



Tennis goes green: Should wheelchair tennis follow?

Suzie Dyrbus.

International Tennis Federation.

ABSTRACT

The use of low compression balls has been much debated; however the new tennis rule change poses questions for its introduction into wheelchair tennis. The green balls provide a slower ball alongside a lower bounce than the normal yellow balls. It is discussed in this article how the green balls could lead to many different benefits, particularly related to wheelchair tennis players' including improved performance, physiological, psychological and social effects.

Key words: Low compression balls, Green balls, Wheelchair tennis, Mobility.

Received: 10 January 2012.

Accepted: 11 June 2012.

Corresponding author: Suzie Dyrbus, International Tennis Federation..

Email: Suzie.dyrbus@itftennis.com

INTRODUCTION

The wind of change began to blow in the world of able-bodied tennis as a new rule came into effect this year which allows stage 1 green balls to be used as an optional ball to the yellow balls for competitive play (ITF 2011). Low compression balls were first introduced with the focus on children but as their popularity spread worldwide, the benefits for all ages were soon discovered. This poses the question to whether wheelchair tennis, which is one of the fastest growing Paralympic sports and becoming increasingly like the able-bodied game, should increase the use of green balls in competition.

Before one jumps to false conclusions that green balls are only for beginners and not relevant in the competitive sports world, many other sports already have similar examples. An analogy can be drawn from skiing, where modified balls are the tennis equivalent of blue, red and black pistes in skiing; no matter which slope you go down you are still skiing.

Many people even prefer going down a red slope to a black as they are not having to focus so much on the difficulty of the terrain which results in a positive effect on their skiing; they perform better and experience enhanced enjoyment. The same can be said for these balls which can have multiple effects on performance and skill acquisition alongside health and social benefits. There are three types of slower balls; red stage 3 (slow) to green stage 1 (faster) (ITF 2008). This article will examine some of these ball types and look at the potential for the introduction of green balls within wheelchair tennis for both adults and juniors.

SKILL PERFORMANCE AND ACQUISITION

Mobility and movement

The green balls are 25% slower than the yellow balls, providing the player with more time between shots and to move to the ball (ITF 2008). Tennis requires a high level of technical competence, and physiological challenge to the individual (Reid et al. 2007; Diaper and Goosey-Tolfrey 2009). However, movement is often considered one of the more important factors; poor movement results in poor positioning, timing and shot execution leading to a large number of errors and short rallies. The diagram below shows how these factors interlink. By increasing time for movement, players are more likely to have increased control as a result of an enhancement of the above factors (ITF 2008). One scientific study by Hammond & Smith (2006) noted that when using low compression balls rallies went on for longer and that there was a positive effect upon aspects of technique that are related to improving power of the shot.

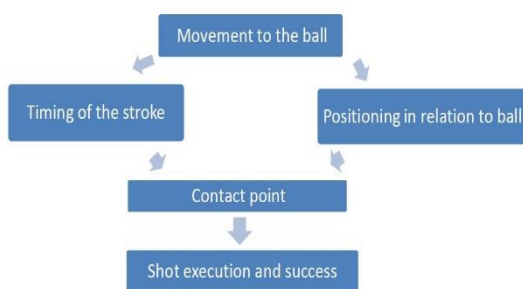


Figure 1. The importance of mobility upon performance in tennis.

In wheelchair tennis mobility is considered by some as even more important than movement in able-bodied tennis (Elderton, 2000). Dr. Moore, the current US National coach (cited in Elderton, 2000) even went so far as to claim that "mobility is the single most important aspect of wheelchair tennis". There is the added factor of wheelchair control to be considered. Some athletes may not be in day chairs so as well as reaction and movement aspects to master, there is also the control of the chair. By increasing time available to the player, a player's experience is less affected by their chair control and mobility and it enables them to develop these skills more progressively.

Contact point and hitting zone

It is not only the speed of the ball but the lower ball bounce which could be beneficial, as the green balls despite having a fairly similar bounce do finish at a slightly lower height. Figure 2 below displays the difference in average bounce height after the first bounce across all ball types. As in the diagram, an adult wheelchair tennis player evidently sits at a lower height than an able-bodied tennis player. For a wheelchair player, the height is more similar to that of an average able-bodied 10 year old. Therefore a lower bounce can result in increased success, as players are more likely to make contact in the ideal hitting zone and not hit so many balls at head height. Especially considering the increased popularity in top spin, it could almost be argued that green balls may have a more important place within wheelchair tennis than the able-bodied sport by increasing the time players have and the resultant lower bounce.

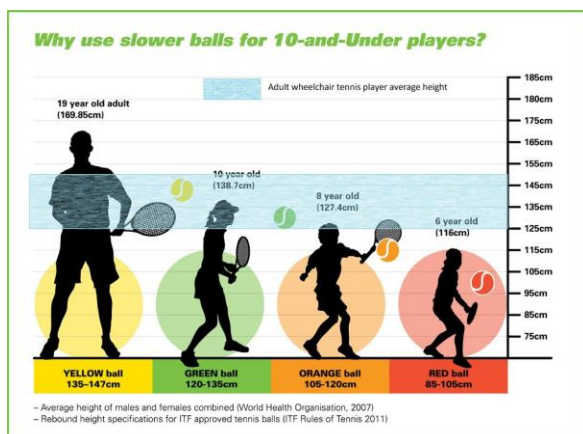


Figure 2. Slower balls for wheelchair tennis. Source: ITF (2008).

HEALTH BENEFITS

Linked to tennis are numerous health benefits including increased cardio respiratory fitness, muscle strength, flexibility and a reduced risk of heart disease (Pluim et al. 2007). Longer rallies and increased control will augment the time that people actually spend playing tennis, increasing the exercise intensity and thus the health benefits. Increased duration of exercise has

also been shown to lead to increased production of energy from fat stores, reducing the risk of obesity (Pluim et al. 2007). In wheelchair tennis these health benefits can improve a player's functioning in daily activities such as transferring in and out of a chair, respiratory function and quality of life (Janssen et al. 1994 cited in Diaper and Tolfrey 2009). The green balls could enhance these effects and thus could be linked to considerably improving a player's quality of life.

OTHER BENEFITS

Alongside the physiological benefits associated with the use of slower balls, other psychological and social implications are arguable connected. It already has been discussed that slower balls means more control, which in turn results in longer rallies and greater success. Hand in hand with success comes enjoyment, increased self-efficacy and performance achievement. These feelings then can translate over to life outside of tennis (Hutzer & Bar-Eli 1993). From a tennis perspective numerous studies have shown that enjoyment is one of the, if not the key influential factor on a person remaining involved in sport. By enhancing the experience of a wheelchair tennis player through the use of green balls, we are augmenting the likelihood of them remaining within the sport (Scanlan et al. 1993).

WHY GO GREEN?

We have just seen that there is the potential to reap huge benefits from the use of the green balls. But why use the green and not the red or the orange? The red and orange ball is arguably too different for competitive play to act as a replacement for the yellow balls. In wheelchair tennis, due to the second bounce rule, the red and orange balls are not always practical due to the dying second bounce (particularly with red) which means that the ball is often too low- resulting in a low success rate and increasing difficulty. The Green balls therefore offer an excellent balance, as they are more similar to the yellow balls in speed and in bounce characteristics and pose no real significant negative changes in the overall playing experience.

The change in balls has the potential to impact thousands of players around the world in a variety of different capacities along with improving people's tennis experience, helping to grow the sport. There is limited research in both the able-bodied tennis and even less in wheelchair tennis with many limitations in the current research to date. But it is a question that should be investigated as this has the power to transform wheelchair tennis. Why not introduce green balls in your next coaching session and observe the benefits of the green ball for your players.

REFERENCES

- Diaper N.J. & Goosey-Tolfrey V.L. A physiological case study of a paralympic wheelchair tennis player: reflective practise. *Journal of Sports Science and Medicine*. 2009; 8: 300-307
- Elderton W. wheelchair tennis mobility. *Wheelchair tennis coaches review*. 2000. Issue 1
- Hammond J. & Smith C. Low compression tennis balls and skill development. *Journal of Sports Science and Medicine*. 2006; 5: 575-581.
- Hutzer Y. & Bar-Eli M. Psychological benefits of sports for disabled people: a review. *Scandinavian Journal of Medicine & Science in Sports*. 1993; 3,4: 217 - 228. <https://doi.org/10.1111/j.1600-0838.1993.tb00386.x>
- ITF(2008). PlayandStay. Available from <http://www.tennisplayandstay.com/site/>. Last accessed on 06 December 2011.
- ITF (2011). ITF approves trial of slower ball in competition. This week. Issue 49, 3. Available from <http://cms.itftennis.com/media/82394/82394.pdf> Last accessed on 06 December 2011.
- Pluim B.M., Staal J.B., Marks B.L., Miller S. & Miley D. Health Benefits of Tennis. *British Journal of Sports Medicine*. 2007; 41: 760 - 768. <https://doi.org/10.1136/bjism.2006.034967>
- Reid M., Duffield R., Dawson B., Baker J. & Crespo M. Quantification of the physiological and performance characteristics of on-court tennis drills. *British Journal of Sports Medicine*. 2007; 42; 146-151. <https://doi.org/10.1136/bjism.2007.036426>
- Scanlan T.K., Simons J.P., Carpenter P.J., Schmidt G.W. & Keeler B. The Sport Commitment Model: Measurement development for the youth-sport domain. *Journal of Sport & Exercise Psychology*. 1993; 15; 6-38. <https://doi.org/10.1123/jsep.15.1.16>

RECOMMENDED ITF TENNIS ACADEMY CONTENT (CLICK BELOW)



Copyright (c) 2012 Suzie Dyrbus.



This text is under a [Creative Commons BY 4.0 license](#)

You are free to Share - copy and redistribute the material in any medium or format - and Adapt the content - remix, transform, and build upon the material for any purpose, even commercially under the following terms:

Attribution: You must give appropriate credit, provide a link to the license, and indicate if changes were made. You may do so in any reasonable manner, but not in any way that suggests the licensor endorses you or your use.

[CC BY 4.0 license terms summary](#) [CC BY 4.0 license terms](#)