



# WFTDA Rankings Policy and Algorithm

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## Overview

Teams are ranked by region. Rankings are ordered by the relative strength of each team. The ratio between the ranking points of two teams indicates the predicted score ratio of a game played by those two teams.

Rankings are calculated by taking into account all games that have been played in a season by all teams at once. It uses a statistical method called “linear regression” to find the rankings for each team that best explain game results.

- Rankings are regional - the calculations are done separately for each region.
  - Only games between teams in the same region count for regional rankings.
  - All games count for the *Geographically Unrestricted Region (GUR)*.
  - Ranking points and rankings should not be compared from one region to another.
- Regional rankings are seasonal - only games played within a rankings season count towards a team’s ranking for that season.
  - A new rankings season starts on July 1st of every even-numbered year (2024, 2026, ...).
  - Ranking seasons do not overlap.
- Rankings are anchored in the previous season. A team’s final ranking from the previous season is used as a seed for the next season. It will affect their ranking until they have played 5 close games.
- GUR rankings are calculated from all games played within the prior two years (a rolling window).
- WFTDA publishes official rankings at the first of each month based on games played until the end of the previous month.
  - The rankings published on the first day of a new season are considered end-of-season rankings for the previous season.
  - Additional rankings, including live rankings, may be published.

- Teams that newly enter a region will have to play a game against an already ranked team in their first month of playing.
- In order to be eligible for Regional Championships, a team will have to play at least 5 close games as defined below).

## Fair Play Principle

The rankings system described in this document is based on an assumption of faithful and honest gameplay, in which both teams are trying to get the best result possible, and the only intentional determinant of rank is the strength of the teams. Deliberate attempts to alter rankings directly in a way that does not reflect the true strength of the teams is considered deceptive and could be a violation of the WFTDA Code of Conduct.

This not only includes a team attempting to boost their strength through unsporting means (such as rostering “guest skaters” to get into Regional Championships, who will not be skating with the team during Regional Championships), but also attempts to lower their own ranking, or boost an opponent’s, by intentionally holding back<sup>1</sup>. It can also include attempts to get or maintain an inaccurate ranking by being overly picky with which games a team is willing to sanction.

## Rankings and Championship Eligibility

- Only Teams entered for a region by a WFTDA Member league are eligible to be included in WFTDA rankings.
- A team can be entered in at most one geographically defined region at a time.
- If a team switches from their original region to a new region, they start out as an unranked team with a game count of zero.
  - a. A team’s “original region” is the region in which they played their last game during the prior season. For a team that did not participate in the prior season, their original region is the region in which they played their first sanctioned game in the current season.
  - b. If a team later switches back to their original region, they will pick up where they left off. Games played in the other region will not count towards their rank or towards their game count.

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<sup>1</sup> Easing off in a game that has gone well beyond a 4:1 score ratio does not affect rankings much and is thus never considered a violation of this principle. Easing off because skaters are tired or at risk of injury is not an attempt to lower a team’s ranking and thus is not considered a violation of this principle.

- c. A team may only switch to a new region once per rankings season and switch back to the original region once. After that, no more region changes are allowed in that season.
- If, after playing a game, one of the teams leaves the region, the game is still included in the rankings calculation.
- A team is included in regional rankings if it has played at least one sanctioned game in the region in the prior or current season.
  - a. In end-of-season rankings teams are only included if they played a game in that season.
- A team is included in GUR rankings if it has played at least one game against a team from a different region within two years of the rankings.
- In order to be eligible for Regional Championships, a team has to have played at least 5 close games in the current season in the region. A game is considered “close” if it has ANY of the following qualities:
  - a. The actual score ratio of the game is between<sup>2</sup> 0.25 and 4, or
  - b. The predicted score ratio of the game, at the time of the game, is between<sup>2</sup> 0.25 and 4, or
  - c. The predicted score ratio of the game, at the time of the sanctioning application, is between<sup>2</sup> 0.25 and 4, or
  - d. The difference of the teams’ ranks, at the time of the sanctioning application, is less than<sup>3</sup> 15.
- Teams that can not reasonably play 5 close games due to circumstances beyond their control can apply for an exemption from the requirement.
  - a. Such an application must include a detailed explanation why meeting the minimum was not possible.
  - b. Teams are expected to play as many close games as they can.
  - c. Applications must be submitted before the off-season prior to the qualification cutoff. Late submissions can be accepted if the need for an exemption only arises after the deadline (e.g. due to a cancellation).

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<sup>2</sup> A ratio of exactly 0.25 or 4 is considered “close.”

<sup>3</sup> A difference of exactly 15 ranks (e.g. #1 and #16) is NOT considered “close.”

- WFTDA may reduce the qualification requirements for a region if upholding the original requirement would be detrimental for the region in general (e.g. if the spread of teams combined with regional economic constraints make it hard to get sanctioned games arranged within a reasonable budget).

## Calculating Rankings

[\(Click this link for a more accessible detailed explanation of the algorithm.\)](#)

Rankings are calculated using a weighted least squares fit over the games, set up as follows.

- For each team T there is a dependent variable  $\beta_T$  representing the natural logarithm of the team's ranking points.
- Each game G is represented by an observation  $y_G = \sum_T x_{GT} \beta_T$ , where  $y_G = \ln\left(\frac{\text{Team 1 points}}{\text{Team 2 points}}\right)$  and  $x_{GT}$  is 1 if T is Team 1 for the game, -1 if T is Team 2 for the game, and 0 for any other team.
  - The weight of G is 1 if G's score ratio is between 0.25 and 4. Otherwise it is  $3^{\frac{4 - \text{score ratio}}{2}}$ , capped at a minimum of  $\frac{1}{1,000,000}$ .
- For each team T that is ranked in the end of season rankings for the previous season, a virtual game is added that is represented by an observation  $y_T = \beta_T$ , where  $y_T$  is the natural logarithm of the team's ranking points in the end of season rankings.
  - The weight for the virtual game is 1 if T has played 5 or fewer close games in the season,  $\frac{1}{1,000,000}$  if they have played at least 5 close games.
  - For GUR rankings, the rankings from 2 years prior to the current rankings is used to determine virtual games and virtual games are also included for teams that were not listed in the published rankings due to not having played against a team from another region but had a ranking calculated internally.
- If a team resets their ranking mid-season, all games played before the reset and their virtual game (if there is one) are treated as if they had been played by a separate new team. This separate new team is not included in published rankings.