Why slower balls and smaller courts for 10 and under players?

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ABSTRACT

Tennis 10s and its supporters promote that slower balls and smaller court sizes help children to play with more success. This article aims to present the rationale behind this argument, to look specifically at how using slower balls and smaller courts is beneficial for 10 and under players.

Key words: Slower balls, Smaller courts, Modified equipment.

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WHY SLOWER BALLS?

Slower balls give players more time and control making it easier for them to rally and to develop advanced tactics and technique. An optimal striking zone on most groundstrokes is between waist and shoulder height; the slower balls ensure the ball will most often land within this strike zone for young children, whereas the traditional yellow balls frequently bounce above their head.

Table 1 shows the average height of boys and girls by age, according to the World Health Organisation, whilst Table 2 shows the ITF approval specifications for the Red (Stage 3), Orange (Stage 2), Green (Stage 1), and traditional yellow balls. The rebound heights of these balls can be compared with the average child heights in Table 1, showing that:

- The yellow ball rebound height (135-147cm) is above the average height of children age 5-9 (110-133cm), whilst at age 10 (138.7cm), most balls in the range will rebound either in line with or above the player’s head
- Red ball rebound height (85-105cm) is best suited for children aged 5-8 (110-127.4cm)
- Orange ball rebound height (110-115cm) is best suited for children aged 8-10 (127.4-138.7cm)
- Green ball rebound height (118-132cm) is best suited for children aged 9 and especially aged 10 (133-138.7cm)

Table 1. Average height of males and females combined (World Health Organisation, 2007)

Table 2. ITF rebound height specifications for approved balls

*Average height is for end of month 1 in each year
The consequences of the ball rebounding above the player's head are that, most shots are either:

1. Played very early, way inside the court with little control (players generally move away from this tactic due to the difficulty to control the ball and the inability to recover a good court position), or

2. Played deep behind the baseline as the player waits for the ball to drop, then returns it very high (moon ball) over the net to force their opponent to contact the ball very high, or push them far back behind the baseline, or

3. Contacted above head height with an extreme grip, increasing the risk of injury by placing excessive load on the arm (Kibler, 2002), and limiting the ability to control shot direction or be offensive

Apart from the bounce height, the velocity of the ball through the air and at rebound is slower. The slower balls are pressureless and lower in mass which causes this reduction in velocity, and the Red balls (stage 3) are also larger than the standard tennis ball, so move slower through the air. This reduced velocity gives children with basic or developing sensori-motor skills, more time and control so that they can rally successfully, by perceiving, moving to, positioning around, and striking the ball.

In summary, using the slower balls with young children makes it much easier to rally, allows children to implement advanced tactics and technique, and reduces the risk of injury from extreme grips.

Table 3 shows the court sizes, and the % of those dimensions compared to a traditional (full size) court. When these % ratios are compared to children's height as a % of adult height, we can observe the following:

**Red Court**

Red court width is 66% of traditional court, whilst a 5, 6, 7 and 8 year old are 64.8-75% of adult height, this shows that the court size % is very suitable for this age group. The red court length is only 46.3% of a traditional court, although this is a lower %, we must consider that children in this age group have limited depth perception as their vision is still developing (Haywood & Getchell, 2005), meaning the shorter court makes it easier for them to judge the ball and to position around the ball, even if they judge it late.

**Orange Court**

Orange court width is 78.9% and length is 75.7% of a traditional court. Orange courts are commonly used by players aged 8-9, who are on average 75-78.3% of adult height. These percentages show that the Orange court is almost perfectly scaled to the size of the player and should create virtually
identical footwork patterns, and tactical possibilities as an adult would have on the traditional court. Of course by moving these shorter children onto the full court, we can expect that their number of steps would be 25% greater, meaning footwork and tactical patterns become unrealistic when compared with the adult game.

In summary, smaller courts are scaled down to be representative of the game an adult plays on the traditional sized court. The only exception is the length of the Red court which is smaller to assist young children with limited depth perception (Haywood & Getchell, 2005).

Why not operate a system by height?

As this article has so far focused on height, many will ask why taller players should not progress sooner. In theory height is possibly a good way to progress children, however practically it is flawed for two reasons:

1. The practicality of moving children based on height would require some ‘official’ measurement, and the thoughts of ‘shoes on or off’, ‘height at entry or height at start of event’, and disputes from parents eying up players who look a cm too tall are ridiculous, but potentially real, dilemmas.

2. Success and improvement are crucial factors in retaining players in tennis, but so are socialising and belonging. Many children want to be where their friends are. We could say the same by age but anecdotal experience indicates that players have more ‘same school year group’ friends than ‘older/younger school year group’ friends.

Age is by no means the perfect method of categorising players but it is probably the best, practical method available.

SUMMARY

Many argue that their children can play with the yellow ball and full court, however, as discussed, the tactics are most often limited to moon balls played deep behind the baseline, little redirection of the ball or offensive play occurs, and almost no approach and net play. The variety and intensity of play that can be attained by children using slower balls and smaller courts is of a considerably higher level to that which can be achieved on the big court with a high bouncing ball.

Tennis must be adapted to the size and motor level of the players, and should not be seen in the 10 and under age group as equipment for beginners or lower ability players but based on the size of the player, similar to little league baseball and mini soccer. Finally, shorter rackets are absolutely fundamental for smaller players (Crespo & Reid, 2009), however that is another article!

REFERENCES


