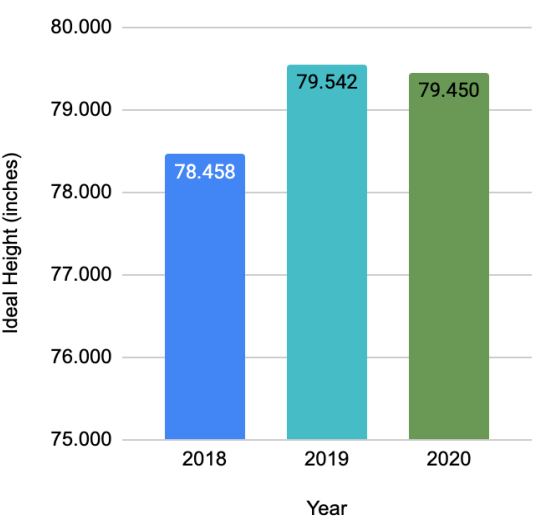


Team Project

Phase 3: Discussion

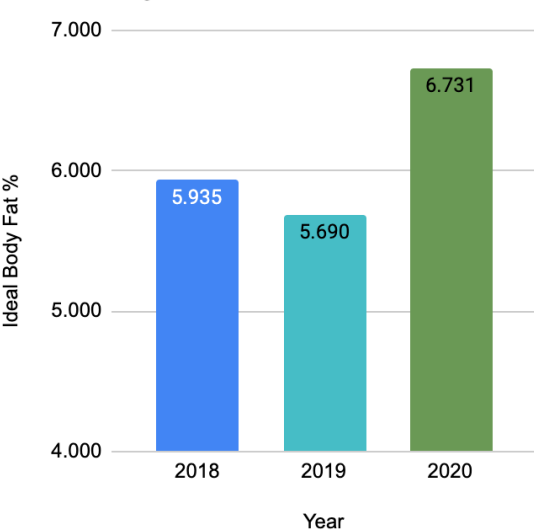
In our first investigative question, we wanted to examine if there was an ideal physique for the draft players in a specified year. Before we could examine the data, we needed to define what the ideal physique would be. Our initial idea was to take all the data found in the combine anthro data set, this contained a set of different body measurements, and find the average body measurements. When we took a look at the results using this technique, we could not find any significant changes over the 2018-2020 time period. We then changed our strategy and found the average body measurements of the top ten ranked players in the combine anthro data set. This began to show us more of a trend in regards to having an ideal physique.

Ideal Height vs. Year

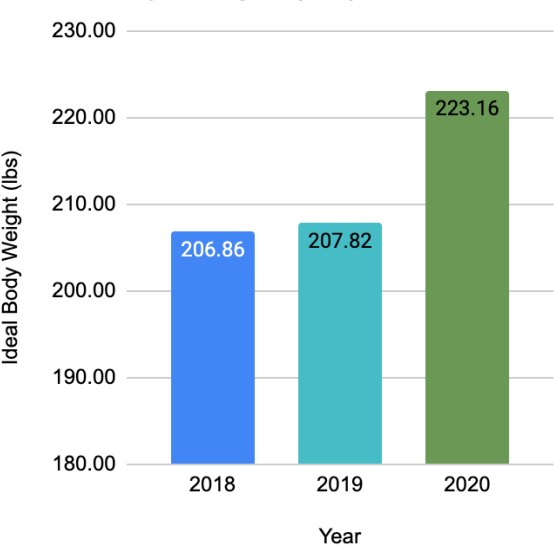


In terms of ideal height, we did not find any substantial trends here. The ideal heights over the years have remained somewhat consistent. The height will only fluctuate so much, at the end of the day, we are talking basketball. The more significant trends began to appear when we examined body fat percentage and weight.

Ideal Body Fat % vs. Year



Ideal Body Weight (lbs) vs. Year



Based on the results presented in the above two graphs, we found that there was a substantial weight and body fat percentage increase within the 2020 draft picks. We had taken note that the NBA has been increasingly less strict with giving out fouls resulting in more aggressive games. Being of a higher weight gives a player the advantage of over taking their opponent in these increasingly aggressive face offs. This could be the reason as to why the ideal physique in 2020 is the way it is.

In our second question, we wanted to see if there were any prominent colleges that produced more draft players than other colleges; “Do certain colleges produce more draft players than others?” This question was asking something very specific, we wanted to see the total number of draft players from each college over a specified time frame. In our case, it was 2018 to 2020. Our first approach was to load each year's data separately, run the query, and compare each year's result to each other. This process was tedious and calculations were done manually. We were missing out on some insightful results using this technique. As a result, we created a data set and table that would take in a player's year and rank (with some additional information about the player) so that we can compute and compare the results over the entire time frame. Here is a snippet of the final query result for 2018-2020:

college	total_players	rank_avg	highest_rank	num_years
Duke	10	20	1	3
Kentucky	10	24	9	3
Villanova	6	25	10	3
USC	4	32	6	3
Maryland	4	26	10	3
Texas Tech	3	21	6	3
Oregon	3	28	15	3
Arizona	4	22	1	2
Virginia	4	34	4	2
...				

We found a clear answer to our question from this result: there are colleges that do produce more draft players. In this table it shows that Duke and Kentucky both produced a total of 10 draft players over the entire 2018-2020 time frame. We wanted to investigate this result further and see if one of these colleges outperformed the other. We found each college's draft players average ranking and the highest rank over the time period. It was evident that Duke was the winner. They had an average ranking of 20 and a highest ranking draft player at the number one spot!

In terms of findings of the third question, “Are the number one picks in the draft the most successful players from their year?” This question was a bit more difficult to answer. The reason is there is no definitive scale to dictate a player's

success. Is it the number of NBA championships he wins, the number of NBA All-Star appearances he makes or is it the stats that he puts up during the games? The route taken to answer this question was to look at the players' statistics. Statistics were chosen because overall, they are a reasonably objective way to measure how well a player is doing. Unlike counting the number of NBA championships or NBA All-Star appearances which are heavily dictated on team skill and success too, looking at individual player stats is solely based on the player's production in-game. If the player puts up good numbers in game, teams are more likely to keep them around contributing to greater player success. As mentioned in previous phases, there are a plethora of statistics that are recorded for a player in game, however, the most important metrics that correlate directly to how well a player performs are shooting percentages which dictate efficiency and points, assist and rebound averages as they directly contribute to the success of the game and the players' overall impact. First, when looking at shooting percentages, players who were drafted higher generally shot higher percentages. This can be backed up by the results of Query 4 in queries_q3.sql which looked at the average rank of the top 10 players with the highest field goal percentage. The average rank was around 20 [Lower the better] for the year 2020, with the other years shooting percentages also around 20. With the draft containing around 60 players, that meant the top-ranked 33% of the players were indeed the best shooters in the draft. Furthermore, when looking at actual game stats, again players who were drafted higher performed better in game putting up higher stats. This again can be backed up by the results as in query 11 in queries_q3.sql which looks at the average rank of the top 10 players with the highest points per game, assists per game, and rebounds per game. The average player rank was 13 for the highest points per game in 2020, in fact, in 2018, the average player rank was 9! Overall the average player rank for top points, assists, and rebounds was around 13 which means the top-ranked 21% of players were indeed putting up the best game stats. Therefore, it was easy to say the top-ranked players would be the most successful blindly. After writing the queries for this question, the results and findings cemented that overall notion.