

# Manawatu Player Ratings

## How to player ratings work?

Basically, each player gains points for each win, and loses points for each loss, and the higher the rating of the opponent one beats the more points one gains, and the lower the rating of the opponent one loses to, the more points one loses. As such, the system we use in Manawatu is modelled on the national system but with a few additional tweaks. To be more detailed, the Table below gives the rating adjustments applied after each result.

Rating Difference	Higher-ranked player wins	Lower-ranked player wins	Comment
0 – 25	8	8	The winner's rating is increased by the amount in this table and the loser's rating decreased by that number subject to the 'discount factor' given below.
25 – 50	7	10	
50 – 100	5	12	
100 – 150	3	15	
150 – 200	2	20	
200 – 250	1	26	
over 250	0	32	

The 'discount factor' further makes allowance for the fact that a closer match (e.g. 3:2 win) should not be treated the same as a more decisive 3:0 win. To allow for that, different results are given specified discount factors:

Result	Discount factor
3:0	1.0
3:1	0.9
3:2	0.75

Result	Discount factor
4:0	1.0
4:1	0.9
4:2	0.75
4:3	0.5

The ratings are then adjusted after each match by taking the points from the first Table and multiplying by the discount factor from the second Table. So, for example, someone on 1000 points might have played four matches with the following results:

Opponent rating	Result	Rating points	Discount factor	Total
1000	1:3	-8	0.9	-7.2
960	2:3	-10	0.75	-7.5
1140	3:0	15	1	15
1300	1:3	0	0.9	0
	<b>Total</b>			<b>0.3</b>

The first match in this example was against an equally-ranked opponent, with eight points potentially changing hands, but that was reduced to only 7.2 points because the result was only 3:1. The second and third results were slight upsets as they went against the previous ratings, and the fourth match was an expected loss against a very highly rated opponent. Overall, the points gained and lost nearly cancelled out, for just a small gain of 0.3 points despite the player actually losing 3 out of 4 matches, but the matches were mainly against more highly-rated opponents.

Another way of looking at the ratings is given in the Table below. It gives the expected winning percentage against players with given rating differentials.

Rating Difference	Winning percentage	Rating Difference	Winning percentage
0 to 25	50.0%	0 to -25	50.0%
25 to 50	58.8%	-25 to -50	41.2%
50 to 100	70.6%	-50 to -100	29.4%
100 to 150	83.3%	-100 to -150	16.7%
150 to 200	90.9%	-150 to -200	9.1%
200 to 250	96.3%	- 200 to -250	3.7%
more than 250	100%	more than -250	0%

### **How do we get initial ratings?**

Once players have a rating, rating are further updated with each set of results as it comes in, but how do we get an initial rating? In essence, we need to find the rating with which a player's rating is steady for the set of results that are available. So, we might guess a player's rating and then add the points won and lost for all matches. If the resultant sum of extra rating points is greater than 0, then the initial guess would have been too low and a higher rating would be appropriate. The opposite applies, of course, if the sum of the ratings points is less than zero. This is repeated until we find the right rating for a new player - the rating at which the sum of all rating adjustments is 0.

### **And why are only some players included in the ratings list?**

For rating adjustments, we include all available matches from events organised by Table Tennis Manawatu. Obviously, the more results we have, the more accurate the player ratings become. A single result might just have been a fluke or a result against a particularly difficult or favourite opponent. So, we set a limit of players requiring at least 5 matches against opponents within the ratings window of +/- 250 points (or wins against someone rated more than 250 points above or a loss against someone more than 250 points below). Only the players currently listed have met that requirement.

Once players are in the system, they would not normally drop out of the system again, and their ratings will remain equally valid whether they play none, few or many more matches.

Of course, if players retire from playing or move away from Manawatu, their ratings would eventually be removed from the system. If players have an extended lay-off with injury or have a break from playing, their previous rating may also no longer be representative of their playing standard and it will make more sense to restart their rating without considering results before the lay-off.

### **The system is now operational**

One player's ratings gain will always be matched by another player's ratings loss. The system thus tries to be as fair and objectives as possible without any bonus points or penalties for playing few or many matches. Experience so far has indicated that the system gives a remarkably accurate assessment of players' standards. New players are entered into the system by calculating a starting rating from their initial matches until they reach the threshold of five qualifying matches. We remember the results of the matches those players have already played and combine them with the additional matches they will be playing until they reach the threshold of five qualifying matches against similarly-ranked opponents.

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