

**Who are the best tennis players?**  
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## **1. Introduction**

The Rod Laver and Margaret Court arenas at the Melbourne Park tennis centre are named after two great Australian players. Does this imply that these two are the greatest Australian male and female players of all-time? And how do these players compare with the best of all-time throughout the world? Furthermore, if Roger Federer and Rod Laver competed in the same era, who would be the better player?

A number of criteria can be used to determine a great player such as the number of matches won, tournaments won, grand slam matches won or grand slam tournaments won. Alternatively, the percentage of matches won, tournaments won, grand slam matches won or grand slam tournaments won could be used as criteria to determine a great player. Player ratings and rankings also provide a way of measuring performance. The ATP Rankings, as defined by the Association of Tennis Professionals (ATP) in 1972, are the objective merit-based method used for determining qualification for entry and seeding in ATP tournaments for both singles and doubles. A player's ATP Ranking is based on total points obtained in finishing positions in ATP tournaments and remains in the system for 52 consecutive weeks. A similar system is used for the Women's Tennis Association (WTA) which was formed in 1973. Bedford and Clarke (2000) use an exponential smoothing method based on margin of victory in terms of sets and games won for rating players. The results suggest the exponential method performs as well as the more complicated ATP rating method for both match prediction and tournament seeding.

According to Wikipedia the four grand slam tennis tournaments are the most important tennis events of the year in terms of world ranking points, tradition, prize-money awarded, and public attention. The open era of tennis began in 1968 when the grand slam tournaments agreed to allow professional players to compete. Wimbledon, the first of the grand slams, began in 1877, followed by the US Open (1881), the French Open (1891), and the Australian Open (1905). Beginning in 1905 and continuing to the present day, all four grand slams have been played yearly, with the exception of the 1st and 2nd world wars and 1986 for the Australian Open.

This paper will investigate the best male and female singles and doubles players by using the criteria of the number of grand slam tournament wins. The different court surfaces currently used at each grand slam event will also be considered in the analysis.

## **2. Analysis**

### **2.1 Singles matches**

Table 1 represents the leading singles grand slam winners for men and women. Roger Federer leads the men's grand slam winners and Margaret Court the women's. Interestingly, the Australian player Roy Emerson won more grand slams than Laver. This could imply that Emerson was a better player than Laver. Winning all four grand slams in the one year (a "grand slam") has been achieved by only four female players and two male players. Laver is the only

player in history to win two “grand slams”. Many people argue that this feat makes Laver the best male player of all-time, even though Roy Emerson, Pete Sampras and Federer hold more grand slam tournament wins overall.

An understanding of the history of tennis is required when interpreting data across different eras. Before the open era in 1968, professional players were unable to compete in grand slam events. Laver started competing in grand slam events on the senior amateur tour in 1956, before turning professional in 1963. Laver returned to competing in grand slam events in 1968 until retirement in 1977. Laver won his first grand slam singles title in 1960, and from 1970 Laver cut back his tournament schedule, due to contract arrangements, and partly due to back and knee injuries.

*The question of interest is how many grand slam events would Laver have won in the five years of turning professional between 1963 and 1968?*

Laver was at the peak of his game from his first grand slam in 1960, followed by 1961 and 1962, and then returning to grand slam tennis as a professional in 1969 and 1970 – for a total of five years. These five years equate to an average of  $11/5 = 2.2$  grand slam wins per year. Assuming Laver would have won  $5 \times 2.2 = 11$  grand slam events in the five years of turning professional before the open era; Laver would have won a total of  $11+11 = 22$  grand slams events. Therefore, it could be argued that Laver was a better singles player than Emerson and that Federer would need to win at least six more grand slams to be as good as or better than Laver in singles.

On the women’s side of the ledger the competition is a little more one-sided. Margaret Court’s record of 24 grand slam tournament wins could possibly be unbeatable by any future player. Steffi Graf is the only player to have obtained a “golden grand slam” by winning all four grand slams and an Olympics Games gold medal in the one year. Her dominance as a player in the late ‘80s and the ‘90s still couldn’t match Margaret Court’s grand slam record. Should Margaret Court be recognised as the greatest female tennis player, similar to the recognition given to Sir Donald Bradman in cricket?

Men grand slam winners		Women grand slam winners	
Number of wins	Player	Number of wins	Player
16	Roger Federer	24	Margaret Court
14	Pete Sampras	22	Steffi Graf
12	Roy Emerson	19	Helen Wills Moody
11	Rod Laver	18	Martina Navratilova
11	Bjorn Borg	18	Chris Evert
10	Bill Tilden	13	Serena Williams
10	Rafael Nadal	12	Billie Jean King
8	Ken Rosewall	9	Monica Seles
8	Jimmy Connors	9	Maureen Connolly
8	Ivan Lendl	8	Suzanne Lenglen
8	Fred Perry	8	Molla Bjurstedt
8	Andre Agassi		

Table 1: Leading singles grand slam winners for men and women

All four grand slam events have been played on a grass surface. Wimbledon is the only grand slam event played on a grass court today and has always been played on a grass court surface. The French Open began in 1891 on a grass surface and remained on grass until 1928

when the surface was changed to clay. The US Open began in 1881 on a grass surface; until it was changed to clay from 1975-1977 and from 1978 has been played on a hard court surface. Finally, the Australian Open began in 1905 on a grass surface and remained on grass until 1988 when the surface was changed to a hard court. Players that perform well on grass usually don't perform well on clay and vice versa (Pollard and Barnett, 2010). Sampras was unable to win a French Open title which is played on clay and Federer only recently – in 2009 – won a French Open title. Both Sampras and Federer have both dominated on the grass courts at Wimbledon. To compare the greatness of players on grass and clay, grand slam titles at Wimbledon and at the French Open are used. Tables 2 and 3 give the results. Bjorn Borg and Rafael Nadal lead the men's French Open titles, and Chris Evert leads the women's French Open titles. William Renshaw and Sampras lead the men's Wimbledon titles, and Martina Navratilova leads the women's Wimbledon titles.

Men French Open winners		Women French Open winners	
Number of wins	Player	Number of wins	Player
6	Bjorn Borg	7	Chris Evert
6	Rafael Nadal	6	Steffi Graf
4	Henri Cochet	5	Margaret Court
3	Yvon Petra	4	Helen Wills Moody
3	Rene Lacoste	4	Justine Henin-Hardenne
3	Mats Wilander	3	Monica Seles
3	Ivan Lendl	3	Hilde Sperling
3	Gustavo Kuerten		

Table 2: Leading French Open singles winners for men and women

Men Wimbledon winners		Women Wimbledon winners	
Number of wins	Player	Number of wins	Player
7	William Renshaw	9	Martina Navratilova
7	Pete Sampras	8	Helen Wills Moody
6	Roger Federer	7	Steffii Graf
5	Laurie Doherty	6	Suzanne Lenglen
5	Bjorn Borg	6	Blanche Bingley Hillyard
4	Rod Laver	6	Billie Jean King
4	Reggie Doherty	5	Venus Williams
4	Anthony Wilding	4	Serena Williams

Table 3: Leading Wimbledon singles winners for men and women

## 2.2 Doubles matches

The US Open was the first of the grand slam men's doubles which began in 1881, followed by Wimbledon (1884), the Australian Open (1905), and the French Open (1925). The US Open was the first of the grand slam women's doubles which began in 1889, followed by Wimbledon (1913), the Australian Open (1922), and the French Open (1925).

Table 4 represents the leading grand slam doubles winners for men and women. John Newcombe has won the most grand slam men's doubles titles with a total of 17, followed by Roy Emerson and Todd Woodbridge with 16. Martina Navratilova has won the most grand slam women's doubles titles with a total of 31. When combining both singles and doubles grand slam titles, Roy Emerson and Martina Navratilova have won the most with 28 and 49

titles respectively. One of the problems with observing doubles titles is that great singles players nowadays tend not to play in grand slam doubles events, to conserve energy for the main singles draw.

Men grand slam doubles winners		Women grand slam doubles winners	
Number of wins	Player	Number of wins	Player
17	John Newcombe	31	Martina Navratilova
16	Roy Emerson	21	Louise Brough Clapp
16	Todd Woodbridge	21	Margaret Osborne duPont
14	Adrian Quist	21	Pam Shriver
13	John Bromwich	19	Margaret Court
13	Tony Roche	18	Natasha Zvereva
12	Mark Woodforde	17	Elizabeth Ryan
11	Neale Fraser	17	Gigi Fernandez

Table 4: Leading grand slam doubles winners for men and women

### 3. Results

Tables 5 and 6 summarise the above analysis to give an indication to the greatest tennis players. It is interesting to note that Australian tennis players currently hold the most number of female singles grand slam wins, most number of male doubles grand slam wins and the most number of male combined doubles and singles grand slam wins.

Most number of grand slam wins of all-time	Player
Men's singles	Roger Federer
Women's singles	Margaret Court
Men's singles at Wimbledon	William Renshaw Pete Sampras
Women's singles at Wimbledon	Martina Navratilova
Men's singles at the French Open	Bjorn Borg Rafael Nadal
Women's singles at the French Open	Chris Evert
Men's doubles	John Newcombe
Women's doubles	Martina Navratilova
Men's combined singles and doubles	Roy Emerson
Women's combined singles and doubles	Martina Navratilova

Table 5: Summary of leading grand slam winners of all-time

Most number of grand slam wins by an Australian	Player
Men's singles	Roy Emerson
Women's singles	Margaret Court
Men's doubles	John Newcombe
Women's doubles	Margaret Court
Men's combined singles and doubles	Roy Emerson
Women's combined singles and doubles	Margaret Court

Table 6: Summary of leading grand slam winners by an Australian

## **Conclusions**

This paper has identified great male and female singles and doubles tennis players, using the criteria of the number of grand slam tournament wins. The different court surfaces currently used at each grand slam event was also considered in the analysis. The results indicate that Rod Laver and Margaret Court are currently the best male and female singles players respectively and deservingly have arenas named after them at Melbourne Park. As of July 2008 the original Vodafone arena changed names to be called the Hisense arena for a six-year naming rights deal with Melbourne Park. If this arena is named after a player in the future, Roy Emerson and John Newcombe should be major contenders based on their grand slam tournament wins.

## **References**

Bedford AB and Clarke SR, A comparison of the ATP rating with a smoothing method for match prediction, In Proceedings of the 5M&CS, G. Cohen and T. Langtry eds. (2000), 43–51.

Pollard GN and Barnett T (2010). How the court surface is affecting serve-and-volley. *Journal of Medicine and Science in Tennis* 15(3), 26-28.