

WFFA

A Guide to the Freestyle Football World Rankings

The World Freestyle Football Association

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Introduction



The goal of the **World Freestyle Football Association** with the World Rankings (WR) was to create a comprehensive list of active, competitive freestylers, ranked accordingly based on their results.

Previously, there was a ranking system that awarded a certain number of points to freestylers who reached the top positions in different competitions. These points were awarded as a reward for achieving a particular result in designated competitions.

In order to continue improving Freestyle Football and structuring this sport, and after studying several models used in different sports (Football, Tennis, Chess), the WFFA decided to build a new points calculation model and use the foundation of an **Elo algorithm**.

The Elo Algorithm



The **Elo algorithm** is a ranking system used to evaluate the relative performance of players in one-on-one duels.

The main idea of said algorithm is to give each freestyler a rating based on their past results against other freestylers. This rating then helps to predict the chances of winning future battles and adjusts the rating based on the results of each new battle.

Here is the detailed process:

1. Pre-battle evaluation

The algorithm compares the ELO scores of the two athletes to predict the chances of victory.

- If a freestyler has a much higher score than their opponent, the algorithm estimates that they have a strong chance of winning.
- If both freestylers have similar scores, the chances of victory are roughly balanced.

2. Calculation of expected outcome

For each battle, the algorithm calculates the "expected result." For example, if freestyler A (2500 points) competes against freestyler B (2100 points), freestyler A may have a 90% chance of winning, while freestyler B would have a 10% chance.

3. Post-battle adjustment

After the battle, the algorithm adjusts the scores based on the actual result:

- If the favourite wins, their score increases only slightly, since it was an expected result.
- If the underdog wins, their score increases more significantly because they exceeded the expectations. The favourite, in turn, will lose more points than they would if they lost to a freestyler of the same level.

4. Update equation

The score change is based on this equation:

$$E_{n+1} = E_n + K[R - f(D)]$$

In which:

- **E_{n+1}** is the new ELO score
- **E_n** is the current ELO score
- **K** is a factor that determines how quickly scores evolve. Beginner freestylers will have a higher K (their scores change more quickly), while experienced freestylers will have a lower K (their scores change more slowly).
- **R** is the Result: 1 for a win, 0 for a loss
- **f(D)** is the Expected Result, that is, the estimated probability of winning based on the scores of the two freestylers.

Therefore:

$$f(D) = \frac{1}{1 + 10^{-\frac{D}{400}}}$$

- **D** is then the difference between the Elo scores of athlete A and Athlete B, with a maximum of 400. For example, if Score A is 2100 and Score B is 1900, then D=200; however, if Score A is 2300 and Score B is 1700, then D=400 (and not 600)

5. The K factor

For Freestyle Football, the coefficient **K**, which determines how quickly scores evolve, is broken down as follows:

- **C: Type of competition**
 - National (0.7)
 - Continental (0.8)
 - Open (0.9)
 - World (1)

- **S: Competition difficulty**
 - Low (0.7)
 - Medium (0.8)
 - Strong (0.9)
 - International (1)
 - Division 2 (0.5)
 - Next Gen (0.3)

- **L: Level of the freestyler**
 - New, with less than 10 battles (40)
 - Established, with more than 10 battles but less than 2400 points (20)
 - Elite, with more than 2400 points (10)

- **T: Type of battle**
 - B: 1 vs 1 Battle (1)
 - C: Circle (0.3)

Thus, The coefficient $K = C \times S \times L \times T$ and can range from 0.63 to 40.
Also, those coefficients may evolve in the future.

Special Feature for Circles



The specificity of Freestyle Football is the Circle stages, where 3 or 4 freestylers face each other. In this case, if the Circle result is as follows:

- **1st:** Athlete A
- **2nd:** Athlete B
- **3rd:** Athlete C
- **4th:** Athlete D

We translate it this way:

- Athlete A wins against Athlete B
- Athlete A wins against Athlete C
- Athlete A wins against Athlete D
- Athlete B wins against Athlete C
- Athlete B wins against Athlete D
- Athlete C wins against Athlete D

And as previously stated, we use the C battle type to reduce the weight of the circle phase but still allow for score adjustment.

Examples



To use as an example, let us imagine a battle at the Super Ball Top 32 between two freestylers: Athlete A and Athlete B. Here are their points before said battle:

- Athlete A: **2477 points**
- Athlete B: **2390 points**

Given that, as said, this battle happens at the Top 32 at Super Ball, the K coefficient would be as follows:

- C (Type of Competition): **World (1)**
- S (Difficulty of the Competition): **International (1)**
- L (Level of the Freestyler): **Athlete A: 10 / Athlete B: 20**
- T (Type of Battle): **Battle 1 vs 1 (1)**

The Pre-Battle Evaluation would be the following:

- Athlete A has a **62%** chance of winning
- Athlete B has a **38%** chance of winning

Hence, the calculations would be like this:

- If **Athlete A** wins:
 - New points for Athlete A = $2477 + 10 \times (1 - 0,62) = 2480.8 (+3.8)$
 - New points for Athlete B = $2390 + 20 \times (0 - 0,38) = 2382.4 (-7.6)$

- If **Athlete B** wins:
 - New points for Athlete A = $2477 + 10 \times (0 - 0,62) = 2470.8$ (-6.2)
 - New points for Athlete B = $2390 + 20 \times (1 - 0,38) = 2402.4$ (+12.4)

What Happens with Newcomers to the World Rankings?



For a new athlete entering a competition, there are two possibilities:

- **Case 1: The freestyler was already in the preliminary ranking**
The person joins the World Ranking with their preliminary ranking points and keeps their battle history.
- **Case 2: The freestyler is entirely new and has no preliminary ranking**
The person joins the World Ranking with the average points of the current ranking; as they battle, the K coefficient will quickly adjust their ranking. If they are better than the average, they will move upwards quickly; if they are worse than the average, they will drop.

It's important to note that this last case, the entrance into the World Rankings with an average number of points, is necessary for the stability of the system, and explains why some newcomers to the Rankings might have more points than more established freestylers. As they battle, though, their position in the Rankings will be adjusted in a process that may take some time.

A Summary of the Possibilities



This section quickly explains the basic cases that the World Rankings offer to participating freestylers:

- **How to gain points:**
 - Win 1 vs 1 battles
 - Have a good ranking during group phases
- **How to lose points:**
 - Lose 1 vs 1 battles
 - Have a poor ranking during group phases
- **How to climb in the ranking:**
 - Gain points and surpass the athletes ranked above
 - The people ranked above lose points
- **How to drop in the ranking:**
 - People behind gain points and surpass the athlete
 - New people join the World Ranking in the average position and impact the athlete's rank

Advantages of the System



The main advantage of the Elo algorithm is that it **adapts dynamically**. Unlike a simple points system, Elo considers the relative strength of opponents: it is therefore fairer and more accurate, especially in environments where freestylers can face each other at different stages of their careers or under various circumstances.

- **Fairness:** A freestyler who consistently beats weaker opponents won't gain many points, while a freestyler who beats stronger opponents will be rewarded.
- **Predictability:** The Elo ranking also better predicts future results by considering performance history.

The Elo algorithm is a powerful tool for ranking freestylers fairly according to their actual performance. It is based on a simple principle: adjust scores based on expectations and results. The more a freestyler exceeds expectations, the faster they progress in the Rankings. It is widely used because it maintains dynamic and accurate rankings, both in traditional games like chess and in modern competitions like video games or tennis.

The Elo algorithm is **fair, adaptable**, and based on simple but effective mathematical **probabilities**.

It is important to note that the initial, Preliminary Ranking used to launch the World Rankings was built based on the results of 2020, 2021, and 2022. Therefore, it will take time to adjust the World Ranking based on current results.

It's also worth mentioning that the algorithm is still **evolving**. For example, the WFFA is currently working on adjusting the position of freestylers who do not participate in competitions for a certain amount of time. All suggestions from the community are welcome!

Conclusion



Finally, we ask all freestylers to bear in mind that the World Rankings are based on **mathematics**, and sometimes maths can be cruel and not reflect the energy and effort athletes put into a competition. The algorithm only looks at results: it's either a win or a loss, with no grey areas.

The World Ranking, therefore, does not reward hard training of six hours a day, nor participating in international competitions and facing the best. It is just a compilation of past results.

The Ranking of a freestyler is not who the freestyler is.

This is extremely important: no athlete should ever feel better or worse for being in a position or another in the World Rankings. They are not the truth; just a screenshot of the competitive landscape at a particular moment in time. As an example, please take Rafael Nadal's ATP ranking as of September 2024: he's just 154th in the world, which of course is not representative of his extraordinary level and career.

Disclaimer

The **World Rankings** program has been developed by the **World Freestyle Football Association**, a non-profit global federation registered in Canada under company number 1041184-1. For more information, please visit www.worldfreestylefootball.org or send an email to the corresponding team at world.rankings@worldfreestylefootball.org.