

# MY COACH

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## MyCoach

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*Visual observation is complemented by performance analysis.*

# Seeing is believing

**With technology being embraced across all sports, it makes sense for tennis coaches to enhance their programs with a technological edge. BY DANIELA TOLESKI**

For generations, sportspeople of every stripe have been analysing opponents to find their weaknesses. This knowledge can prove to be the difference between winning and losing.

Whether it's opposing team scouts sitting in on training sessions, spectating matches live, watching videos of past matches or analysing statistics, all this activity and information is about drawing conclusions on particular players or teams.

It can be the little things that matter, like what an opponent usually does when they're under pressure, or a shot that is most likely to falter in particular situations. What is discovered here becomes the blueprint for a game plan. And a well-executed game plan can ultimately assist in claiming victory.

Back in the day, all this scouting information on athletes and opponents was captured via observation and note-taking. Inevitably, some moments were overlooked and, as a result, not recorded.

This process has now evolved, due to advances in technology, to performance

analysis that can capture every single detail. This accurate video observation and recall provides the key information for athletes to be able to improve in future matches.

### Showing the truth

Tennis Australia's Performance Analysis Manager Darren McMurtrie has been involved in performance analysis since the mid-1990s. Before beginning at Tennis Australia in 2008, he worked at AFL clubs North Melbourne and Carlton and spent time at the Australian Institute of Sport where he worked with 35 various sports.

One key aspect of his role is providing vision to his athletes so they can see what they need to improve on. McMurtrie says that when he first started, many players had never before seen themselves on video.

"It was a bit of shock for them to see themselves," he recalls. "Some of them thought they had their elbow in a certain position but when they looked at the video it was in a totally different position. So I think probably shock at first that this

is the way they actually look on video, because they think they look completely different."

The benefit of video analysis is that athletes can see for themselves exactly how they performed in a match or during training, with coaches able to select significant moments to support their lesson plans.

"They can see one error straight after the other, so they can start to see a trend, whereas if you watch a three-hour match you may lose (track of) what happened in the first set. But you can quickly watch 45 errors, if you've made 45 errors, one after the other in 10 minutes and really see a pattern," McMurtrie explains.

This self-awareness in an athlete will help them to break a pattern if they need to or make small alterations to further improve.

### The software and hardware

There are a fair few software options available to coaches. For example, Dartfish and Fair Play sports analysis systems both have tools for analysing matches, including



Tennis Australia's Performance Analysis Manager Darren McMurtrie capturing and coding footage.

statistics, which provide a comprehensive visual for coaches and players.

"We have about 23 cameras, all hard-drive cameras," McMurtrie says. "It's just copying the vision across (to the computer), transcoding it into a format that everyone's happy with and then trying to get it coded as well."

During his time at Tennis Australia, McMurtrie has seen performance analysis come a long way and it's bound to continue to advance in years to come.

"Also for the coaches it's been a bit of a culture change. They haven't had this information available to them before as readily accessible as it is now," he says.

Technological advances in laptop computers, digital cameras and analysis software, along with the utilisation of mobile phones and tablets, is playing a significant part in simplifying the performance-analysis process.

With the coding of video footage usually completed post-play, the advantage is being able to slow down or rewind and review footage to record accurate observations.

"If it's a two-hour match it will take you around about two hours, maybe a little bit less," McMurtrie says.

### Playing a role with Stosur

Being ready for an upcoming match can go

beyond an athlete's personal preparation. It's about having all bases covered.

McMurtrie played a significant part in providing visual and statistical information to Australia's No. 1 player Sam Stosur during the US Open in 2011.

"My job was to use past matches to try and expose their weaknesses for Sam and my job mainly was to give the information to Dave (Taylor, Stosur's coach) and then Dave would go through the information and give the information needed to Sam," McMurtrie says.

"It started off with statistics and then slowly we introduced vision, so she could really see the weaknesses. And I suppose for the (US Open) final we exposed enough things that Sam could use her strengths to beat Serena (Williams') weaknesses and you just have to watch the match ... she played it to an absolute T and obviously won the match."

Tennis can be a game of millimetres and performance analysis is one other tool that can potentially provide an edge over an opponent. This edge may be ever so slight, but it can make a significant difference.

"I think it's proven with Sam that only a little bit of data on each player can definitely help if you can really play the game plan to what you see in the data and the vision," McMurtrie says.

Although many coaches can observe an athlete during training or matches and see the necessary changes required to improve performance, even the best can miss an element in an athlete's game.

Performance analysis takes the guesswork out of coaching and replaces it with accuracy and clarity that won't be misinterpreted by athletes. Moving with the times and applying a technological approach to coaching programs will create a distinct advantage for not only athletes but for coaches too.

## Benefits of performance analysis

### Communication

- Instantly view videos and provide athletes with visual feedback.
- Easier for athletes to see the corrections and adjustments needed to their game.
- Accelerate their learning process.

### Analysis

- Capture video of your athletes during training or competition.
- Record the details of a match in a centralised database.
- Store the digitised video files of each match on a portable hard drive or a DVD.
- Share statistics live across multiple machines or the internet to coaches, websites or media.
- Build your library of coded games.
- Store all the performance, training, medical and personal details on your athletes.

### Game strategy

- Plan strategies and game plans on your players' opponents.
- Identify tactics based on the strengths/weaknesses of your player and their opponent/s.

### Injury rehabilitation

- Enhance your athletes' understanding of the recovery process.
- Monitor the progress of athletes over time during their recovery period.
- Easier to see when an athlete is ready to re-commence full training.

Source: [www.fairplay.com.au](http://www.fairplay.com.au)



Sam Stosur's coach David Taylor has utilised performance analysis to create game plans for Australia's No. 1 player.

# APPEALING TO GENERATION Y AND Z



**Peter Apin has enjoyed coaching stints in Europe, the United Kingdom, America and India, but these days his dedication is to Australia.**

When parents are pretty crafty with a racquet it's only fitting for some of that talent to rub off to their offspring. Peter Apin found out that it's not only talent, but also practice that plays a part in an athlete's ability.

"My parents were very good players from Queensland so I was always playing with them from fairly early on. My first lessons were when I was about 10 years old and in hindsight they were memorable for how bad they were," Apin laughs.

It didn't take long for Apin to master the sport and soon he was travelling abroad making lifelong memories that put a smile on his face to this day.

"Everything from my first time playing in the English summer grass court events, to playing in India many years ago living off very basic food so you wouldn't get horribly sick, to making great friends travelling around to tournaments," he reminisces.

It was this "love of the sport" that saw Apin explore the possibility of turning coaching into a career and before long it became his reality.

Apin turned his attention to coaching after high school and scheduled it around studying for his business degree.

"I then played and coached extensively overseas, travelling to Europe, UK, USA, India and of course, around Australia. I was the head coach at Vaihingen an der Enz Tennis Club, which is near Stuttgart, Germany and the Hotel

Rot Flüh in Haldensee in the Tirol, Austria," he says.

With overseas experience under his belt, Apin returned to Australia and commenced coaching on Sydney's North Shore, where he developed and started programs aimed specifically at young children – Tiny Tots Tennis and Mega Tennis.

The Peter Tennis Academy was then established and coaching has also been expanded to primary schools in the area, including St Ives and Turramurra primary schools, along with various tennis clubs on the Upper North Shore.

"I tend to have a large range of students, from children in primary school to those who play competitively to those who just want some exercise," he says.

"The main thing though is that they enjoy what they are doing. They may be playing because they are trying to improve their position on their high school team, but they need to get some sort of satisfaction from what they achieve on the court, otherwise it becomes a grind and we lose them to the game console."

The current generation, and the ones to follow, will always have a few more devices to divert their attention and it's a challenge for sport in general to overcome. But by incorporating video into coaching lessons Apin is tapping into the key technological aspects that appeal to his Generation Y and Z athletes.

This in turn assists Apin in providing an in-depth analysis for his students, which will ultimately uncover the refinements necessary to improve their game.

"I'm always looking out for innovative or different ways to help, particularly my students that play competitively," he says.

"Something that has been very useful has been the slow-motion videos that Tennis Australia has done for all the Tennis Australia coaches. In my case Tennis Australia also formatted them for my iPad so I can now easily carry and show them to my students. It's been a great coaching tool."

With over 30 years of coaching experience, Apin understands the role technology is playing in everyday life and has taken a keen interest in the devices he can use during lessons.

"I want to continue to improve my own knowledge of the game through the many vehicles available to me," he says. "I want to visit some of the big tennis academies in places like Spain, as I know a coach never stops learning."

With this attitude it's Apin's athletes who will ultimately benefit from his enthusiasm and willingness to build on the foundations to create strong relationships.

"You need to know what they actually want to achieve from the classes. You need to take some interest in the other things they do, like which X-Box or PlayStation games they love playing, what movies they like or how their work's going."



In the past year, particularly, Apin and his team have focused on increasing their clubs' bases by placing an emphasis on offering innovative techniques.

Whether this is modified equipment or video analysis, Peter's Tennis Academy is embracing the diverse reasons people decide to play tennis and is "making tennis more accessible and fun to play for as many people as possible."

# What do you see?

By the Stroke Master

Known for their serve-and-volley game, Australian Pat Rafter and Swede Stefan Edberg excelled at the net. An analysis of their charging forehand volley shows how their precision kick serve helped them to get to the net quickly, put pressure on their opponents and, in most instances, put away an easy volley.



- *To gain maximum power and an optimal net position both players transition through the volley without stopping.*
- *Contact is made before the right leg touches the ground, which assists the racquet to continue its forward momentum and not pull down towards the ground.*
- *Index finger is spread to keep the hand relaxed for better control.*
- *Simple shoulder turn, with racquet in front of the right shoulder and strings facing the target.*
- *Left arm mirrors the right arm to allow the shoulders to stay sideways and balanced.*
- *Body weight is transferred from left to right leg to enhance forward momentum.*

# Injury surveillance

As players compete at a high intensity, they become more susceptible to injury.



The player medical centre at the Australian Open provides players and coaches with access to medical care before and during the tournament. It is open 10 days before the main draw starts, from 9am until half an hour after the final match finishes, and is staffed by four nurses and five doctors with both general practice and specialist sports medicine expertise.

For a number of years all consultations have been entered into the computer and stored on the Athlete Management System (AMS). The AMS is also used for all the Pro Tour events in Australia as well as at all the National Academies and AIS tennis programs. This allows access to a player's past medical history by those employed at Tennis Australia treating the player.

Analysis of the data entered each year can give insight into the most commonly occurring injuries (or illnesses) and highlight possible preventative programs.

During the 2012 tournament there were over 510 consultations involving over 230 players. More than 50 percent

of these consultations were due to non-musculoskeletal causes, that is, medical in nature – coughs, colds, sore throats etc. (see section on the risk factors of viral and bacterial illnesses, page 61).

Of the specific tennis-related injuries the majority were chronic in nature, some with acute exacerbations of pre-existing conditions.

For example, 28 players had pain arising from their spine with the breakdown as follows:

- Neck – six
- Thoracic spine – nine
- Lumbar spine – 13

Twenty-one players presented with pain arising from a damaged tendon, with the Achilles and patellar being the most common. Players will often be able to play with such injuries but acute exacerbations can interfere with performance and sometimes cause retirement from matches. The key to preventing tendon injuries is adequate load management off and on court, which needs to be individualised.

This is an area of significant research and over the past few years a number of novel treatments have been instigated, including shock-wave therapy. This treatment was available for the first time at this year's Australian Open.

The most common acute injury for the past few years has been strains of the non-dominant rectus abdominis muscle (the left side in a right-handed player). With the emergence of this injury, the AIS and National Academy players have undertaken preventive strengthening of this muscle and the incidence has fallen significantly within these groups. However these types of programs do not appear to be being followed by all players around the world.

Joint injuries are common, with the shoulder, wrist, hip, knee and ankle the most prevalent. The rise of hip pathology has been noted over the past 10 to 15 years, but non-dominant wrist injuries were unheard of until the double-handed backhand became popular; now they occur regularly.

## Exercise and the immune system

Did you know that there is an inverted U-shaped association between exercise and its effect on the immune system (see graph)? Generally, exercise of a mild to moderate nature will increase your immune system and reduce your chance of illness. However, with extreme or prolonged intense exercise, this benefit can be lost and can have a negative effect on your immune system.

Various means of assessing the player's wellbeing during intense training – resting heart rate, sleep quality, muscle soreness – can give coaches some indication of when training may need to be reduced before a player succumbs to illness or injury. If the warning signs are not looked for or ignored, the player may develop an overtrained state which can seriously affect performance and take weeks or months to recover from.

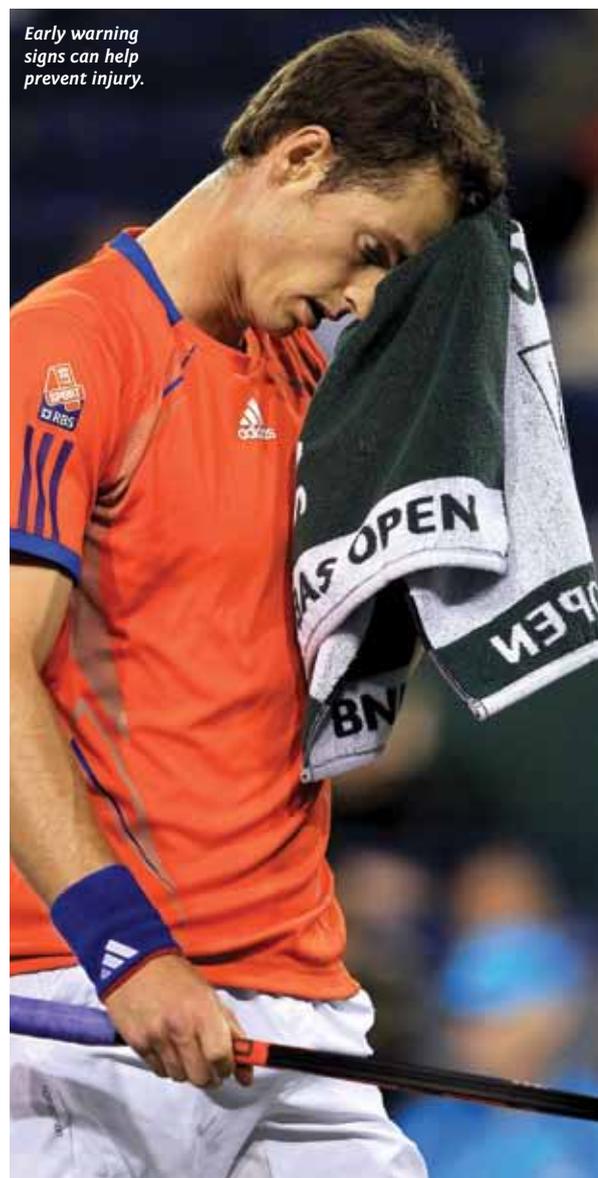
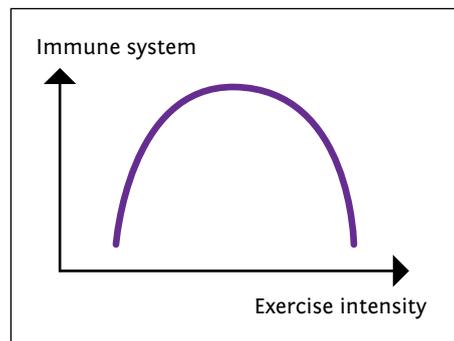
## Risk factors for viral or bacterial illness in tennis players

The number of players at the Australian Open presenting with a medical illness is much

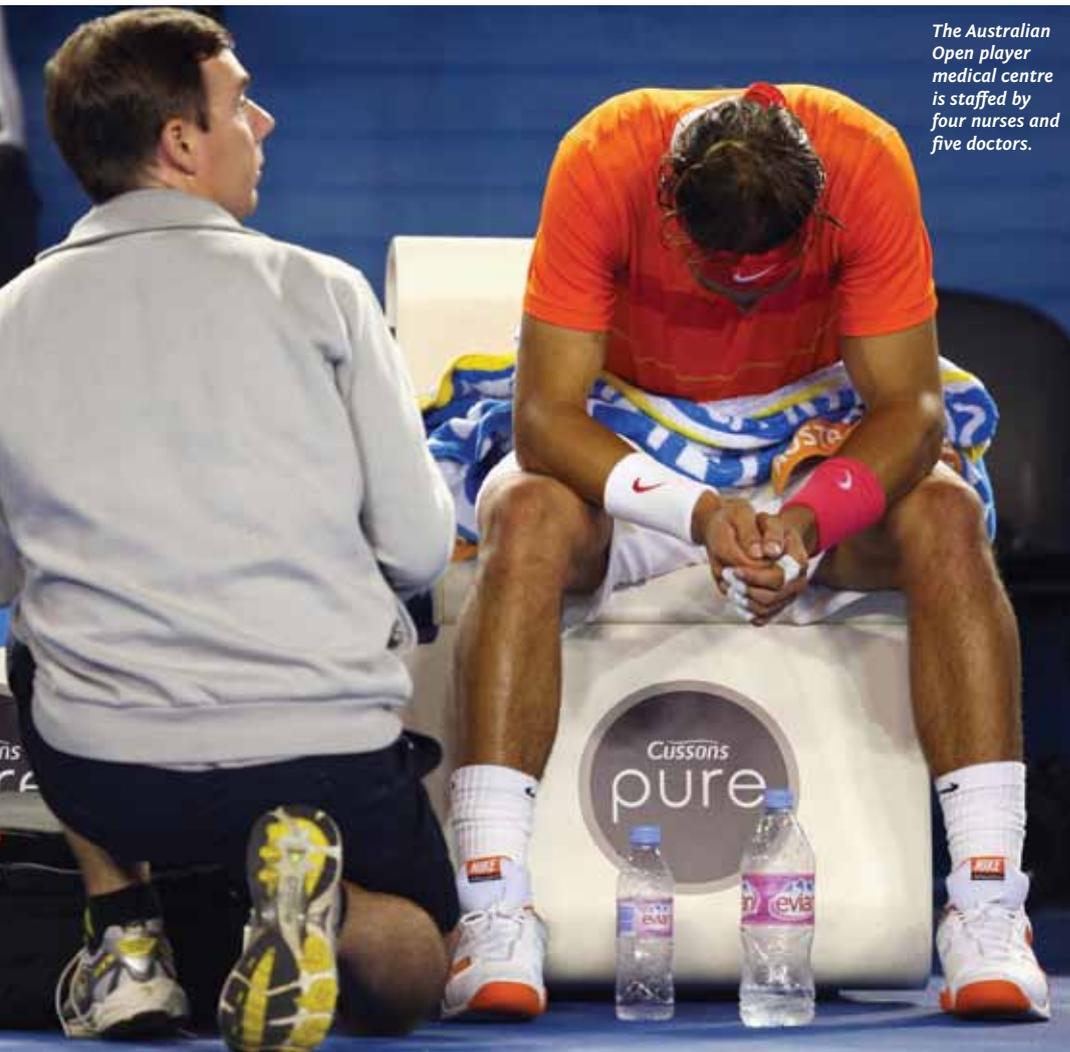
higher than one would normally see in the general population. There are a number of reasons behind this. These include:

- High/intense training loads reducing the immune system
- Jet lag/travel
- Proximity to other players and coaches within the locker room environment
- Poor personal hygiene (not washing hands after going to the toilet, not washing hands before eating, shared drinking from bottles, cups etc)
- Poor sleep
- Stress

The above factors are not necessarily confined to players at the Australian Open but players at tournaments of all levels.



Early warning signs can help prevent injury.



The Australian Open player medical centre is staffed by four nurses and five doctors.

## Prevention

Some simple steps can reduce the risk of contracting a viral or bacterial illness.

These include:

- For jet lag, consider the use of melatonin and possibly sleeping tablets under strict medical supervision.
- Adherence to personal hygiene (washing hands regularly and not sharing drinks etc).
- When flying consider the use of possible preventative agents such as Echinacea and Zinc.
- Find ways to relax and reduce stress.
- Ensure all vaccinations are up to date.

Those players not subjected to drug testing but travelling to countries where traveller's diarrhoea is prevalent can consider the use of travelan which is taken before each meal and significantly reduces the risk of a stomach upset.

*Dr Tim Wood is Tennis Australia's Chief Medical Officer*

# COACHES' CORNER

## The technological boom & coaching changes in the 21st century

We are in the midst of a technological boom. All of society has been affected by this technological revolution and tennis is no exception. By ADRIANA SZILI

Tennis Australia Club Professional coach Rick Willsmore is taking full advantage of the digital age, by using the Android application Tennis Math. He has downloaded this onto his mobile phone and tablet to assist his players in analysing their matches.

Tennis Math is a scoring and statistics application that enables users to track scores, points, shot types and even net conversions. The application can also display statistics by set and provide users with a detailed history of a match that can then be shared via email, SMS or Twitter.

Willsmore, the Academy Director at Scarborough Tennis Club in Western Australia, has been using Tennis Math for a year with a new crop of under-12 nationally ranked players and is happy with the application's practicality.

"Tennis Math is easy and convenient to use on my phone or tablet as I can email the player immediately afterwards," Willsmore said.

Willsmore believes that using this application helps his players as it "provides evidence for them to applaud their positives and identify areas of improvement."

It is not uncommon for coaches today to use a wide variety of technological applications to enhance their coaching. Willsmore believes that this certainly benefits players and coaches alike by providing players with more stimulating lessons.

"The world we live in now is about iPads, smartphones, apps and the internet, so using something that is appealing to the current generation is going to be positive. This particularly benefits players who believe the facts over promise, vague concepts or evaluation," Willsmore said.



*Rick Willsmore has been using the Tennis Math for a year and is providing his athletes with a better tennis experience.*



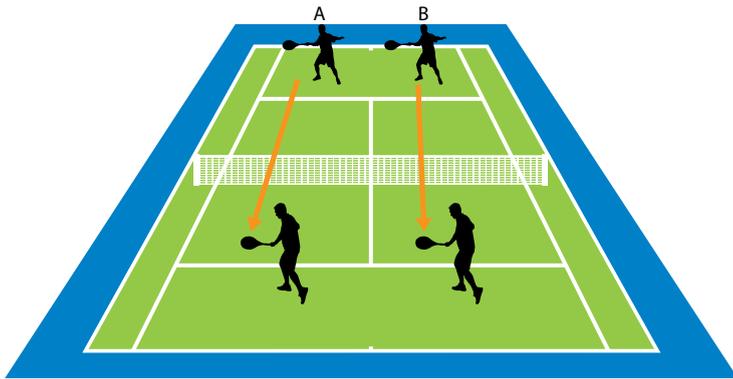
While Willsmore advocates the use of Tennis Math in his business he says that using social media can also assist players.

"Players can use Twitter to follow all the pro players and other motivational quotes and mentors. Players can then tweet their training diary to keep them accountable. In addition, YouTube clips can also be used to complement a lesson or for homework," Willsmore said.

Willsmore believes that in the future the use of technology will be "just another part of tennis coaching." He says that "using technology to not just analyse matches but provide a better tennis experience is a positive for the industry."

With the ever-increasing use of technology in the tennis coaching environment, the possibilities for improvement seem limitless. It provides coaches with another useful teaching approach, and combined with traditional coaching techniques will surely benefit the next generation of tennis players.

# Net Approach Drills



## 1. Bounce feed approach

### Objective:

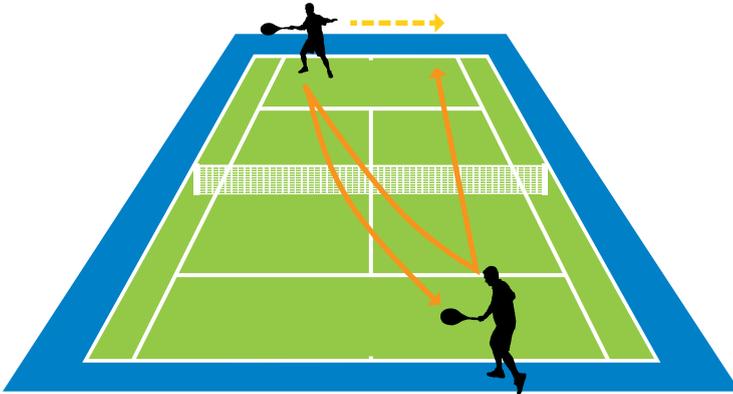
- To develop the approach shot using the appropriate stance and establish a good net position.

### Description:

- Players A and B bounce the ball and hit off the front foot using a square stance. They approach down the line (doubles alley included) and progress to the net. Play the point out up to seven points then switch roles.

### Tips:

- Volleys are to be hit between hip and shoulder height (ideal impact point).



## 2. Crosscourt rally and approach

### Objective:

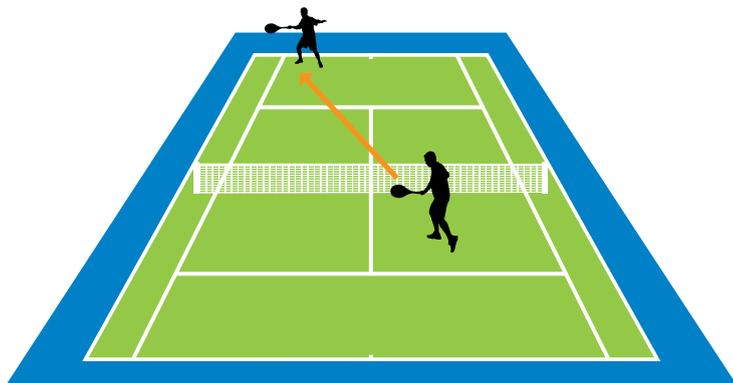
- Players to recognise the short ball and take time and space away from the opponent by approaching down the line and establishing a good net position.

### Description:

- Both players begin a crosscourt rally. One end is nominated to approach when the ball lands short. The approach shot is to be played down the line. Points can then be played out as per normal. Play to seven points and then swap roles.

### Tips:

- Players are to recognise the ball flight of their opponent's shot and move appropriately. Good players will move when the ball is in the air.



## 3. Steal time and space drill

### Objective:

- Players are to steal time and space from their opponent via approaching the net.

### Description:

- Points are to be played out of the hand (or with a serve). Either end may transition to the net at anytime. Bonus points are rewarded to any ball played out of the air. Play first to 12 points then swap roles.

### Tips:

- Use a low base and be dynamic.

### Key



Coach



Player

Coach feed



Thrower/Catcher

Ball direction

Player movement

Spot markers

Drop down lines



Buckets



Hoops