

Home Field Advantage in the NFL

By Charlie Aftel





Agenda

- How home field advantage is affected by:
 - Crowd noise
 - Temperature and weather conditions
 - Altitude
- Which NFL stadiums/teams have the best home field advantage?





Crowd Noise

Crowd noise is one the most consistent home field advantage contributors.

- Harder to communicate, as silent counts increase risk of false starts
- Delayed reactions, as linemen and receivers on offense have to watch rather than listen to the quarterback
- Less audibles, meaning the quarterback cannot change plays

Measurable effects:

- Visiting offensives commit 7-15% more pre-snap penalties
- Pass blocking efficiently also drops
- Teams playing in domes have a better crowd noise advantage





Temperature

Temperature, both hot and cold, affect a visiting team's performance.

- **Cold weather:** Teams such as the Bills, Packers, and Chiefs benefit from the cold when they play a team from a warm weather climate due to factors such as the ball being harder to throw and catch, making pass-heavy offenses struggle. There tends to be more drops and fumbles, and about a 5-10% drop in passing EPA.
- **Warm weather:** Teams such as the Dolphins, Buccaneers, and Jaguars benefit from warm weather games, especially early in the season, since heat can decrease stamina among opponents not used to that type of weather.





Weather

Different types of weather can help home teams in games if they are used to it.

- **Wind:** Passing deep down the field is often reduced, and teams with stronger run games and defenses tend to benefit from wind patterns. Higher winds reduce field goal accuracy as well.
- **Rain and Snow:** These two types of weather, while different, have similar effects on the outcomes of games. Teams with strong run games have an easier time in this weather, but the home team can benefit from knowing the field and staying balanced when it is slippery.

When teams from warm weather climates or domes play a team in inclement weather, their winning percentage drops from 46% in normal weather to 28%.



Altitude

The Denver Broncos benefit the most from this factor

- When going to Mile High Stadium, visiting teams often report players becoming more fatigue
- Lactic acid builds faster in players' bodies
- The Broncos have a kicking advantage, as the thinner air allows the ball to travel further
- The Broncos also have a strong 4th-quarter performance when playing at home, since visiting teams get fatigued quicker

The altitude of Mile High Stadium alone often contributes to at least one win per season for the Broncos



Stadiums With Best Home Field Advantage

Crowd Noise:

- Lumen Field
- Superdome
- Arrowhead Stadium

Temperature/weather:

- Highmark Stadium
- Lambeau Field
- Soldier Field
- Hard Rock Stadium
- Raymond James Stadium

Altitude:

- Mile High Stadium



Teams That Benefit the Most

- **Denver Broncos:** High altitude is a major advantage for the Broncos at home, as no other stadium has as extreme altitude
- **Seattle Seahawks:** Lumen Field's design to trap sound makes the Seahawks have a strategic advantage when playing defense, as the crowd becomes loudest when the visiting opponent has the ball
- **Buffalo Bills:** Consistent extreme cold and wind allow the Bills to become familiar to this weather when playing at home
- **Green Bay Packers:** Similar to Buffalo, extreme cold allows the Packers to benefit
- **Miami Dolphins:** Extreme heat tires out opponents, and the design of Hard Rock Stadium puts the visiting team in direct sun during day games