

## Codebook for Final Project

The predictors for this project were conducted by processing data from different sources these sources include:

- For player statistics:
  - Basketball Reference: <https://www.basketball-reference.com/>
- For injury logs:
  - Kaggle: <https://www.kaggle.com/ghopkins/nba-injuries-2010-2018>
- For prior injury counts:
  - Pro Sports Transactions:  
<http://www.prosportstransactions.com/basketball/Search/Search.php>
- Player age, height, weight index:
  - NBA Player Index : <https://www.nba.com/players>

**player** - our “observation” of an individual whom we will be assessing their performance before and after

**position** - the role in an on-court 5 man matchup, specified by PG (point guard), SG (shooting guard), SF (small forward), PF (power forward), C (center), usually decided by a combination of a player’s physique compared to other players in similar weight and height classes and their skillset criteria to match the role needed by the team

**age** - age specified on the date they were injured

**injury** - strings that explain what kind of injury the player has suffered, descriptions and keywords used to categorize by severity level

**inj\_level** - indicates the severity of the injury (as history has shown) listed in our last column leveled 1, 2, 3, & 4 (1 indicates common, less severe injuries while 4 indicates a detrimental, possibly career-changing injury);

Here is a list to get an idea of how these injuries are separated:

-Classification of Injury Levels:

\*Level I (least significantly impactful injury): Sore, back spasms, non-knee bruise

\*Level II (less significantly impactful injury): Ankle sprain, knee bruise, contusion, inflammation, hand/finger fracture

\*Level III (impactful injury): Lower body Fracture, torn ligaments

\*Level IV (highly significantly impactful injury): Knee/Leg break, Achilles tear, ACL/MCL tear

**time\_recovered** - (in days) time taken to recover from injury, found by subtracting the amount of time between the date returned and the date injured

**weight** - in lbs, weight of the player

**weight\_class** - a comparison of the player's weight to the average weight of their assigned position

-Weight Classification by Position:

PG: 187 - 203 lbs

SG: 205 - 215 lbs

SF: 215 - 225 lbs

PF: 228 - 240 lbs

C: 240 - 260 lbs

**height** - in cm, height of the player

**height\_class** - a comparison of the player's height to the average height of their assigned position

-Average Height of each Position (this makes sense because of matchups):

PG: 6'2"-6'3"

SG: 6'4"-6'5"

SF: 6'6"-6'7"

PF: 6'8"-6'9"

C: 6'10"-6'11"

**prior\_inj\_count** - number of injuries the player sustained before the current injury we are observing, a higher count of prior injuries indicates a player has either played a long career at the time or is more injury prone than most players

**mpg\_preinj/mpg\_postinj** - average minutes per game played in a 10 game span each for pre-injury/post-injury

**FG\_preinj/FG\_postinj** - average field goals made in a 10 game span each for pre-injury/post-injury

**FGA\_preinj/FGA\_postinj** - average field goals attempted in a 10 game span each for pre-injury/post-injury

**FT\_preinj/FT\_postinj** - average free throws made in a 10 game span each for pre-injury/post-injury

**FTA\_preinj/FTA\_postinj** - average free throws attempted in a 10 game span each for pre-injury/post-injury

**ORB\_preinj/ORB\_postinj** - average offensive rebounds gathered in a 10 game span each for pre-injury/post-injury

**DRB\_preinj/DRB\_postinj** - average defensive rebounds gathered in a 10 game span each for pre-injury/post-injury

**AST\_preinj/AST\_postinj** - average assists made in a 10 game span each for pre-injury/post-injury

**STL\_preinj/STL\_postinj** - average steals made in a 10 game span each for pre-injury/post-injury

**BLK\_preinj/BLK\_postinj** - average blocks made in a 10 game span each for pre-injury/post-injury

**TOV\_preinj/TOV\_postinj** - average turnovers made in a 10 game span each for pre-injury/post-injury

**PF\_preinj/PF\_postinj** - average personal fouls taken in a 10 game span each for pre-injury/post-injury

**points\_preinj/points\_postinj** - average points made in a 10 game span each for pre-injury/post-injury

**gs\_preinj/gs\_postinj** - average game score (GS) in a 10 game span each for pre-injury/post-injury GS or the Hollinger game score is an accumulation of the above stats taken through a formula:

- **Game Score (GS) = PTS + 0.4 \* FGM - 0.7 \* FGA - 0.4 \* (FTA - FT) + 0.7 \* ORB + 0.3 \* DRB + STL + 0.7 \* AST + 0.7 \* BLK - 0.4 \* PF - TOV**
  - Gathered from Basketball Reference source

**gs\_per36\_preinj/gs\_per36\_postinj** - average GS in a 10 game span each for pre-injury/post-injury adjusted to 36 minutes to compare performance pre-injury and post-injury; we will be using these to compare in order to get our next variable:

**performance** - assessment of comparing GS pre-injury vs post-injury; if player performs within 1.5 GS points of their game score pre-injury, they have equally performed (with greater being overperformed, with lesser being underperformed)