NBA Body Composition over the Years

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Introduction

Topic:
How height and weight differ by position among NBA players, 1950–2026

Motivation:

- Shared interest in sports
- Rule changes
- Rise in professional training
- Recent shift towards “positionless” basketball

Research Question:
How has the relationship between player position and physical build (height and weight) changed among NBA players since 1950?

Data

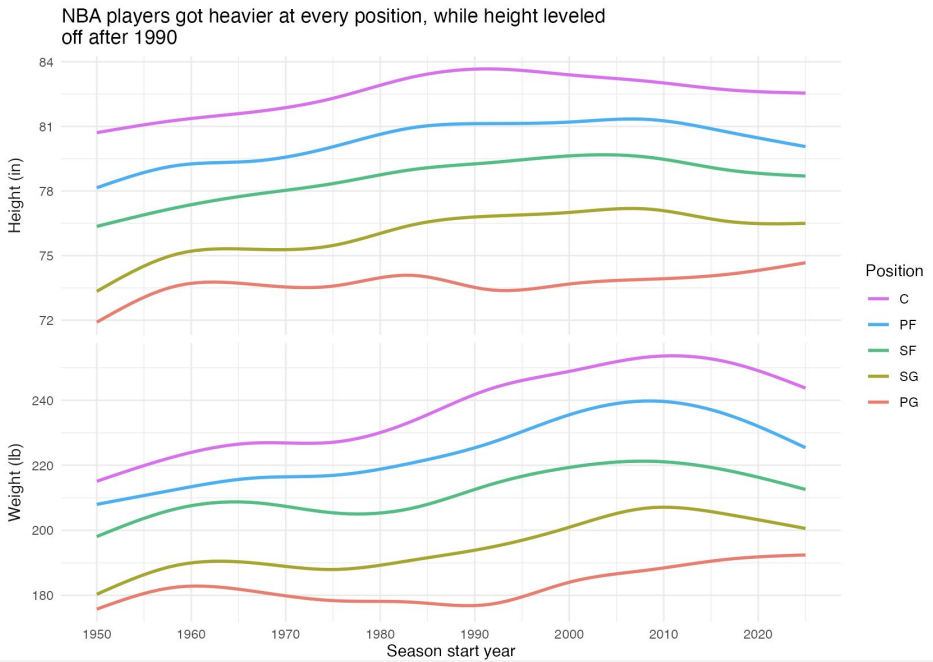
Dataset:

- NBA players from 1947–2025
- basketball-reference.com
- Data had incorrect position values
    - Scraped through player pages for correct position values per season

Variables:

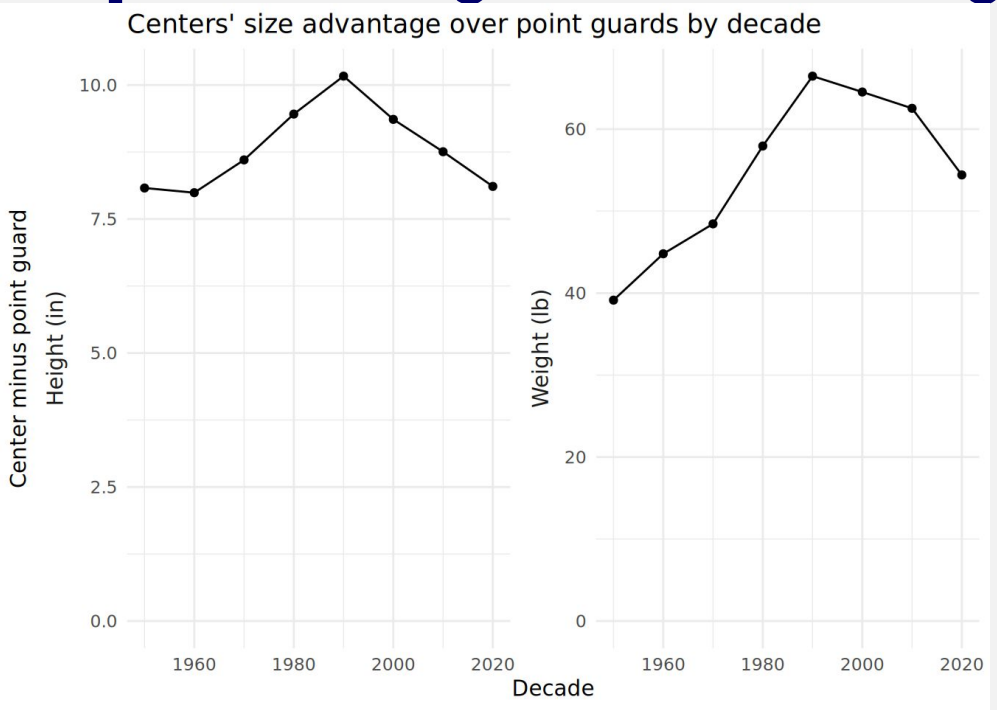
- `player` – Player name (e.g. “Michael Jordan”)
- `pos` – Player position (C, PF, SF, PG, SG)
- `ht` – Height (ft-in converted to in)
- `wt` – Weight (lbs)
- `season_start` – Year that a season started in

Exploratory Data Analysis



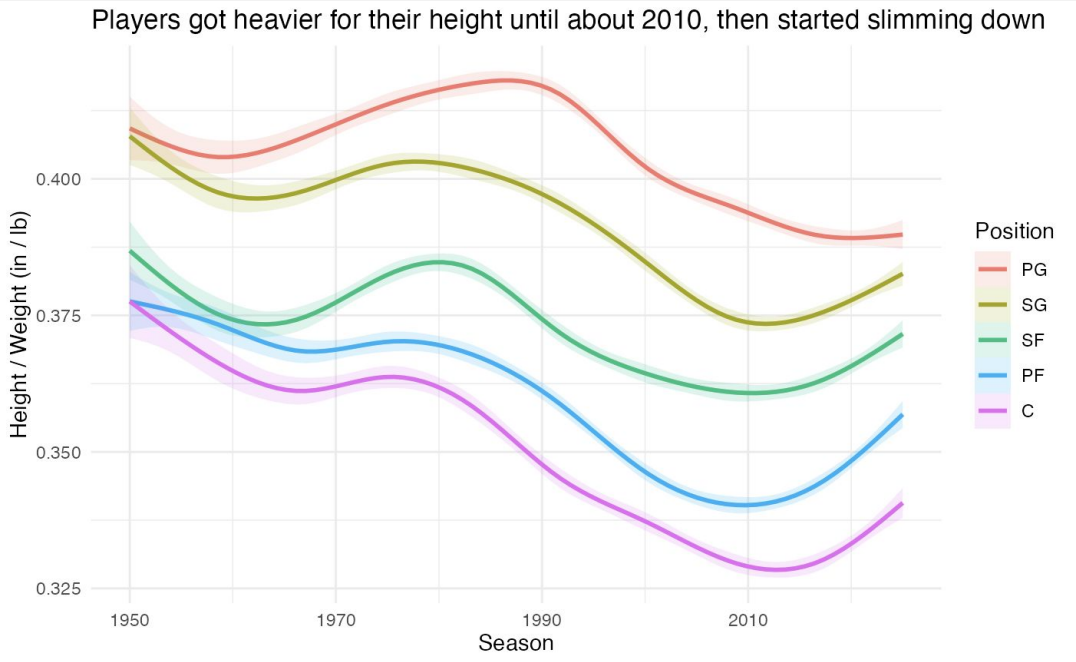
- Ordering never changes
- Overall heavier, minor height changes
- Ranges seem to be getting greater (1950 values v.s. 2020)

Exploratory Data Analysis



- Average height of Center v.s. Point Guard
- Divergence –> Convergence
- Height vs. Weight change difference

Exploratory Data Analysis



- Ratio of weight to height
- Weight gap in previous slide decreased
- Height vs. Weight change difference

Conclusion + Discussion + Critique

Players entering became heavier, and positions are converging again

Conclusion

- The average player gained 25 lb since 1950, but height only 1.4 in
- Centers gained 4.89 lb per decade, twice what point guards did (2.45 lb)
- All five positions grew, and centers stayed the largest throughout

Discussion

- Centers and point guards differed most in the 1990s, by 10 inches
- That gap is now 8 inches, about where it sat in the 1950s
- Guards and forwards in between have nearly identical builds
- Teams now want versatile players, not one specialist per position

Critique

- Each player has one overarching height and weight, never updated.
- NBA players are mixed together from 1967 to 1976
- Original website doesn't have record of every single player, small sample size for older seasons
- 2019 changed height to shoeless height