

# Estimating the prevalence of wedgies and predictions for 2019/20 season

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## **Abstract**

Utilising historical data, the benchmark estimate for the mean number of wedgies for the 2019/20 season is 42.03, with the probability of reaching 50 of 0.1%; however, two previous phenomena suggest that this may under-estimate potential wedgies for the NBA campus restart. First, in the last two seasons there has been an increase of wedgies in the post-season: playoff-wedgies come at a rate of 6.10% compared to a rate of 3.17% during the regular season. Second, wedgies are 50% more likely to occur in Florida than elsewhere in the NBA. Both of these are based on small sample sizes and as such caution should be applied; however, accounting for both these factors would lead to a prediction of 52.24 wedgies for the 2019/20 season.

# 1 Benchmark specification

Table 1 presents historical data on wedgies from past seasons. On average, a wedgie is observed in 3.52% of games, or alternatively, one every 28.2 games. This reached its peak in the 2016/17 season when 51 wedgies were observed, at a rate of 3.90%, or one every 25.7 games. Given this rate one would expect a further 6.03 wedgies in the estimated 171 games left in the season.<sup>1</sup>

Table 1: Historical wedgie data

Year	Wedgies	Games	Rate	GameR
2014/15	47	1311	3.59%	27.9
2015/16	45	1316	3.42%	29.2
2016/17	51	1309	3.90%	25.7
2017/18	40	1312	3.05%	32.8
2018/19	48	1312	3.66%	27.3
2019/20	36	971	3.71%	27.0
			3.52%	28.2

Total ‘Wedgies’ and ‘Games’ in a season (as identified in the first column) and the corresponding ‘Rate’ of wedgies and how many games per wedgie (‘GameR’).

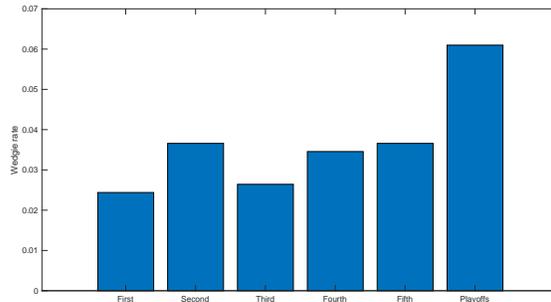
## 2 Wedgies by part of season

Historically, the time of season leads to different rates of wedgie; Figure 1 presents wedgie rates where the regular season is split into fifths (representing 246 games) and the playoffs.<sup>2</sup> In general, there is an increase in wedgies as the season progresses culminating in the highest wedgie rate in the playoffs of 6.10%; this compares to a rate of 3.17% during the regular season.

<sup>1</sup>Note the number of games is estimated through past post-seasons and does not take into account any potential further shortening of the season from (for example) COVID19.

<sup>2</sup>Data based on the 2017/18 and 2018/19 season for which there is itemised data.

Figure 1: Wedgie rate by time in season



Wedgie rates by period in the season, split into quintiles (groups of 20% of games) and the post-season.

Caution should be made here, reflecting the limited number of data points. These differences are not statistically significant to any acceptable standard of measure, but the trend is supportive of a general increase in wedgies during the season.

## 3 Wedgies by state

The NBA restart in July 2020 is unique in that all games will be played in Florida. It could be that conditions in Florida are more (or less) conducive to wedgies; this can be tested by looking at wedgies occurring in games with both the Miami Heat and Orlando Magic. In total, there have been 17 wedgies involving these two teams from the 2017/18 and 2018/19 seasons; however, only nine of these were in Florida (although one was in Mexico when the Heat played a regular season game there). This represents a wedgie rate of 4.79% compared with 3.08% for non-Florida based wedgies. This represents a 56% increase on the typical wedgie rate for Florida, although again, extreme caution should really be made here - there are few data points.

## 4 Optimistic estimate

Table 2 presents estimates on wedgies for the 2019/20 season based on a number of scenarios. The baseline estimate (based only on historical data documented in Table 1) presented above of 42.03 increases to 45.38 if the Florida-increase in wedgie-rate is incorporated. The baseline estimate increases to 46.44 if the increase in post-season wedgies is incorporated. Finally, if both the Florida and and playoff increase in wedgie rate is incorporated, the mean estimate for the mean estimate of wedgies for the 2019/20 season is 52.24.

Table 2: Wedgie predictions by different scenarios

	Rate	Mean	$P(w > 40)$	$P(w > 45)$	$P(w > 50)$
Benchmark	3.52%	42.03	0.719	0.086	0.001
Playoff	6.10%	46.44	0.978	0.596	0.109
Florida	5.48%	45.38	0.957	0.463	0.055
Playoff Florida	9.48%	52.24	1.000	0.962	0.655

Predictions for the ‘Mean’ (average) and probabilities for 40 ( $P(w > 40)$ ), 45 ( $P(w > 45)$ ) and 50 ( $P(w > 50)$ ) wedgies for different scenarios (as indicated in the first column) which provide different wedgie ‘Rates’ (as indicated in the second column).