



Temporal structure in tennis competition

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ABSTRACT

This article intends to review the temporal structure of competition tennis. It is indispensable for the coach to know the temporal aspects because they will help them to select the most appropriate type of training for their athletes depending on the characteristics of the competition.

Key words: rest time, playing time, analysis

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INTRODUCTION

The analysis of the competition intends to record and analyse the behaviours and actions of athletes in real match situations (O'Donoghue, Girad, & Reid, 2013). Tennis is the racket sport that most frequently applied performance of competition analysis (O'Donoghue, & Ingram, 2001), defining a number of variables or performance indicators that contribute to success in competition (Hughes, & Franks, 2004), as shown in Figure 1:



Figure 1. Tennis performance indicators.

Among all these indicators, it is key for the coach to know the temporal aspects which will help him to determine the most appropriate training types for their athletes (Gutiérrez, 2010), and to regulate the workloads for physical conditioning of the tennis player in terms of volume, intensity or duration (Sánchez-Alcaraz, 2013).

Temporal structure of tennis

There is a lot of research about the temporal structure of competition tennis, stating that there are different variables that impact on the temporal aspects of tennis, such as gender, level of players, age, modality of the game (singles, doubles, wheelchair tennis, etc.), number of sets to be played or the surface of the court (Sánchez-Pay, Torres, & Sanz, 2014). In order to carry out this research, a thorough revision of the bibliography was made, on the Web of Science and Dialnet database using the following descriptive terms: "tennis, temporary aspects, notational analysis, and performance analysis".

Total and real time of play

The total duration of a tennis match varies between 1 and 5 hours (Torres, Sánchez-Pay, & Moya, 2011), depending on the number of sets (3 or 5) to be played and on the type of competition (Cabello, & Torres, 2004). In the case of best of three matches, the average duration is between 60 and 90 minutes, both for adults and junior tennis players (Bergeron et al., 1991; Kovacs, 2007; Torres, Cabello, & Carrasco, 2004; Torres, Sánchez-Pay, Bazaco, & Moya, 2011), though these times can be longer when playing on clay (Cabello, & Torres, 2004). In the case of best of five matches, the TT is longer and increases to 3-4 hours of play (Schonborn, 1989; Professional Tennis Registry, 2002) or even 5 hours in top competition matches (Christmass, Richmond, Cable, Arthur, & Hartman, 1998; Hornery, Farrow, Mújika, & Young, 2007).

Yet, the percentage of real playing time for a tennis match ranges between 16% and 29% of the total time (Elliot, Dawson, & Pyke, 1985; Reilly, & Palmer, 1995; Christmass et al., 1998; Smekal et al., 2001; Torres et al., 2011). These figures are lower in the case of professional players and on clay courts, around 16-18% (Smekal et al., 2001), while on a fast court, it will range between 23-26% (Christmass et al., 1998; Elliot et al., 1985). Depending on the age of the players, research shows higher values of RT of play for junior players, around 30% (Torres, 2004). Finally, when comparing sex, no differences have been recorded between men and women in adult competition in the real time of play percentage in the most recent studies made (Fernández, Fernández, & Terrados, 2007; Fernández, Sanz, Fernández, & Méndez, 2008; Méndez, Fernández, Fernández, & Terrados, 2007).

Performance time and pause

Intermittences in tennis are very strongly marked by the rules which allow a resting time of 20 seconds between points, so in relation to performance time during the point and pauses or resting time, there is a variation between 1:2 – 1:3 (Christmass et al., 1998; Elliot et al., 1985; O'Donoghue, & Ingram, 2001; Reilly y Palmer, 1995), although veteran players have shown lower values (Fernández et al., 2009). As to the duration of the points, the studies analysed have shown an average of play of 6-10 seconds (Fernández, Méndez, Fernández, & Terrados, 2007; Fernández, Sanz, Fernández, & Méndez, 2008; Hornery et al., 2007; Kovacs, 2007; Morante, & Brotherhood, 2005). Yet, the duration of a point in tennis varies, mainly depending on the type of the playing surface, and the sex of the players. So, a study made by the Professional Tennis Registry (2002) among professional players, the duration of the point in men matches was confirmed 2.3 seconds on grass, 5.7 on hard court and 7.2

seconds on clay and for women, it was 4.9, 6.1 and 9.3, respectively.

On the other hand, apparently the duration of the points has increased over the last years in the four Grand Slam tournaments in the male category, and has decreased in the female category, so the differences between the different types of surfaces are smaller (Fernández, Sanz, & Méndez, 2012). In this sense, two studies made with women competition players showed similar duration of points, both on clay (7.2 seconds average) and on fast courts (8.2 seconds average) (König et al., 2001). their practice sets and how they connect to improved match play. Finally, in junior players, the average duration time of points is higher (approximately 9 secs.), both on fast and slow surfaces, it clearly shows the importance of setting the level, the age and the surface when defining these parameters (Torres, 2004).

Author/s	Total duration (min)	Playing time (%)	Resting time (%)	PT & RT duration	Point duration
Weber et al. (1978)	.....	16.4	83.6	.....	5.08
Elliot et al. (1985)	60	26.5	73.5	1: 2.9	10 ± 1.6
Reilly y Palmer (1995)	42.7	27.9 ± 3.9	72	1: 3.1	5.3 ± 1
Christmass et al. (1998)	90	23.3 ± 1.4	.....	1: 1.7	10.2 ± 3.0
Smekal et al. (2001)	.....	19.12 ± 12.1	70	.....	6.4 ± 4.1
RPT (2002)	120 - 180	.....	.....	.....	2.3 - 7.2 in males & 4.9 a 9.3 in females
Morante & Brotherhood (2005)	65 to-152	17.5 - 21.1	78.9 - 82.5	.....	5.2 - 7.0
Hornery et al. (2007)	79 - 119	14.93 to 28.57	71.42 - 85.06	.....	6.7 - 7.5
Fernández et al. (2007)	.....	21.9	78.1	.....	8.2 ± 5.2
Méndez et al. (2007)	.....	21.5	78.5	.....	7.5 ± 7.3
Fernández et al. (2008)	.....	21.6	78.4	1: 2.1	7.2 ± 5.2
Torres, Cabello et al. (2011)	105.0 ± 20.0	31.5 ± 5.83	73.5 ± 8.5	1: 2.7	9.08 ± 6.0
Torres et al. (2011)	69.62 ± 8.01	22.46	80.63	.....	5.5 ± 9.7

Table 1. Most relevant studies on tennis temporal aspects.

PRACTICAL APPLICATIONS FOR COACHES

According to Gutiérrez (2010), the identification of the parameters that make up the sport structure provides relevant information at the physiological level (it determines the effort made by the athlete during practice), technical and tactical (it determines technical and tactical actions over time to set training sessions that fit into the sport reality as much as possible, and determines execution times) psychological (it controls the subjective perception of players about the real time of play), etc.

CONCLUSION

Research has shown that, in general, the duration of a tennis match is approximately 60-90 minutes out of which the player is hitting the ball between 20-30% of the time. The duration of the point varies between 6 and 10 seconds, with a 20 second resting time between points. However, it has been proved that there are different variables that impact on the temporal aspects of tennis, such as gender, level of the players, age, modality of the game (singles, doubles, wheelchair tennis, etc.),

number of sets to be played, or surface of the court, and which must be considered when planning training sessions.

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