

Predicting the Risk of Injury in the NFL

Eric Alonas



Bob's Team ▾
 Y Fantasy Sports
 0-0-0 0.00 0.00
Record Total Points Points/Week

What's on your mind?

Team Slogan...

Week 1 Matchup



0.00
0.00

0.00
53.98



vs [Charlie's Team](#) 0-0-0

Roster

Player Updates

Watch List

Team Log



Week 1



Stats

[Projected Stats](#)

[Game Day Decision](#)

[Split Stats](#)

[Ranks](#)

[Opponents](#)

[Research](#)

[Week 1](#)
 [This Season](#)
 [Last Season](#)
 2012-13

Week 1 Total: 0.00 pts (0.00 Projected)

[Add Player](#)

[Drop Player](#)

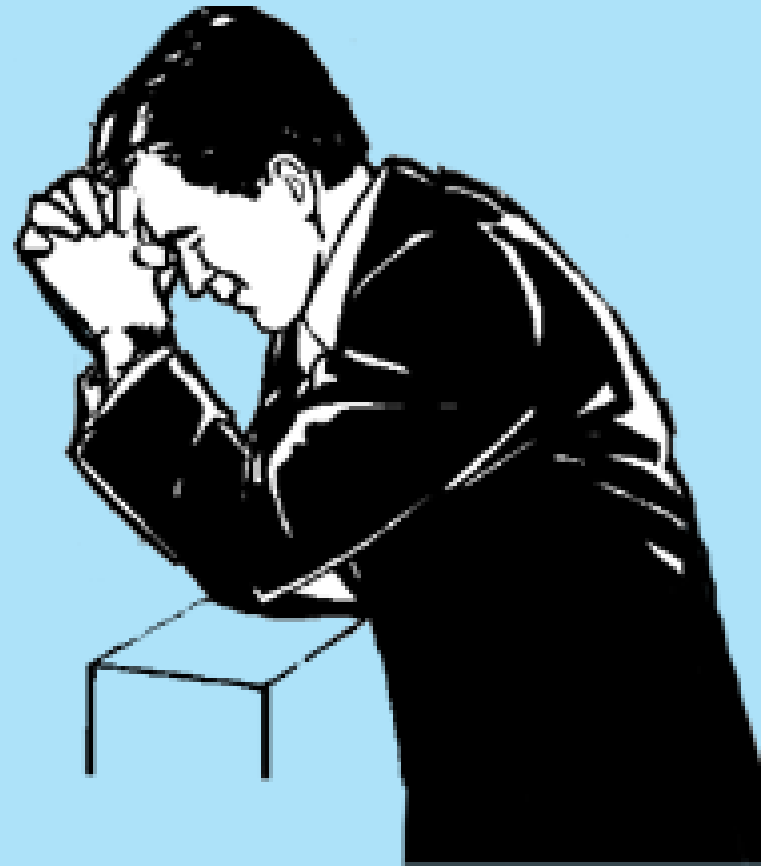
[Create Trade](#)

[Compare My Team](#)

Pos	Offense	Fantasy		Passing			Rushing		Receiving		Ret	Misc	Fum
		Fan Pts	% Start	Yds	TD	Int	Yds	TD	Yds	TD	TD	2PT	Lost
QB	(Empty)	0.00	0%	-	-	-	-	-	-	-	-	-	-
WR	(Empty)	0.00	0%	-	-	-	-	-	-	-	-	-	-
RB	(Empty)	0.00	0%	-	-	-	-	-	-	-	-	-	-
TE	(Empty)	0.00	0%	-	-	-	-	-	-	-	-	-	-
BN	Calvin Johnson Det - WR Mon 4:10 pm vs NYG	220.20	96%	0	0	0	0	0	1492	12	0	0	1
BN	Andrew Luck Ind - QB Sun 5:30 pm @ Den	302.58	83%	3822	23	9	377	4	0	0	0	4	2
BN	Shane Vereen NE - RB Sun 10:00 am @ Mia	87.50	26%	0	0	0	208	1	427	3	0	0	0
BN	LeSean McCoy Phi - RB Sun 10:00 am vs Jax	279.60	97%	0	0	0	1607	9	539	2	0	0	1

Please don't let my
Fantasy Football
Team be an
embarrassment for
me this year.

someecards



Problem Statement

Problem:

- Starting lineup sabotaged by injuries
- Can't keep up with all the news of who's injured and who's not
- Result: Underperforming fantasy team

Solution:

- Analyze relationship between injuries and stats
- Predict likelihood of injury
- Stretch goal: quantify performance/injury risk ratio for entire roster

Factors to consider

- Team
- Position
- Playing time
- Distance covered
- History of previous injuries
- Type of play (run, pass, etc)

Gathering Data


Slack

Apps | GA ATL Slack


Home - EY Laboratories, I

Sportradar US API Portal

api.sportradar.us/nfl-t1/2

driven by facts

Signed in as **timmy** [My Account](#) [Sign Out](#)



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I/O Docs: API Documentation

Test our API services using I/O Docs! Enter your sport specific TRIAL KEY in the box below.

NFL Trial

Sportradar's NFL API

App/Key:

Football Injury Risk prediction: jdmq6nfne2a7ucg6g5jkvsz7

Manually provide key information

[Toggle All Endpoints](#) | [Toggle All Methods](#)

NFL

[List Methods](#) | [Expand Methods](#)

GET

Weekly Schedule

nfl-t1/year/:nfl_season/:nfl_season_week/schedule.format

GET

Season Schedule

nfl-t1/year/:nfl_season/schedule.format

GET

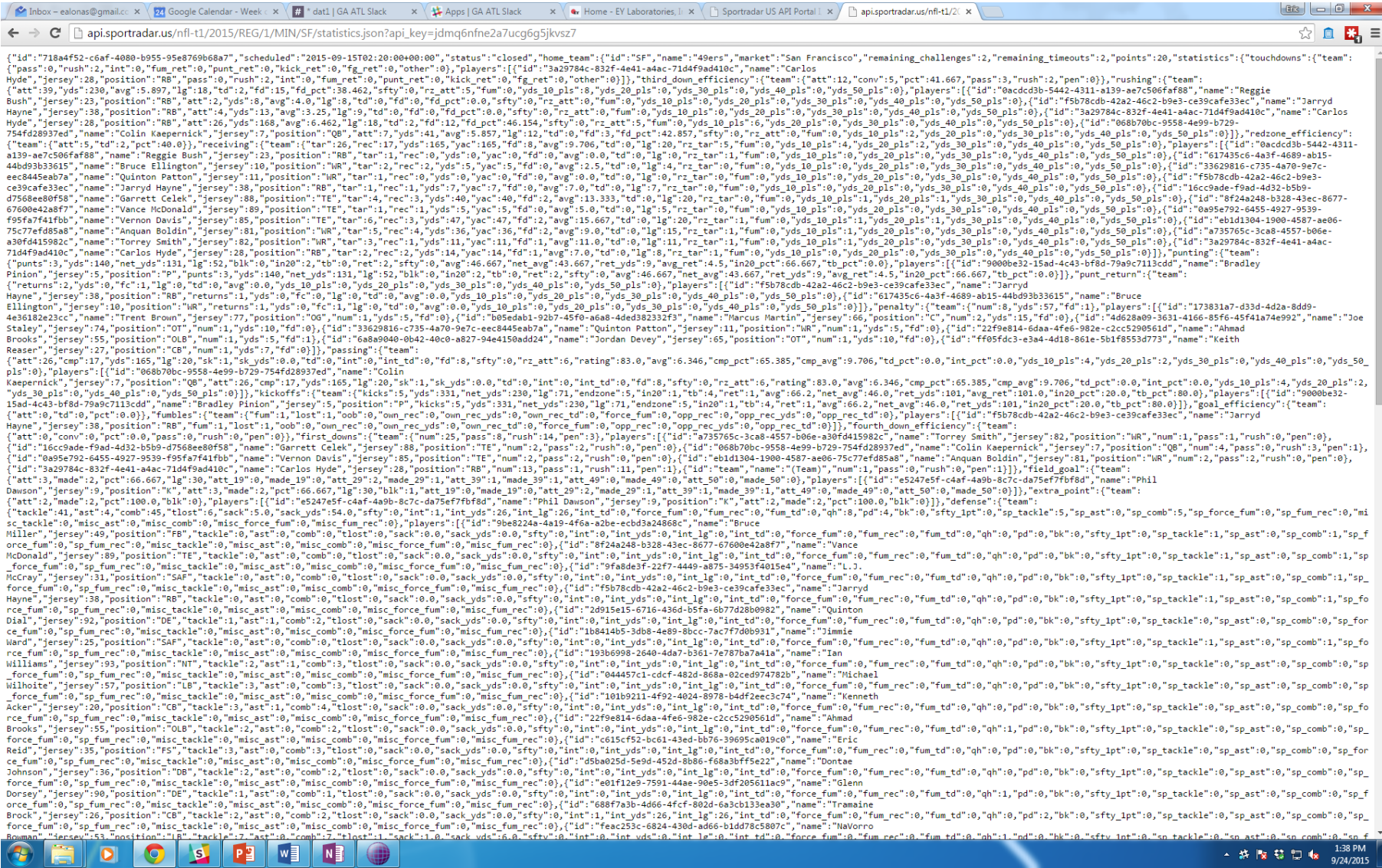
Game Statistics

nfl-t1/year/:nfl_season/:nfl_season_week/away_team/:home_team/statistics.format

Obtain the schedule for the NFL desired week using the Schedule API (Weekly or Seasonal). Next, choose Pre-Season (PRE) valid weeks 1-4, Regular Season (REG) weeks 1-17, Post-Season (PST) weeks 1-4. Lastly, enter the HOME and AWAY team for the particular game for which you wish to retrieve the stats.

Parameter	Value	Type	Description
:year	2015	num	The year of the season
:nfl_season	REG	string	The type of season
:nfl_season_week	1	num	The week of the season
:away_team	MIN	string	The away team
:home_team	SF	string	The home team

Gathering Data



The screenshot displays a web browser window with the address bar showing `api.sportradar.us/nfl-t1/2015/REG/1/MIN/SF/statistics.json?api_key=jdmq6nfne2a7ucc6g5jkvsz7`. The main content area shows a large block of JSON data representing game statistics. The data is structured with nested objects for teams, players, and various performance metrics. Key elements include:

- Team Information:** Identifies the teams as the San Francisco 49ers and the Carolina Panthers.
- Player Statistics:** Lists individual players with their jersey numbers and positions, such as Colin Kaepernick (QB), Reggie Bush (RB), and Bruce Ellington (WR).
- Performance Metrics:** Includes detailed statistics for each player, such as yards gained, touchdowns scored, and efficiency ratings.
- Game Context:** Provides information about the game date (2015-09-15), the league (NFL), and the specific game (Week 4).

The JSON data is extensive, covering multiple categories of statistics for both teams and individual players, providing a comprehensive overview of the game's performance.

Gathering Data

Updated 08.03.15			
League Information			
Conference id	Division id	Season	Week
Conference name	Division name	Season type	
Game Information			
Away team id	Game id	Official - First name	Remaining timeouts
Away team rotation	Game quarter	Official - Full name	Scheduled kickoff
Broadcast info - cable	Game status	Official - id	Total pts scored by team
Broadcast info - Internet	Game type	Official - Last name	Weather condition
Broadcast info - network	Home team id	Official - Number	Weather temperature
Broadcast info - satellite	Home team rotation	Official - Status	Wind direction
Game clock time	Humidity	Points by quarter	Wind speed
Game completion	Official - assignment	Remaining challenges	
Venue Information			
Address	Country	State	Zip
Capacity	Id	Surface	
City	Name	Type	
Player Information			
Abbreviated Name	Draft Team	Height	Position
Birth Date	Draft Year	Id	Position Description
Birth Place	Experience	Injury - Description	Position Id
College	First Name	Injury - Id	Practice Status
Depth Chart Position	Full Name	Injury - Start Date	Status
Draft Pick	Game Day Deactivation Flag	Jersey Number	Weight
Draft Round	Game Status	Last Name	
Team Information			
Coach - Abbreviate name	Coach - Id	Coach - Salary	Team market
Coach - First name	Coach - Last name	Coach - Status	Team name
Coach - Full name	Coach - Position	Team id	
Play-by-Play Information			
Drive - clock	Game quarter	Play - Progress - from side	Play - updated date/time
Drive - team	Play - clock	Play - Progress - from yd line	Play - yard line
Ending situation - down	Play - controller	Play - Progress - sequence	Play - yards to first down
Ending situation - side	Play - defensive action	Play - Progress - team id	Play participant - jersey num
Ending situation - team	Play - defensive formation	Play - Progress - to side	Play participant - player id
Ending situation - yard line	Play - direction	Play - Progress - to yard line	Play participant - player name
Ending situation - yds to 1st	Play - distance	Play - quarter	Play participant - position
Event - clock	Play - down	Play - score type	Play participant - team
Event - outcome	Play - formation	Play - scoring team	Starting situation - down
Event - sequence	Play - id	Play - sequence	Starting situation - side
Event - summary	Play - official	Play - side	Starting situation - team
Event - type	Play - overturned	Play - summary	Starting situation - yard line
Event - winner	Play - points scored	Play - type	Starting situation - yds to 1st