used on the forehand.

Refer to Appendix F ["The Pronated Backhand"](#)

- **Volleys:**
 - Maintain Continental Grip
 - Elbows in front, away from the body
 - Racquet head above the wrist
 - Impact slightly in front
 - Catching action (adding, maintaining, or taking off speed)
- **Overhead:**
 - Continental Grip
 - Use of the non-dominant arm to point to the ball
 - Racquet in a throwing position (trophy)
- **Serves:**
 - Continental Grip
 - Balance throughout service motion
- Proper throwing action
- Consistent toss for an impact in front and to the right (1 o'clock) reaching up (for right-handed player)
- Proper synchronization of the arms
- Fast racquet head speed through impact

PHYSICAL

Physical

- Begin mastering the fundamental motor skills and combining them with quality and dexterity (throwing and catching) all with consistency and ease of mobility (pushing, braking, and turning).
- Integrate basic upper body strength development and rehabilitation exercises into the player's training routines for long-term shoulder health and injury prevention.
- A simple periodization plan should be implemented that includes an individualized and progressive approach to physical training and technical skills that progress to tactical game situations.
- **Nutrition and hydration:** provide basic education on nutrition (daily, fueling, and hydrating for competition and training days).
 - Learn and consider how the player's disability may impact energy and hydration needs.
For example, a player with a spinal cord injury may have an impairment to their thermoregulation system which can impact their ability to sweat and dissipate heat.
- **Recovery:** introduce the concept of post-training and competition nutrition and recovery strategies. Focus on the timing of meals and snacks around training and competition and the goals for the nutrient composition of every meal and snack.
 - Introduce active cool-down routines after workouts to ensure proper recovery between matches and training.
 - Sleep: encourage players to get the recommended 9-11 hours of sleep every night.



Mobility

- Continued focus on the cycle of mobility
- Players are introduced to proper recovery turns in the function of the phase of play: natural turns vs. tactical turns.
- Forehand turns:
 - The “in” turn (towards the net) is the recommended (natural) turn on the neutral and attacking phase of play. The “out” turn (away from the net) is the recommended (tactical) turn on the defensive phase of play.
- Backhand turns:
 - The “out” turn (away from the net) is the recommended (natural) turn on neutral and defensive phase of play.
 - The “in” turn (towards the net) is the recommended (tactical) turn on the attacking phase of play.

Players need to initiate the recovery turn as soon as the ball has left their racquet. A common mistake is “admiring the shot”. They want to see where the ball they just hit is landing, thereby losing precious seconds needed to get back to their recovery position (also known as the “hub”) in anticipation of their opponent’s next shot.

For details on the mobility cycle please refer to Appendix B (“[mobility in wheelchair tennis](#)”)

Additional Considerations

Competition

Players will start to compete in sanctioned local competitions (local tournaments, provincial championships) offered by some Provincial Wheelchair Sports Associations and/or PTTAs. Depending on their ability, players may enter the Birmingham National Wheelchair Tennis Championships to start competing against players from other provinces. Players will continue to take advantage of match-play opportunities as outlined in Stage 3.

Players will need to learn how to get an [IPIN and register for tournaments](#).

Players can review some of the [competition schedule](#).

Players will need to begin to understand how to manage travel, including packing and adapting to time zone changes as well as different foods and cultures.



EQUIPMENT

Equipment

Racquets

Intermediate players can start to reduce their racquet head size and add more weight to their racquet as their tennis muscles develop and they learn to generate more pace on their own. These two adjustments will allow them to keep their new-found power under control.

When selecting a racquet for intermediate tennis players, consider the following:

- Preference between Oversize or Midplus head size
- Medium weight frame
- A less powerful racquet will offer more control

Strings

As the player improves, the choice of strings may become more important. Strings provide power, comfort, and impact rotation and feel for the ball. Ultimately, the choice of strings is personal, and players will develop preferences for a particular string type and tension over time.

Tennis Wheelchair

Players can continue to use loan tennis wheelchairs; however, they may consider purchasing their own at this stage. The wheelchair will need to have ample adjustment options to maximize comfort, enhance performance, and avoid injuries.

[Wheelchair Tennis Set-Up Guide & Mobility in Wheelchair Tennis](#) in *Appendix B*

Lifestyle Considerations

The player must adopt a healthy and balanced athlete lifestyle focused on nutrition and hydration, sleep, recovery, adaptation to travel, family support, health and well-being, and the use of social media.

- Have conversations about mental health and the feelings of anxiety, stress, and pressure. Let them know there are people and places who will listen and help.
- Educate the player about appropriate and safe conduct by individuals in positions of authority, including coaches and other adults. Teach the player how to manage a situation in which they feel uncomfortable.
- Educate the player about the proper use of and time spent on social media and the responsibilities associated with digital communication.

For additional details, please refer to Appendix A ([“Mental Health & Wellness”](#))



STAGE 5

CONSOLIDATION

Focus: Emphasizing tactics and focusing on specific tasks

Stage Overview

The Consolidation stage is about building on sound technique to focus on applying tactical strategies. It will be important to reinforce and expand technical skills as it becomes more difficult to make major adjustments after this stage. The concept of reverse mobility will be applied to learn how to cover the court efficiently.

Competition will become more important and the player will learn to travel, build autonomy, support recovery, and develop their competitive mindset. In matches, the player will begin to execute on game plans and develop their style.

The 'Winning Style of Play' (WSP) is introduced and becomes the priority during training sessions and match plans.

Players become fully engaged in their tennis journey and gain a better understanding of the performance requirements.

Culture

We want to create a culture that emphasizes:

- developing leadership skills;
- being accountable for their own journey; and
- respecting others and the game.



Character

We want to seek players' positive behaviours by:

- being self-motivated;
- using challenges to build resilience; and
- being open to constructive feedback.

Confidence

We want to reinforce players' motivation through:

- learning from mistakes;
- learning to perform under pressure; and
- developing the ability to manage emotions.

For mental health support, [click here](#).

Connection

We want to help players learn how to connect with each other, the instructors, and the club by focusing on:

- celebrating teammates in their journey;
- conflict resolution; and
- developing empathy for others.

Competence

Tactical

Introduction to the 'Winning Style of Play' (WSP):

Based on research conducted of top players as well as coaches' observations, three pillars emerged that are key for success:

- 1. Mastering the 1-4 shot rallies:** on average, 70% of all rallies end before the fifth shot. The more proficient a player is in the first four shots, the higher their chances are of success. Once a tactical and technical foundation is in place, the majority of training is centered on the first four shots.
- 2. Make the opponent hit their shots consistently above their shoulders, mainly in neutral rallies:** given their seated position, players have a harder time adjusting to shots hit above the shoulders. Receiving balls with a higher trajectory is uncomfortable and can put a player on defence. As players don't have the option of taking steps backwards to quickly adjust their impact point, they can either push into the court to hit the ball on the rise or turn away from the court and move backwards to gain space and time. Both options pose reception challenges for the opponent that can be exploited by attacking the expected shorter/slower ball from inside the court with their "weapon" of choice. Note: opening the court through a flatter angled shot also remains a viable tactical choice to take the initiative in the rally.
- 3. Develop a "weapon" from inside the court to finish the point:** Players tend to develop their forehand as their attacking weapon. The more situations that can be created to allow a player to hit forehands, the better their chance of dominating the rally. The forehand weapon is best set up in combination with the high arching balls since an expected shorter and slower incoming ball gives the player time to set up for a clean, attacking forehand. Adjusting the return of serve position is also a way of leveraging the weapon of choice.

Phases of Play

At the end of this stage, the player should be able to understand and effectively use all phases of play (neutral, offence, and defence).

1. Neutral Phase:

The ability to change rhythm, use angles, have clear intentions, and exploit strengths and weaknesses. The player:

- Controls the trajectory of the shot (i.e. level, arc, loop, etc.)
- Builds points with the intention of gaining an advantage, while maintaining consistency (i.e. avoiding mistakes in the net)
- Changes direction with consistency and increased pace/tempo
- Learns to return the serve from different positions

2. Offence Phase:

There are four ways to take control of a point:

- Time: the player displays a tactical

understanding of when to play early or come to the net to reduce the opponent's reaction time

- Power: the player uses the dominant shot to send the ball faster to the opponent, challenging their timing
- Precision: the player sends the ball more accurately to make the opponent move or hit a drop shot
- Variety: the player uses a variety of shots to take control of the point and transition to an offensive game

3. Defence Phase:

- High and deep cross-court shots to gain time and make the opponent hit one more ball
- The player must reduce their tendency to hit low-percentage shots too early
- Display a tactical understanding of when to defend to buy more time

Development of “competitive” consistency:

Learn to project the ball in more effective ways with consistency, depth, and tempo to control space and time. At this stage, *just* hitting the ball inside the court consistently no longer suffices. To prevent the opponent from attacking, the ball needs to land in the court and challenge the opponent through a combination of depth, height, direction, speed, and spin.

Development of “patterns”:

Patterns are a sequence of shots that allow the player to gain a tactical advantage. Examples of effective patterns are:

- **“1-2 punch”**: wide serve to open the court to pull the opponent away from the middle. This will allow the player to redirect to the open court on the following shot.
- **Drop shot**: player exploits the opponent’s exposed court position via a lob or passing shot on the following shot.
- **“Jamming” the opponent**: player hits a ball with pace at the opponent to challenge their shot timing. Player exploits the opponent’s expected weaker (shorter or slower) ball with a winning shot from inside the baseline to the open court.

Doubles:

- Players will have developed their game style (baseline versus all-court player, power versus precision/placement player) and can incorporate it into the doubles formation to ensure compatibility with their partner. Teams will determine the “Most Effective Positioning” (MEP) for each player based on their strengths and weaknesses.
- Player will still have their “hub” at the baseline. However, as their volley skills improve, they will seek to send one player into the court on occasion with the purpose of applying pressure on the other team to attempt to finish the point with an attacking shot from within the court or a volley at the net.

Players will start to apply pressure on opponents by:

- “Freezing out” the opponent perceived to be the stronger player by aiming predominantly at the weaker opponent.
- Aiming deep in the middle of the court to exploit possible indecision by opponents on which of the two should intercept the ball.
- Opening up angles to force opponents out of position.

For details on wheelchair tennis doubles please refer to the two-part Tennis Canada manual:

[Wheelchair Tennis Doubles Part 1](#)

[Wheelchair Tennis Doubles Part 2](#)



Technical

Groundstrokes and Service Returns:

- Sound reception and projection technique: players will be able to handle all ball controls (direction, height, speed, spin, and distance) with the necessary coordination to time the ball at impact for optimal performance.
- Biomechanical efficiency: this allows the player to increase the tempo (e.g. hitting the ball earlier or harder).
- Change eastern forehand grip to semi western: the more advanced semi-western forehand grip will allow the player to apply more topspin and hit through the ball with acceleration without sacrificing consistency. It will also become the default grip for the inverted backhand (introduced in the Development stage), which eliminates the need for a grip change when alternating between shots.
- Flattening the forehand from inside the baseline at shoulder height with a longer hitting zone: this allows player to take away time from their opponent, including balls with a greater pace without losing their position at the baseline.
- Fine tuning the inverted backhand: the player is able to hit with more spin, arc, and speed without loss of consistency.

*For additional details please refer to Appendix F
“[The Pronated Backhand](#)”*

Serves:

- The player has acquired the appropriate technique to hit flat and slice serves with the continental grip
- The player takes control of the point using precision and increased power on their serve, which will instill confidence in their service game
- Player can hit all the “spots” (wide, to the body, down the ‘t’)
- Balance and synchronization of arms
- Shoulder alignment and a loose throwing arm

Volleys:

- Develop the different volley feels at the net (catch, block, punch, counter, and drop)
- Develop net game skills (i.e. half volley and intercepted volley)

Overhead:

- The player quickly gets into a ready position using both arms and they are positioned under the ball to hit with a confident throwing action
- Backhand overheads are typically hit with high volleys



Physical

The main objective is to continue to strengthen fundamental motor skills and the ability to combine them and be adaptable in more complex settings and surfaces.

- The player should have a good understanding of the performance-related factors required for competing.
- Training should be focused on developing all areas of their physical abilities and game, including speed development and endurance to compete.
- **Nutrition and hydration:** Encourage players to practice individualized nutrition and hydration plans based on their training loads, competitions schedule, and environmental conditions.
 - Teach the player the signs and symptoms of poor hydration and how the heat or environmental conditions can impact performance based on their impairment.
 - For example: a player with a limb deficiency may have decreased surface area to dissipate heat, which will impact their ability to thermoregulate in hot conditions. You may want to consider individualized cooling strategies. Similarly, players with a spinal cord injury may have an impairment to their thermoregulation system.
- **Recovery and injury prevention:** Ensure the player has sufficient time to recover between training sessions or before the next competition.
 - Encourage the player to get the recommended 8-10 hours of sleep every night (in addition to other forms of recovery to support skills development, learning, and retention).

- If the player is a wheelchair user or has a lower limb impairment, consider the additional load and recovery needs of pushing or walking with their prosthetic limbs during their activities of daily living.

Mobility

- The player is familiar with the mobility cycle and can make the right recovery decision based on the phase of play (“natural” turns vs. “tactical” turns)
- The concept of “reverse mobility” is refined: Players need to start getting comfortable with turning and pushing away from the court to recover in the most efficient way. Building on the concept of the “in” and “out” turns developed in the fundamentals phase, the player needs to learn how to establish the best possible recovery position for the next shot. On the “out” turn, players need to get comfortable turning their head away from the action – thereby losing sight of the ball – and regaining sight of the ball after their recovery and before the next shot from the most suitable recovery position.
- This concept of ‘reverse’ mobility can at first appear counter intuitive and hard to master as the player is instructed to move away from “the action”. It needs to become an integral part of all practice sessions including warm up drills with or without a racquet.

For details on the mobility cycle please refer to Appendix B ([“mobility in wheelchair tennis”](#))

Additional Considerations

Competition

The player starts competing at North American ITF Future events to challenge themselves against Canadian and international players and start establishing an ITF ranking. Competing in the year-end Birmingham Nationals will be a regular part of the player's schedule. Provincial league days (offered by provincial associations) can also add valuable match play opportunities.

Players will need to learn how to get an [IPIN and register for tournaments](#).

Appendix:

- [2024 ITF handbook](#) (draw sizes, ranking points, prize money etc.):
- [ITF Uniqlo Wheelchair Tennis Tour](#)
- [National Bank rankings](#)

Players must also learn how to best manage jet lag and time zone changes, including the number of days required to counteract time changes and how to manage travel days.

[The Canadian Academy of Sports Nutrition](#) is a good resource.

Equipment

Racquets

Advanced players should use “mid-size” racquets that allow them to play with control, feel and precision. These three benefits will provide a more connected-to-the-ball feel, increasing a player's confidence as they go for their shots.

When selecting a racquet for advanced tennis players, keep the following in mind:

- Aim for a Midplus to Midsize head size
- Look for a medium to heavy weight frame

Strings

As the player improves, the choice of strings may become more important. Strings provide power, comfort, ball rotation and feel for the ball. Ultimately the choice of strings is personal, and players will develop preferences for a particular string type and tension over time.

Tennis Wheelchair

The player will have a good understanding of what the ideal set up is for their function level and emerging game style. They may continue using an adjustable wheelchair or decide to make the transition to a fixed frame tennis wheelchair.

An exception to this is junior players, who are not recommended to purchase a wheelchair until they have finished growing.

Travel

A player may need support learning the ins and outs of travelling to competitions, especially with a tennis wheelchair, racquet bag, and luggage.

Travel considerations include:

- Understanding what to bring in a tennis bag (including replacement tires and tubes in case the tournament is ill prepared)
- Organizing travelling with an everyday wheelchair, tennis wheelchair, equipment, and luggage
- Familiarizing oneself with the airline baggage policy (e.g. cost of checking tennis wheelchair, time required at airport to check tennis wheelchair, gate checking tennis wheelchair in case of lay overs to ensure the chair makes it to connecting flight)
- Exploring a custom-made wheelchair case to minimize risk of damage
- Separating the frame from the wheels and packing the wheels in a bag to avoid risk of damage
- Using air tags on chairs to be able to track location

Lifestyle Considerations

The player must adopt a healthy and balanced athlete lifestyle focused on nutrition and hydration, sleep, recovery, adaptation to travel, family support, health and well-being, and the use of social media.

- Have conversations about mental health and the feelings of anxiety, stress, and pressure the player may feel. Let them know there are people and places who will listen and help.
- Educate the player about appropriate and safe conduct by individuals in positions of authority, including coaches and other adults. Teach the player how to manage a situation in which they feel uncomfortable.
- Educate the player about the proper use of and time spent on social media and the responsibilities associated with digital communication.

For additional details, please refer to Appendix A (“[Mental Health & Wellness](#)”)



STAGE 6

PERFORMANCE

Focus: Training with intensity and emphasizing physical development



PURSUING HIGH PERFORMANCE

Stage Overview

In this stage, the player is pursuing high performance wheelchair tennis and learning to manage the increasing demands and quality of their preparation and performance. Key focus areas include physical development, mental performance, sport science, and the coach taking on a greater leadership role in collaborating with an integrated support team (IST). The Winning Style of Play remains the focus of tactical development.

All aspects of preparation are now individualized. For coaches and parents (where applicable), a yearly training plan (YTP) for optimal development and performance is established based on the player's objectives and game style. The plan must be flexible and adapted to various intangibles that may affect the player's performance (e.g., ranking, physical and mental health, fatigue, performance momentum etc.).





Culture

We want to create a culture that emphasizes:

- Building [financial resource management](#);
- Developing sport-life balance; and
- Being proud of representing their country.

Character

We want to seek players' positive behaviours by:

- Nurturing intrinsic motivation;
- Demonstrating humility; and
- Maintaining resilience in performance demands.

Confidence

We want to reinforce players' motivation through:

- Building self-belief;
- Developing mental readiness; and
- Learning to perform under pressure.

For mental health support, [click here](#).

Connection

We want to help players learn how to connect with each other, the instructors, and their club by focusing on:

- Leveraging their support network and setting boundaries;
- Building media relations; and
- Respecting diversity of a host's culture, laws, and attitudes.





Competence

Tactical

The player continues to develop the three pillars of the Winning Style of Play and patterns, while understanding that tactical control needs to be maintained despite the increase in tempo. It becomes important to impose their own game, create as much pressure as possible, while maintaining competitive consistency. The player will be exposed to various opponents' game styles, learning to find solutions to best exploit weaknesses and impose their own strengths and style of play.

The player continues to fine tune the development in the three phases of play:

- **Neutral Phase:** the player focuses on building points with trajectories, pushing back the opponent, and moving the opponent while getting into the best possible position to win points.
 - The transitions between the three phases of play (attack, neutral, defence) in the same point are increasing and require specific focus.
 - Refining height as an effective ball control allows the player to neutralize the opponent or get on offence by better controlling time.
 - On the second serve, the intention is to neutralize the returner's attacking shots with height, depth, and direction.
 - The long and deep return remains the preferred option, but the returner's position varies on the second serve returns for efficiency. The return +1 pattern is now being implemented on a regular basis.
- **Offence:** the player must take every opportunity to attack with their shot of choice.
 - Targeting their opponent's known weakness is a key part of the tactics.
 - 'Holding return games': The return comes to maturity and is a weapon. The player is consistently looking to attack the opponent's second serve.
 - The first serve has variations with the intention to generate power and angles to create serve +1 winning combinations.
 - Decision-making is developed to identify and execute high percentage offence options to mitigate unforced errors.
- **Defence Phase:**
 - Defending crosscourt is still preferred.
 - Height/depth (through spin and arc) will allow the player to adjust the recovery position behind the baseline to get back to neutral/offence on the next shot.

Doubles:

- Doubles teams will have refined the baseline game and be able to position themselves to exploit each player's strengths often.
- The team will send a player to the net most of the time. They may have a specialist who advances to the net the majority of the time or the role may be shared. They need a solid backcourt player to build the point so that the net player can dominate and win points with volleys. The team will be a combination of singles styles including a baseline and an all-court player, or two all-court players.
- Players will learn to switch their positions in situations where they have been forced out of their Most Effective Position (MEP) in order to regain their ideal positioning.

For details on wheelchair tennis doubles please refer to the two-part Tennis Canada manual:

[Wheelchair Tennis Doubles Part 1](#)

[Wheelchair Tennis Doubles Part 2](#)

Technical

The player will involve their entire body (from the hips up) in the proper chain of movement.

Groundstrokes and Serve Returns:

The player consistently relies on their ability to hit the ball on the rise.

- All perception and technical reception skills associated with this ability must be in place.
- Greater emphasis on setup and timing skills becomes important as ball tempo and court coverage demand increases.
- Counterattacking and defending skills are required.

Serve:

- Develop a more powerful serve by fully exploiting the kinetic chain (rotational force and arm speed)
- The differences between the first and second serves are less significant; more spin on the second serve is applied but the racquet head speed is maintained.
- Player acquires capability to hit the topspin kick serve.
- A player is able to have a great variation of both first and second serve.

Volleys:

- It is essential to adjust their technical abilities according to the ball received (developing a quicker hand and closing in on easy balls).
- Continued work on "feels" as tempo increases.
- The player should master the swing volley.

Overhead:

- The player uses the proper upper body technique and is able to finish the point with power and precision.
- The player is able to adapt their technique based on their position on the court and their tactical intention.
- It is important to refine the backhand smash.

Physical

The focus is on preparing the player for the increased demands of the game based on their Winning Style of Play, including increased training, competition and travel demands. Speed, power, and endurance should be a focus in training to perform at a high level. This can be done through combining basic skills and repetition. Integrating decision making under pressure, fatigue and high stress situations into training to prepare for performing in competitive matches is also key.

- The use of monitoring tools is recommended to track daily training loads and wellness parameters such as sleep, hydration, stress, fatigue, and motivation to train.
- Upper body strengthening should be a priority, along with core and lower body (if able). A continued focus on developing endurance and fitness should be considered (at least two blocks of training focused on building physical aptitude vs. competing), while continuing to build on those components throughout the season.
- Given players do a lot of pushing on court, it is imperative to equally develop their pulling strength (posterior chain) for injury prevention and muscle balance.
- Encourage players to build fitness through other activities that require them to perform push and pull exercises off the court. For those who are able, full body exercises are recommended.
- Provide education and individual support on the nutritional demands of training in different environments, including altitude, heat, and long travels. The player should understand the importance and link between sleep and performance. The player should have sleep strategies and good sleep hygiene.
- Travelling will become more demanding at this stage, it is important to support the player with an individualized plan for jet lag, recovery, and training.
- Health and equipment modifications: Players and their support team should be aware that making any modifications to the player's equipment (wheelchair/ bucket set up, changing the grip, using different belts for support, using a new prosthesis) could have an impact on the player's skin health and musculoskeletal injuries. Any changes to equipment or technique should be made with a progressive approach and the decision should include consultation with the coach and IST. Any changes should be monitored, and slowly integrated in training prior to utilization in a competition setting.

- **Nutrition and hydration:** continue to provide education and individualized support on the nutritional and hydration demands based on the training loads and environmental conditions (e.g. heat, altitude, cold).
 - For additional considerations for nutrition and physiological considerations for players with an impairment you can refer to [this article](#).
- **Recovery:** support the player as they develop an individual recovery plan that has been trialed and is well tolerated. Ensure the player can adjust their recovery needs based on their training volume, intensity, schedule and impairment.
 - Sleep should be the priority for recovery, aiming for 9-10 hours of sleep to maximize performance, health and recovery benefits.
 - Develop individualized sleep strategies for competition and travel, including jet lag strategies (pre-travel time zone adjustments, nap patterns on arrival, light and dark exposure, meal and snack patterns and other strategies - e.g. melatonin).



Mobility

Reverse mobility patterns continue to be part of the player's practice routine with a focus on two areas:

- “Intersecting” vs “Bisecting”: As two bounces of the ball are permitted, it is often more effective to use reverse mobility and turn away from the play to ‘intersect’ the opponent’s shot. Moving away from the shot will allow more time, a better court position, and maneuvering room. This contrasts from ‘bisecting’ the opponent’s shot whereby the player turns towards the court to impact the ball.
- Introduction of recovery after the second serve: immediately after the second serve, the player will reverse recovery in order to gain time and space to receive attacking returns and to avoid getting jammed on the baseline.

For details on the mobility cycle please refer to Appendix B (“[mobility in wheelchair tennis](#)”)

Additional Considerations Competition

The player is encouraged to compete in 10-15 ITF tournaments per year. This may include Canadian and US ITF Futures events and selective tours overseas to play lower level (Futures and ITF 3) tournaments in South America, Asia, or Europe.

The choice of tournaments will be designed to:

- Align with the player’s development and competitive needs
- Allow the player to meet their year-end ranking progression

In addition, the player may be selected to represent Canada at the World Team Cup competition. Players will also aim to participate in the year-end Birmingham Nationals.

Appendix:

- [2024 ITF handbook](#) (draw sizes, ranking points, prize money, etc.)
- [ITF Uniqlo wheelchair tennis tour](#)
- [Nationak Bank rankings](#)

The player must continue to refine travel and jet lag strategies to maximize their ability to perform when travelling internationally.

The player must also be educated on doping procedures (ITF, WTA, ATP). The [Canadian Centre for Ethics in Sport](#) is a good resource. When appropriate, provide information on the impact of [alcohol and drug use on recovery](#).



Equipment

Racquets

Players may still be experimenting with different racquets based on their game style. With the help of experts, a player may explore “customizing” their racquet. Customization (or tuning) will allow them to add weight, change the balance, or adjust the grip. Once the desired modifications have been made, players will test the customized racquet to evaluate how it feels and performs. Adjustments may need to be fine-tuned based on that experience. Customization is a personal process that may require patience. What works best for one player may not work for another.

Strings

As the player improves, the choice of strings may become more important. Strings provide power, comfort, ball rotation and feel for the ball. Ultimately the choice of strings is personal, and players will develop preferences for a particular string type and tension over time.

Tennis Wheelchair

Players will want their own tennis wheelchair and know their best setup after an extended period of trial and error.

Aluminum and titanium have emerged as popular materials for light-frame tennis wheelchairs. The leading sports wheelchair manufacturers (based in North America and Europe) offer high-quality tennis wheelchairs with a range of frame, seat, footplate and strapping options. They will help identify the exact measurements and specifications for a new wheelchair. A player may need support learning the ins and outs of travelling to competitions, especially with a tennis wheelchair, racquet bag, and luggage.

Travel

Travel considerations include:

- Understanding what to bring in a tennis bag (including replacement tires and tubes in case the tournament is ill prepared)
- Organizing travelling with an everyday wheelchair, tennis wheelchair, equipment, and luggage
- Familiarizing oneself with the airline baggage policy (e.g. cost of checking tennis wheelchair, time required at airport to check tennis wheelchair, gate checking tennis wheelchair in case of lay overs to ensure the chair makes it to connecting flight)
- Exploring a custom-made wheelchair case to minimize risk of damage
- Separating the frame from the wheels and packing the wheels in a bag to avoid risk of damage
- Using air tags on chairs to be able to track location

For a full overview of tennis wheelchair configurations please refer to the [“Tennis Wheelchair Set Up & Maintenance Manual”](#)



Lifestyle Considerations

The player is encouraged to adopt a healthy and balanced athlete lifestyle focused on nutrition and hydration, sleep, recovery, adaptation to travel, family support, health and well-being, and the use of social media.

- Have conversations about mental health and the feelings of anxiety, stress, and pressure the player may feel. Let them know there are people and places who will listen and help.
- Educate the player about appropriate and safe conduct by individuals in positions of authority, including coaches and other adults. Teach the player how to manage a situation in which they feel uncomfortable.
- Educate the player about the proper use of and time spent on social media and the responsibilities associated with digital communication.

For additional details, please refer to Appendix A ([“Mental health & wellness”](#))

STAGE 7

LIFE AS A PRO

Focus: Achieving high performance and sport-life balance

Stage Overview

In the Life as a Pro stage, the player is focused on high-performance in training and competition while maintaining an emphasis on physical and mental health and wellness. The focus is on competing at high-level tournaments. Given the heavy tournament load, the practice-to-competition volume ratio needs to be carefully monitored as the player aims to avoid injuries and burn out. Periodization and the inclusion of ample rest and regeneration phases are critical. While the player's overall game is well established, there may be specific tactical and technical improvements and adaptations required to face more mature and experienced opponents.

Each member of the player's integrated support team has a specific expertise and role to maximize the player's physical and mental performance, health, and well-being. Data and video analytics take on a larger role in this stage. It is critical to develop sport-life strategies to balance the high-performance demands with life activities including time with family, friends, at work and for sponsorship obligations, etc.



The player has the opportunity to be an ambassador for the sport by giving back and being a mentor for the next generation of players.





Culture

We want to create a culture that emphasizes:

- [Developing financial resource management;](#)
- Planning for long-term career success; and
- Mentoring the next generation of high-performance athletes.

Character

We want to seek players' positive behaviours by:

- Training and competing with persistence and resilience;
- Developing their personal and professional brand; and
- Being a positive ambassador for the sport.

Confidence

We want to support confident players with an emphasis on:

- Focusing on small yet significant gains;
- Trusting the process; and
- Focusing on what you can control.

For mental health support, [click here](#).

Connection

We want to help players learn how to connect with each other, the instructors, and the club by focusing on:

- Maintaining social networks;
- Giving back to the community; and
- Staying attuned to what is required to maintain personal and professional balance.



PASSION



Have the ability to face adversity and demonstrate the conviction to show up day after day with a fighting spirit.

Competence

Tactical

All prior tactical learnings the player has acquired in previous stages around the Winning Style of Play are re-enforced and deepened with greater accuracy and a view to becoming more efficient.

- **Neutral:** the shot quality in rallies has the right balance of aggression and consistency.
 - The player can reach any part of the court from almost anywhere.
 - The transitions between the three game phases (offence, neutral, defence) are very frequent in the same point.
 - On the second serve, the speed and quality of the target are important with a focus on precision and ball movement (for example, the spin-speed is the ball going out of the court and stretching the opponent enough and the ability to build or counterpunch on the second shot after the serve will make a difference).
 - The player aims for over 50% of points won on their second serve.
 - Long and deep returns remain the preferred option, and the player's returning position varies. The ability to be effective from extreme positions on the return is important.
- **Offence:** the player capitalizes on opportunities—the only way to win at the highest level.
 - On the first serve, speed, accuracy, percentage, and quality of the serve +1 make a difference.
 - On the return, the player aims to consistently attack the second serve for a direct winner or to set up the winning return +1 shot
- **Defence:** players are mastering the art of counterpunching.
 - Players can neutralize offensive shots
 - Players are mastering the art of countering and “turning the tables” from a disadvantaged situation

For details on wheelchair tennis doubles please refer to the two-part Tennis Canada manual:

[Wheelchair Tennis Doubles Part 1](#)

[Wheelchair Tennis Doubles Part 2](#)

Technical

Technical modifications may still need to be implemented based on learnings gathered from data from a player's match. Video analysis plays a crucial role in this process.

Physical

The focus remains on preparing the player for the increased demands of the game at the highest level. More intense training takes on increased importance with individualized sessions based on the player's Winning Style of Play. A periodized approach to include proper blocks of training, competition and rest are vital to maximizing the athlete's potential and development. At this stage using different methods or tools to track training loads, intensities and volumes are recommended to help monitor the player's performance and recovery.

- Using tennis-specific drills to build strength, speed and fitness should be integrated into training, including high intensity efforts that replicate game play.
 - Upper body strengthening should be a priority, along with core and lower body (if able). Building a strong aerobic base (especially in the off season) should be a focus given the increased demands of competition, travel and training.
 - Continue to develop pulling strength (posterior chain muscles) for injury prevention and muscle balance, especially during the season.
 - Individualized training should remain based on the player's profile. The development of power, explosiveness, strength, endurance and speed must continue during competition with appropriate periods of rest.
 - Be efficient in various physical situations, stimulate creativity and seek solutions in emotionally challenging situations. The player continues to develop greater autonomy and invest in their physical development.
- **Nutrition:** ensure the player has adopted periodized nutrition plans based on the annual training plan and make sports nutrition support available to assist with monitoring and adapting energy balance throughout the year. The player should feel confident monitoring hydration and have a hydration plan for training and competition that may easily be adjusted to ensure optimal performance (especially in different climates/conditions).
 - **Recovery:** individual recovery plans should be a priority, including nutrition, hydration, sleep management plans that are adaptable based on travel, competition schedules and environments.
 - **Health and equipment modifications:** players and their support team should be aware that making any modifications to the players equipment (wheelchair set up, changing the grip, using different belts for support, using a new prosthesis) could have an impact on the player's skin health and musculoskeletal injuries. Any changes to equipment or technique should be made with a progressive approach and the decision should include consultation with their coach and IST. Any changes should be monitored, and slowly integrated in training prior to utilization in a competition setting.



Mobility

Building on the work done in the previous stages, the mobility cycle remains a focus in practice. Tactical decision-making will impact the mobility patterns (bisecting vs. intersecting in the recovery phase) and need to continuously be practiced.

For details on the mobility cycle please refer to Appendix B ("[Mobility in wheelchair tennis](#)")

Additional Considerations

Competition

The player competes in 15–25 tournaments around the world with a focus on the top sanctioned events such as Grand Slams, Paralympics, Para Pan Am Games, World Team Cup, Masters, and other high level ITF tour events (from ITF 2 to Super Series events).

In their annual competition planning, the player and coach will carefully assess factors such as level of tournament, expected competition, and travel implications. Rest and recovery needs between tournaments/tours must be considered. It is important that the coach ensures a healthy ratio of wins to losses throughout the year.

The player aims to play the Birmingham Nationals.

Appendix:

- [2024 ITF handbook](#) (draw sizes, ranking points, prize money etc.):
- [ITF Uniqlo wheelchair tennis tour](#)
- [National Bank rankings](#)

Ensure the player is aware of doping control procedures, including in and out of competition testing. The player must comply with all ITF/WTA/ATP anti-doping requirements and understand their rights as an athlete.



Equipment

Racquets

At this stage players will have found their perfect racquet and string set up. Racquet string tension may still vary based on weather conditions.

Adjusting the tension of the tennis racquet strings according to temperature can impact performance on the court. Here are some specific recommendations to help a player decide how much to adjust the string tension in different temperature ranges:

Temperature-Specific Adjustments



70-80 Degrees Fahrenheit: Consider this the “standard” temperature range. This temperature range is common for wheelchair tennis and may not require any adjustment from the standard tension if it’s optimized for these conditions.



50-69 Degrees Fahrenheit: As temperatures drop, a player may consider lowering the string tension by 1-2 pounds relative to the standard tension. This adjustment can help maintain the string’s responsiveness and compensate for the reduced elasticity due to the lower temperatures.



40-49 Degrees Fahrenheit: In cooler conditions, a player may decrease the string tension by 2-4 pounds relative to the standard tension. Lowering the tension further helps preserve the energy return from the strings, which tend to stiffen significantly in this range.



30-39 Degrees Fahrenheit: In these very cold conditions, a player may reduce the string tension by 4-7 pounds. Such a significant reduction is necessary to counteract the increased stiffness of the strings and balls.

Strings:

As the player improves, the choice of strings may become more important. Strings provide power, comfort, ball rotation and feel for the ball. Ultimately the choice of strings is personal, and players will develop preferences for a particular string type and tension over time.

Tennis Wheelchair:

The player will have the ideal seating position at this stage making them “one” with the wheelchair. Minor adjustments to the wheelchair may still be required in response of the court surface (i.e. raising and lowering of front casters or back wheels). Players should be aware of new technologies in tennis wheelchairs and be prepared to add and/or adjust their installation as a result.



Travel

Travel considerations include:

- Understanding what to bring in a tennis bag (including replacement tires and tubes in case the tournament is ill prepared)
- Organizing travelling with an everyday wheelchair, tennis wheelchair, equipment, and luggage
- Familiarizing oneself with the airline baggage policy (e.g. cost of checking tennis wheelchair, time required at airport to check tennis wheelchair, gate checking tennis wheelchair in case of lay overs to ensure the chair makes it to connecting flight)
- Exploring a custom-made wheelchair case to minimize risk of damage
- Separating the frame from the wheels and packing the wheels in a bag to avoid risk of damage
- Using air tags on chairs to be able to track location

Given the number of tournaments played and the international travel required at this stage, the player may need a second wheelchair as a back-up in case of damage or loss of the primary wheelchair.



THANK YOU

tenniscanada.com

GLOSSARY

This is a glossary of terms used throughout this document:

- **Players:** We are referring to wheelchair tennis players
- **Wheelchair Tennis Whole Player Development Pathway:** This document is referred to as the Wheelchair Tennis WPDP or WTWPDP
- **Wheelchair Tennis Classification:** Defines who is eligible to compete in ITF Wheelchair Tournaments and groups eligible players into Sport Classes for the purposes of competition.
- **Congenital Disability:** A physical disability that is present from birth
- **Acquired Disability:** A physical disability that is developed during the person's lifetime (i.e. due to an accident or illness), rather than one they were born with.
- **Mobility-related physical impairment:** A mobility impairment is a disability that affects movement ranging from gross motor skills, such as walking, to fine motor movement, involving manipulation of objects by hand.
- **Safe and inclusive:** A safe and inclusive environment allows players to train and compete without fear of bullying, harassment, or abuse. Being inclusive involves considering the physical (e.g. court and washroom accessibility), psychological, mental, and emotional needs of all players as well as using inclusive language.
- **PTTA:** Provincial and Territorial Tennis Associations
- **PWSA:** Provincial Wheelchair Sport Associations
- **Periodization:** A systematic training plan to help players reach peak performance
- **IST:** Integrated Support Team are the sport sciences, sports medicine and other team management professionals that support coaches, players, and teams.
- **YTP:** A Yearly Training Plan is a training, competition, and recovery plan for the year
- **MEP:** Most Effective Positioning for the players in doubles

APPENDICES

Appendices	56
Appendix A	57
Mental Health & Wellness	
Appendix B	60
Mobility In Wheelchair Tennis	
Appendix C	67
Wheelchair Tennis Beginner Drills	
Appendix D	69
Wheelchair Tennis Hand-Eye Coordination Drills	
Appendix E	71
Wheelchair Tennis Warm-up Drills and Games	
Appendix F	73
The Pronated or Inverted Backhand	



APPENDIX A

MENTAL HEALTH & WELLNESS

In the event of an emergency or a crisis, please call 9-1-1 for immediate assistance or go to your nearest hospital emergency room.

If you or someone you know is thinking about suicide, call or text 9-8-8.

Helpful resources include:

Find a psychologist based on the province or territory:

<https://cpa.ca/public/whatisapsychologist/PTassociations/>

Find a certified counsellor/psychotherapist:

<https://www.ccpa-accp.ca/find-a-canadian-certified-counsellor/>

Find a social worker:

<https://www.casw-acts.ca/en/find-social-worker>

Find a Mental Performance Consultant:

<https://www.cspa-acps.com/find-a-consultant>

Find a psychiatrist: <https://www.cpa-apc.org/faqs/>

My Game Plan: Mental Health: <https://www.mygameplan.ca/resources/health>

IOC: Guide to staying mentally fit:

<https://olympics.com/athlete365/articles/mentally-fit/expert-guide-to-staying-mentally-fit>

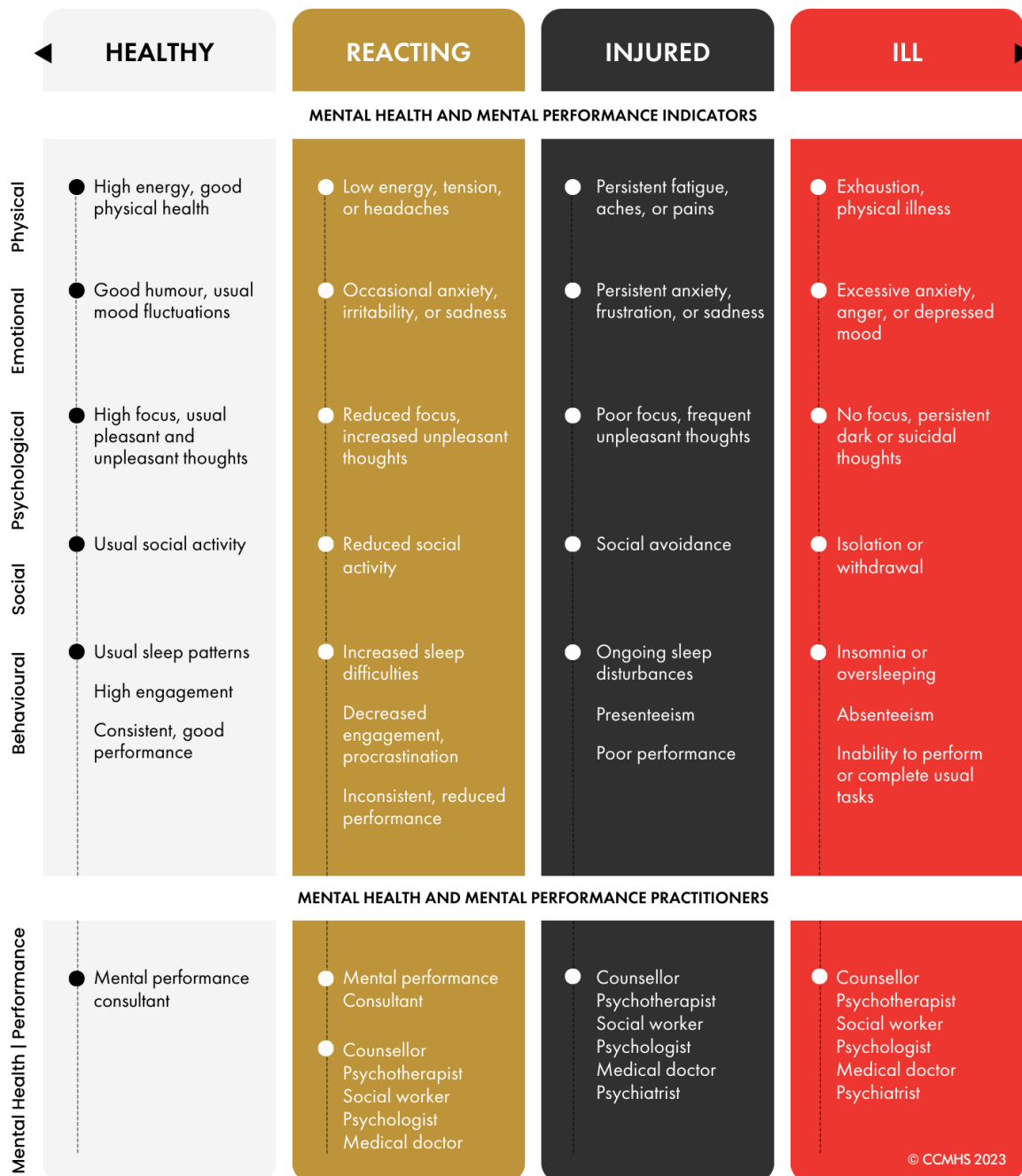
Breathing exercises: <https://www.youtube.com/watch?v=52pLedrC8ms>

APPENDIX A

MENTAL HEALTH & WELLNESS

CCMHS  CCSMS

CONTINUUM OF MENTAL HEALTH ZONES



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APPENDIX A

MENTAL HEALTH & WELLNESS

CCMHS Characteristics of Mental Performance and Mental Health Practitioners

Mental Performance Consultant	Counsellor, Psychotherapist, Social Worker	Psychologist	Medical Doctor	Psychiatrist
MPC	C, P, S	PSY	MD	MD-P
Education				
● Master's or PhD degree in Human Kinetics or related field; specialized in sport psychology	● Master's degree in counselling, social work, or related field	● Master's or PhD degree in psychology	● Doctor of Medicine degree	● Doctor of Medicine degree; specialized in psychiatry
Registering Body				
● Canadian Sport Psychology Association (CSPA) and Association of Applied Sport Psychology (AASP)	● Canadian Counselling and Psychotherapy Association (CCPA) or Provincial/Territorial College/Association	● Provincial or Territorial Licensing College	● Medical College	● Medical College
Scope of Practice				
<ul style="list-style-type: none"> ● Improve sport performance and mental health through mental performance consulting/training YES ● Improve mental health through psychotherapy ONLY if dually trained as PSY, C, P, S ● Diagnose mental illness through clinical assessment/testing ONLY if dually trained as PSY ● Treat mental illness through psychotherapy ONLY if dually trained as PSY, C, P, S ● Prescribe and manage medication NO 	<ul style="list-style-type: none"> ● Improve sport performance and mental health through mental performance consulting/training ONLY if dually trained as MPC ● Improve mental health through psychotherapy YES ● Diagnose mental illness through clinical assessment/testing ONLY if dually trained as PSY ● Treat mental illness through psychotherapy YES ● Prescribe and manage medication NO 	<ul style="list-style-type: none"> ● Improve sport performance and mental health through mental performance consulting/training ONLY if dually trained as MPC ● Improve mental health through psychotherapy YES ● Diagnose mental illness through clinical assessment/testing YES ● Treat mental illness through psychotherapy YES ● Prescribe and manage medication NO 	<ul style="list-style-type: none"> ● Improve sport performance and mental health through mental performance consulting/training NO ● Improve mental health through psychotherapy ONLY if have training ● Diagnose mental illness through clinical assessment/testing YES ● Treat mental illness through psychotherapy ONLY if have training ● Prescribe and manage medication YES 	<ul style="list-style-type: none"> ● Improve sport performance and mental health through mental performance consulting/training NO ● Improve mental health through psychotherapy YES ● Diagnose mental illness through clinical assessment/testing YES ● Treat mental illness through psychotherapy YES ● Prescribe and manage medication YES

APPENDIX B

MOBILITY IN WHEELCHAIR TENNIS

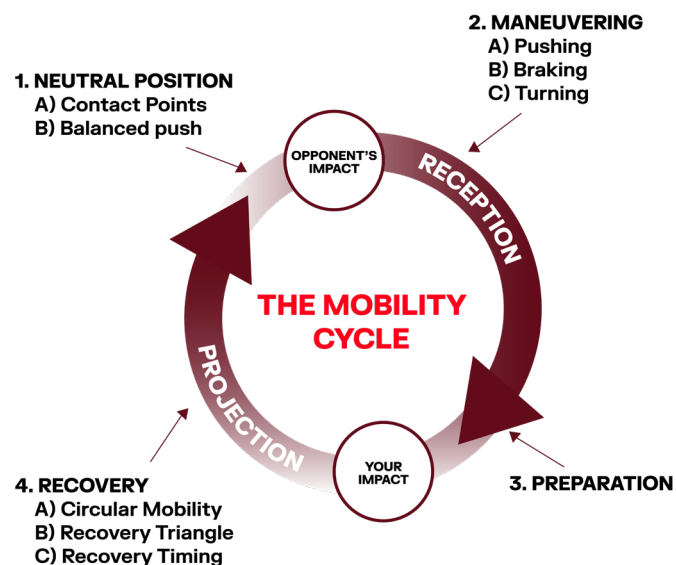
Wheelchair tennis is largely identical to (able-bodied) tennis. The game is played on the same size tennis courts and follows the same rules, barring some minor differences. Players use the same grips, hit the same strokes, and apply similar tactics and corrective techniques when they play. Coaches can apply the same teaching methodology and progressions they use for their able-bodied players.

Besides the two-bounce rule, the main differentiating factor is how a player moves on the court. Getting from A to B on the tennis court requires pushing the tennis chair versus running or using side or shuffle steps.

Coaches need to know the framework and components of wheelchair tennis movement to develop players.

To maximize positioning for any shot, a wheelchair player goes through a four-step “Mobility Cycle”. The Cycle includes:

1. The ‘Neutral Position’ prior to the opponent’s impact
2. Maneuvering (the movement of the chair to position for the shot)
3. Preparation (setting up for the stroke and the stroke itself)
4. Recovery (the chair movement to prepare for the next shot).



COACHING NOTE: During the Mobility Cycle, it is important for the player to keep moving continuously. In this way, the laws of inertia and momentum can work for the player. A point may consist of many cycles linked together with the players’ movement flowing from one cycle to the next. This is preferred over repeated stops and starts.

APPENDIX B

Let's take a closer look at the four stages of the cycle:

1. The 'Neutral Position' prior to the opponent's impact

From the return of serve, or just after the serve, the cycle starts with the player in a neutral position with the body in balance to allow for a quick start in any direction. The position requires both hands on the wheels for quick movement. During play, the neutral position is dynamic with the player simply regaining balance and establishing good contact points after a stroke.

a) Contact Points: These are areas of the hand or racquet grip that connect with some part of the wheel (tire or hand rim). Players commonly use either the pad of the palm against the tire or the forearm. Some use a larger hand rim and others remove the hand rim completely. Whatever the technique, the main goal is to develop solid contact points.

b) Ready Position/Balanced Push: It is often an advantage to "overturn" (be angled slightly to the left for a right-hander) when in a Neutral Position. This compensates for the stronger push available from the non-racquet hand.

From a Neutral Position, a player is better able to 'read' the opponent's shot and react with a strong first push.

KEY MOMENT 1: OPPONENT STRIKES THE BALL

2. MANEUVERING

After a player has either anticipated or identified where to go based on the assessment of the opponent's shot, they must line up the movement of the chair to set up for the best impact point possible.

a) Pushing: To propel the chair, the player can thrust with one or both hands. The degree to which each hand is used provides directional control of the chair. Learning to maneuver the chair with a racquet in hand is not easy; it takes time and practice. Any way to push the chair that works is correct. However, in general, short quick thrusts are used to start and make fast adjustments. Long thrusts are used once the chair is going and keep the chair accelerating.



APPENDIX B

b) Braking: This move is done by leaning back in the chair and grabbing both wheels firmly. Once this 'stutter' is performed, the player can change direction quickly. Just before the opponent's impact, it may be necessary to quickly slow the recovery movement to react more effectively. Braking can also be used when a player feels they are moving to the ball and will get too close (jammed impact).

c) Turning: There are three ways a player can change direction:

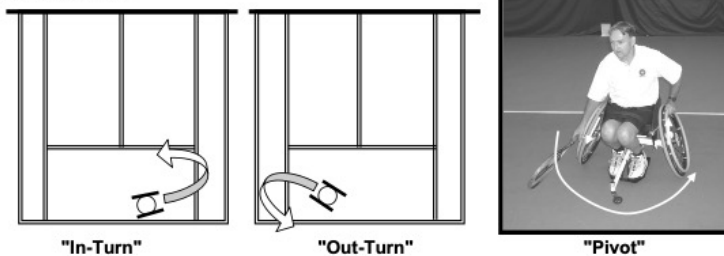
1. In-Turn: Turning in, towards the net or the centre of the court
2. Out-Turn: Turning out, away from the net or towards the sidelines
3. Pivot: Pulling one wheel and pushing the other to produce an, 'on the spot' turn. This move is often used when a ball is coming right at the player.

Turns can be executed in two ways:

1. Pull Turn: Using the movement of the chair to produce a turn by slowing one wheel. This can be done by using the hand on the same side (e.g. left hand on the left wheel) or with a "Cross-hand turn" which is done by grasping the wheel with the opposite hand (see photo).
2. Push Turn: Pushing more on one wheel to speed it up can also turn the chair.



FIGURE 17: Turns



COACHING NOTE: during a rally, players should try not to lay the racquet on their lap to try and free their dominant hand for the pushing motion. While it may feel like a more efficient way to move, it will make it more difficult to prepare for the next shot.

APPENDIX B

COACHING NOTE: Beginners sometimes push backwards to recover. This type of manoeuvre is counterproductive as it creates inertia when the player moves back and forth in a straight line as opposed to applying circular mobility.

3. PREPARATION

Once the player is in position (either moving or not) the racquet can then be set for the stroke. In wheelchair tennis, the dominant hand must make the transition from pushing to stroking very quickly.

Able-bodied players are allowed the luxury of quick leans or back-steps for last-minute adjustments in positioning and spacing, while not affecting racquet preparation. Wheelchair players, however, must use both hands to maneuver the chair for last-second adjustments, making racquet preparation difficult. Since the racquet hand is involved in both the mobility and racquet work, the timing of the racquet hand making the transition from pushing to hitting is crucial. Too early and no positioning adjustments can be made, too late and the stroke becomes a quick uncontrolled 'slap'. As a general guideline, the player should transition their hand from pushing to stroking about the same time as the ball bounces.

KEY MOMENT 2: IMPACT POINT - PLAYER HITS THE BALL

4. RECOVERY

After hitting the ball, the player needs to recover in preparation to intercept the next shot. Recovery for a wheelchair player includes many distinct features to maximize positioning.

a) Circular Mobility: As mentioned previously, it's important for players to maintain momentum rather than stopping and starting. To achieve this, they must make constant circles. This is called 'circular mobility' and is critical in the recovery process to get to the best position to return the next shot on time.

After the player has struck the ball, it is vital they get themselves to the best recovery position (often referred to as the "hub") as quickly as possible in anticipation of the opponent's next shot.

COACHING NOTE: "Don't admire your shot for too long!" Beginners have the tendency to remain in a position to observe the outcome of their shot. Priority must be given to getting back to the recovery position as quickly as possible. They should either be watching where the ball lands while they are pushing or they may take their eyes off the ball and re-locate it at the moment the opponent strikes the ball.

APPENDIX B

Whether the player makes an in or out turn will largely depend on the quality of the shot they hit and the anticipated next shot by their opponent:

- An “in turn” on the forehand (also called a “natural turn” because it follows the natural momentum of the swing and chair rotation) will allow the player to move into the court towards the net in anticipation of a shorter ball. It also gives them the option to follow the swing/chair momentum further and recover towards the back if they want to establish a more neutral/defensive recovery position.
- An “out” turn on the forehand (also called “counter turn”) will force the player to turn against the natural swing/chair momentum. The player will opt to do this to be able to reverse back behind the baseline quickly to set up a defensive position and buy time and space in anticipation of the opponent’s next shot.
- An “out” turn on the backhand (the “natural turn” for the backhand) will allow the player to recover towards the back of the court to establish a neutral or defensive hub behind the baseline.
- An “in” turn on the backhand (“counter turn”) will force the player to turn against the natural swing/chair momentum. The player will opt to turn into the court when they feel their shot can take time away from the opponent. This may lead to receiving a shorter ball, so they can take advantage of either off the first bounce or as a volley.

COACHING NOTE: As a ‘rule of thumb’, a player should attempt to perform a “natural turn”, which is the turn that is most in harmony with the player’s chair and swing momentum. As laid out above, the exception to the rule is when a player can gain an advantage or minimize an opponent’s advantage. In this case, a player may choose a “counter turn” which is one that ignores the momentum rule. A counter-turn is harder to perform but may be worth the effort tactically.

- The ideal recovery position will depend on the type of shot the player has hit:
- Attacking shot: recovery position closer or inside the baseline to take advantage of the next ball
- Defensive shot: after sending a weak shot, the player may recover more defensively behind the baseline to allow for more time and space to intercept the next shot
- Angled shot: recovery towards one side of the court (recovery triangle, view below)

COACHING NOTE: One common mistake beginners make is to recover too close to the baseline on a neutral or defensive shot. This may not allow for enough time to set up to intercept the next shot.

APPENDIX B

c) Reverse mobility: In neutral and defensive situations, a player's best recovery position is performed while wheeling towards the back fence well behind the baseline. This allows the player to establish the appropriate "hub" while moving and maintaining momentum. A recovery too close to the baseline when neutral or defensive will pose a challenge in receiving the opponent's shot.

The player pushes facing away from the court. This may cause them to lose sight of the ball. However, at the moment of the opponent's impact (at the latest), they must look over their shoulder back at their opponent to pick up the information required to "read" where the shot will land.

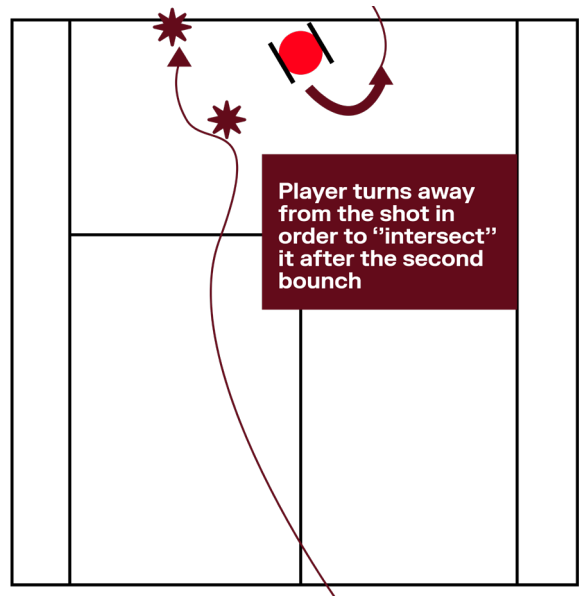
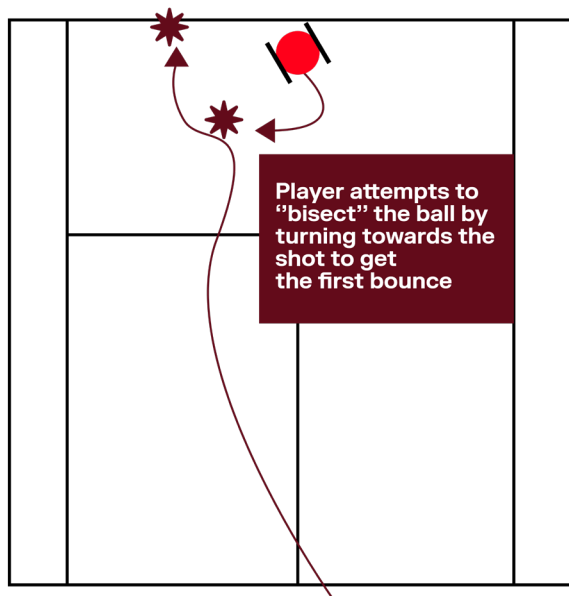
Based on the information gathered, the player now has two options:

1. Intersecting the shot: Since wheelchair players are allowed two bounces, it is often more effective to use reverse mobility, turn away from the play and 'intersect' the opponent's shot. This contrasts with a stand-up player who must 'bisect' the opponent's shot, often by going towards it. Moving away from the shot will allow more time, a better court position, and maneuvering room.

2. Bisecting the shot: Should the player assess the incoming ball as short, they may opt to turn into the court to seek to attack the shot off the first or second bounce.

COACHING NOTE: It is natural to want to always face the opponent. To "intersect" the ball, it is necessary to turn your back to the opponent. This may seem unnatural for most players, and it is a good idea to reassure them that this is a good manoeuvre. Coaches are encouraged to incorporate recovery drills into their sessions as early as the physical warm-up stage.

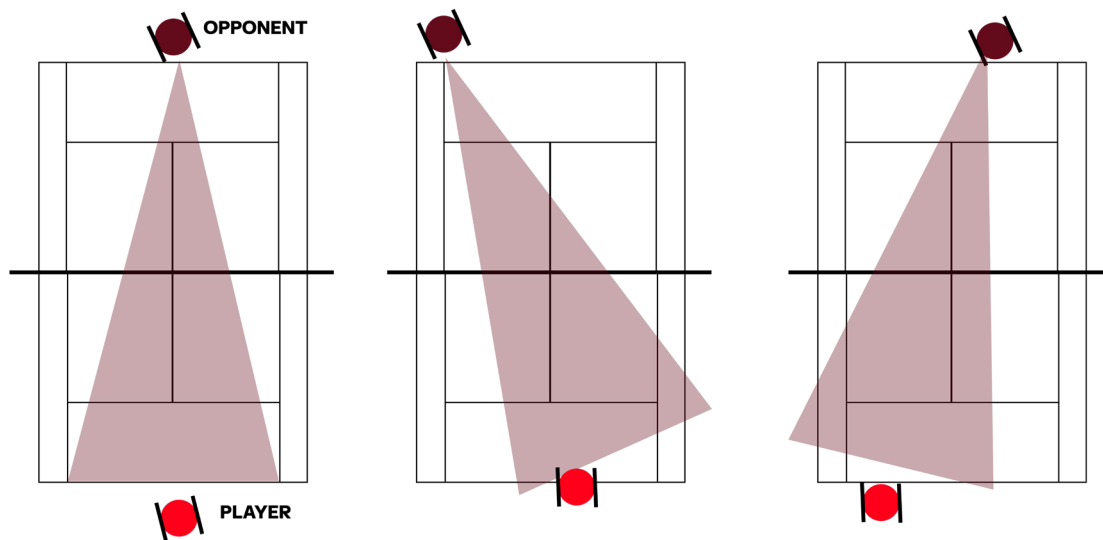
COACHING NOTE: "Wait for it!" It is important that the player does not turn back towards the court until they clearly see where the opponent's ball is going. Turning into the court prematurely (before the ball leaves the opponent's racquet) may pull the player back towards the baseline, which may undermine the ideal recovery position.



APPENDIX B

d) Recovery Triangle: It is important for wheelchair players to adopt the best location possible after their shot, to maximize their potential of getting to the next ball.

They must get to a recovery position that is equal distance to any shot the opponent hits. This position changes depending on where they have hit the ball. If we imagine a triangle with the opponent at the peak, the player must recover in between the two ends of the base of the triangle.



The triangle also lengthens or shortens depending on the strength of the shot the player hits. Sending a strong shot will allow a recovery more inside the baseline to take advantage of the next ball. Conversely, after sending a weak shot, the player may recover more defensively further back.

For the serve, players tend to locate about a chair width behind the baseline to serve (rather than just behind the baseline as all A/B players do). This will allow them to receive a deep return an opponent may hit without turning around and using reverse mobility.

COACHING NOTE: On second serves, top players have the option to set up at the baseline, but immediately reverse recover behind the baseline after their serve to gain a defensive position to intercept the anticipated attacking return. In this scenario, the top spin kick serve is usually their serve of choice as the ball travels in the air longer and therefore gives them more time to perform the recovery motion.

APPENDIX C

WHEELCHAIR TENNIS BEGINNER DRILLS

Coaching beginners' wheelchair tennis starts with the basics, including teaching the rules of the game (e.g. the 2-bounce rule), how to hold the racquet, how to impact the ball, the various strokes and how to play a game of tennis. Given you may only have ONE chance at a first impression, it is important to create an environment that is fun and engaging to allow for early success for all participants.

The drills below outline a seamless progression to introduce beginner players to the game and to lead them to the next step of the development pathway.

1. Self rallies

Balancing the ball on the racquet face

- Continental grip (hammer grip)
- Palm up first, then palm down
- The player balances the ball on strings trying not to let it drop to the ground

Progression:

- The player balances the ball and moves it clockwise and counterclockwise around the racquet face
- Include "pit stop": players have to get the ball to land in 'open throat' below the racquet head and then bring it back onto the strings

Self rallies without bounce (volley)

- Continental grip (hammer grip)
- Palm up
- The player bounces the ball (red, orange, green dot, red depending on skill level) off the middle of the racquet face and catches it.

Progression:

- Same drill with palm down
- No catching
- Alternate between palm up and palm down

Self rallies with bounce

- Continental grips (hammer grip)
- Palm up
- The player bounces the ball (red, orange, green dot, red depending on skill level) off the middle of the racquet face and lets it bounce on the ground and then catches it.

Progression:

- Same drill with palm down
- No catching
- Alternate between palm up and palm down
- Put a flat marker on the ground. The ball has to bounce on the marker (create competition: the first player to hit the marker three times wins)

APPENDIX C

2. Cooperative rallies:

Balancing the ball on the racquet face

Players go through the drills above in pairs of two. You can create games with teams competing against each other for the most rallies

3. Feeding Rallies (Coach drop or racquet feeds the ball)

- Coach and player at the service line
- Coach drop feeds balls to the forehand. The player hits the ball cross-court over the net towards a target on the opposite side (wheelchair, chair, box, etc.)
- The player gets a point if they hit the target.
- Coach makes corrections (if need be): impact point, racquet path, etc.

Progression:

- The same drill on the backhand
- Include movement (player has to push towards the spot where the ball has dropped and recover back after shot)
- Alternate between forehands and backhands
- Competition can be held. i.e. the first player/team to three successful target hits wins
- The same drill with volleys (close to the net)
- The same drills with the coach feeding across the net

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

Team Tennis: to finish a session

- One team on each side of the net
- The team can be made of as many players as are available
- Players have to get the ball across the net. They can do so by:
 - hitting over the net
 - hitting past the net
 - hitting under the net
 - hitting around the net
 - hitting against a wall first
 - passing the ball to a teammate before hitting it over the net
 - a team scores a point if the ball comes to a dead stop on the other side of the court. The first team to three or five points wins.
 - Recommendation: players with reduced mobility skills should be positioned closer to the net. Players with more athletic abilities should try and allow their teammates to hit balls across the net.

APPENDIX D

WHEELCHAIR TENNIS HAND-EYE COORDINATION DRILLS

Hand-eye coordination is a vital skill in wheelchair tennis and is defined as the body's ability to complete tasks using the hands with information gained from the eyes. It provides players the ability to coordinate the ball and racquet and make contact with the ball at the optimal contact point.

The following drills, designed for players of all levels, will help develop this skill.

1. Cooperative coordination drills for two players

- Two players set up at the net, next to each other (at about two meters distance from each other), back to the net
- No racquet in hand - a tennis ball each
- On the command "go", both players throw their ball cooperatively to the other player
- Both players catch the ball simultaneously as they push their chairs from the net to the baseline
- Players try to keep the same distance from each other as they progress

Progression:

1. Underhand throw: both players catch on one bounce with the dominant hand
2. Underhand throw: both players catch on one bounce with the non-dominant hand
3. Underhand throw: both players catch without bounce with the dominant hand
4. Underhand: both players catch without a bounce with their non-dominant hand
5. Underhand: one player catches on one bounce, one player catches without bounce with their dominant hand
6. Underhand: one player catches on one bounce, one player catches without bounce with their non-dominant hand

Variation: use a basketball and a tennis ball

Progression 1

- The player sets up anywhere on a court with a tennis ball in hand (no racquet)
- The player throws the tennis ball straight down towards the ground with the dominant hand.
- As the ball is thrown down player makes a 360-degree turn around their own axle
- The drill is successfully executed if the player catches the ball with the dominant hand before it bounces a third time.

Progression 2

The drill is repeated with the player throwing and catching with the non-dominant hand

APPENDIX D

Progression 3

- The player sets up anywhere on a court with a tennis ball in hand (no racquet)
- The player throws the tennis ball from low to high upwards with the dominant hand
- As the ball is thrown, the player makes a 360-degree turn around their own axle
- The drill is successfully executed if the player catches the ball with the dominant hand before it bounces a second time.

Progression 4

The drill is repeated with the player throwing and catching with the non-dominant hand.

Progression 5

Progression 1 – 4 drills are repeated with the player throwing and catching two balls at the same time.

APPENDIX E

WHEELCHAIR TENNIS WARM-UP GAMES

Whether it's maneuvering across the court quickly, hitting powerful shots, or reaching for a forehand, wheelchair tennis can be demanding and taxing on a player's body. An effective tennis warm-up prepares a player for training and reduces the risk of injury.

The games described below accomplish these objectives and add a bit of fun to the process. On average, a player should allocate 10-15 minutes to complete a tennis warm-up.

“Sharks”

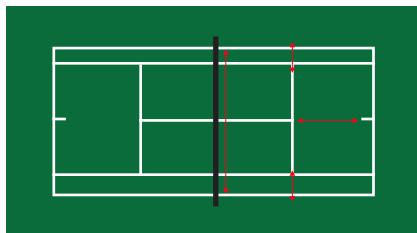
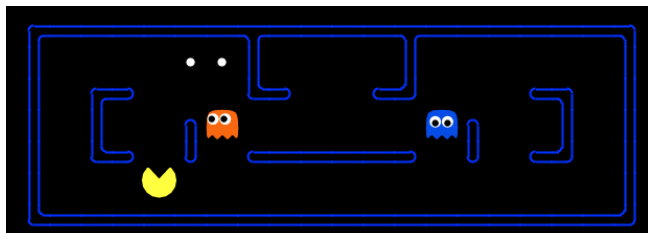
- Tag game
- “Fish” (players) on one side of the court/gym (north side of the bay). 1-2 “shark” (players) in the middle
- Fish trying to push to the other side of the court/gym (south side of the bay).
- The shark is trying to catch (tag) the fish. If fish are caught prior to reaching the destination, fish are either out of the game or they become sharks themselves
- The last fish surviving wins

“Police Tag”

- Tag game
- 1-2 participants are “cops”, rest are “robbers”
- Cops try to catch (tag) the robbers
- If caught, the robbers go to “jail” (stand still and have to put their hands up to the side)
- They can be freed from jail if other robbers push under their outstretched arms
- The game is over if all robbers are caught
- Court size: depending on the number of participants, court size is either full court (full gym) or half court (1/2 gym). The more participants the bigger the court.

“Pac-People”

- Tag Game
- 1-2 “ghosts” – the rest of the participants are “pac-people”
- Everybody (!) is only allowed to move on lines of the court/gym. The net is considered a line as well as the service line through the doubles alley and middle line (view graph below)



Objective: Ghosts try to tag all pac-people. Once a pac-person is tagged, they leave the game. The game is over once all pac-people have been tagged.

APPENDIX E

Balloon games:

- Keep the balloon in the air while remaining in one spot.
- Game: The player that can keep the balloon in the air longest without it touching the ground wins.

- Keep the balloon in the air while moving around.
- Game: The player that can keep the balloon in the air longest while moving around the court/gym without it touching the ground wins.

- Balloon race: The first to get from A to B without dropping the balloon wins
- Same game with two players partnering up

Players progress to using red, orange, green, or a regular ball.

“Flag Tennis”

- Tag game, each participant on their own
- Every player has a piece of masking tape stuck to the back of their chair that is their flag.
- Objective: players try to “grab the flag” off the other player’s chairs. If the flag is grabbed, the player is eliminated. The last player with a flag wins.
- Court size: depending on the number of participants, court size is either full court (full gym) or half court (1/2 gym). The more participants the bigger the court.

“Know your lines”

- Race
- Every player picks a line on the tennis court and goes to it.
- The coach calls out lines and players have to sprint to the line that has been called out. i.e. (“doubles sideline, center service line, baseline, net”)
- The player to reach a line last is eliminated until only one player remains.



APPENDIX F

THE PRONATED OR INVERTED BACKHAND

The Pronated Backhand is becoming a staple shot in intermediate and advanced wheelchair tennis games. The stroke is performed by 'flipping' the racquet, so the back of the hand is in front of the player's face (palm turned outwards). Typically, an eastern or semi-western grip is used. The ball is contacted on the backhand side of the body either as a flat shot or with topspin.



A Challenging Situation

The technique of the pronated backhand was not created by coaches. It evolved as a solution to a problem top players faced in competition. They outlined the problem as such: "I need to be able to take a ball that is higher than ideal on the backhand side and send it back in a way that doesn't give my opponent an advantage."

One common solution was to slice the high ball on the backhand. A disadvantage of that is the difficulty of putting pressure on the opponent. If not done well, the ball has a tendency to 'pop-up' giving the opponent the advantage. Even if it is hit well, a slice with its lower trajectory tends to stay low, bouncing at a height just right for a wheelchair opponent. In addition, the difficulty of generating good racquet speed on a high slice means the pace of the shot is not very challenging and it may land short.

A topspin backhand did not fully solve the problem either. An appropriate low-to-high racquet path is very difficult when the ball is high. Another common option is to simply 'push' the ball back high and flat. All these challenges add up to a weak reply when receiving a high ball to your backhand.

Pronated Backhand Advantages

In contrast to a traditional topspin backhand, flipping the racquet face over allows a low-to-high racquet path because of the addition of the forearm and elbow segments. That path can be maintained in many more ranges than a topspin backhand, which can only produce an appropriate low-to-high path in a very small impact point range. In other words, if the ball is higher, closer to the body, or further away, a steep low-to-high path can still be performed with the Pronated Backhand technique. This is a tremendous advantage for a wheelchair player who needs strokes that work in many 'emergency' situations.

With the racquet path advantage comes the added bonus of being able to accelerate the racquet through the shot. Having a fast racquet speed will make the shot more challenging (because of pace, added height and spin) and allow the player the psychological advantage of remaining aggressive on the shot.

APPENDIX F

Learning Progressions

Here are some suggested steps that have been used successfully to help players master the Pronated Backhand. These steps present the technique in the most common situation it occurs, receiving a high backhand in a crosscourt rally.

Step #1: Decision-making:

The first step required is to identify the right time to use the shot. By deciding quickly if it is the appropriate time, the player can prepare early. The coach can have the player call out cue words to identify the right time. When the ball is lower to the backhand, the player can call “back” (to signal a regular backhand). When the ball is higher, the player can call “flip” (to signal turning the racquet face over).

Having the player call out the word allows the coach to observe when the decision is being made. For example, if the player cannot call the word before the ball bounces on their side, it may indicate they are not focused on judging the ball. Progress the player from deciding before the bounce to before the ball comes over the net.

Step #2: Motor Pattern:

Once the player can quickly select the right time to apply the shot, the next step is to help them feel the correct movement. At first, it may be very strange to hit the ball like this. A successful progression starts with the feeling of the forearm being pronated. The ability of the player to feel and control the racquet path and angle in this ‘upside-down’ position is critical.

(a) Palm Paddle: Players can grasp this feeling better if a ‘Palm Paddle’ is used (see photo). This light wooden paddle is held against the palm of the hand by an elastic strap. They are easy to make and invaluable for understanding the technique. The coach can feed the ball to the player who needs to feel how they can project the palm of their hand low-to-high up the back of the ball. Once the kinesthetic connection is made with the palm of their hand, the shot comes easier.



APPENDIX F

(b) Racquet: The player can then grip high up on the racquet with the palm of the hand against the throat (the index finger can be touching the strings as a checkpoint). The same low-to-high movement is used to give the ball topspin. The player now makes a kinesthetic connection with the palm of their hand and the strings. The grip is then gradually moved down the racquet until a forehand or continental grip is adopted (progress as fast as the player can handle). The goal is to feel the impact and get used to controlling the racquet angle when it is in this 'upside-down' position.

Step #3: Tactical objective:

The third step is to use the technique to challenge the opponent. The tactic is to send a high topspin shot with authority to the opponent's backhand side. The desired effect is to put the opponent in the same predicament (receiving a high ball to the backhand). This will hopefully produce a weak or short reply that can be taken advantage of. It is also very useful to teach the next shot after the pronated backhand to package it into a successful tactical pattern.

Conclusion

The Pronated Backhand was created by top wheelchair players to master a challenging situation. Coaches can 'reverse engineer' the shot and introduce it as another option for players at many levels. It is important to always teach shots in a tactical situation so they can be more easily integrated into real match play.

*This article was written by Wayne Elderton and was featured on his acecoach.com website. A Tennis Canada Level 4 Coach/Club Professional 3, Wayne has been a consultant for the National Wheelchair Tennis program and has coached three players to the top 10 in the world. He is currently the Tennis Director at the North Vancouver Tennis Centre.