

**MatStats Episode 38**  
**Wednesday November 20<sup>th</sup>, 2024,**  
**3PM EST**

# **Be True To Your School** **Part 1 of 2.**

**Episode**  
**38-1**

MatStats does its 2<sup>nd</sup> annual assessment of HS wrestling numbers. We analyze the participation numbers and growth of wrestling. Part 1 deals with the National Federation of High School (NFHS) participation numbers over the years. Part 2 analyzes the state survey and questionnaire that the NWCA sent to all 50 states. A play on the Beach Boys famous song, MatStats is true to our schools' numbers and provides in depth analysis.





# The Glue that held Tribe wrestling together for years. LD Davis Glues & Adhesives.

Episode  
38-2



MatStats wants to give a shout out to LD Davis Glues & Adhesives. The company will be 100 Years old in 2026. Mr. & Mrs. Davis' generosity helped Tribe wrestling so much in Tripp's 4 years wrestling at W&M.

Mr. & Mrs. Davis were also a big part at Penn Charter Wrestling in the 70's & 80's.

One hot summer Gorms worked at the plant.

Tripp Davis is now the third generation to run the family business.



# In This Episode

Episode  
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## Episode 38 11/20/24 Be True to Your School (part 1 of 2)

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# The MatStats Show is Here to Create a Library of Statistical Analysis for the NWCA.

Episode  
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- Mike Moyer, the Executive Director of the NWCA, approached the MatStats gang to create a library of statistical analysis for the NWCA.
- This is an effort to help grow the sport and educate the wrestlers, coaches, and fans.
- When MatStats was created in 2020 (book) and 2021 (monthly show), there was a serious need for statistical analysis.



## I Feel Like A Number

Episode  
38-5

To the fans I'm just a drone  
To my wireless service I'm just another phone  
I'm just a statistic on a bout sheet  
To the teachers I'm just another child  
To the IRS I'm just another file  
I'm just a correlation on the stat sheet

I feel like a number  
I feel like a number  
I'm not a number, I'm not a number



Jenny, Jenny had perhaps the most famous phone number in American history.

867-5309

Episode  
38-6

MatStats, MatStats, who can I turn to?  
You give me something I could hold on to  
I know you think I'm like the others before  
Who saw your name and number on the wall.

.....

867-5309

Mat-Stats

Mat-Stats

Danny's Glass in Yorktown, VA



## Are there any disclaimers MatStats needs to let everyone know about their shows?

The Opinions Expressed on this show do not necessarily reflect any policies or opinions of the NWCA. Also, the MatStats guys do not always agree on all things discussed on their shows.

Episode  
38-7

- MatStats is a subsidiary of the NWCA but is a separate entity that voices its own opinions on its statistical analysis.
  - MatStats three hosts, Gormley, Bryant, and Hazard are all equally responsible for all the good outcomes. Gormley for the bad feedback.
- Gormley writes the Power Points and selects the topics. Gormley uses the term MatStats often, but many times it is Gormley's opinion alone.
- Gormley does the stats work and then the three hosts & occasionally guests brainstorm about Gormley's findings and ideas.
  - MatStats is designed to have educated thoughts and opinions to help the world's oldest and greatest sport.
- Wrestling is all about settling disagreements. The hosts are too old to settle these disagreements on the mat.
- Sometimes we agree, sometimes we disagree. It makes the world go round.



MatStats is based on numbers, stats, and analyzing them. It starts with facts not opinions.

Episode  
38-8

- MatStats is a numbers show.
- Thus, the name MatStats. Not MatOpinions.
- Gorms was remiss not explaining this from the get-go. Gorms lives in a numbers world and is starting to get the feeling not everyone does lol.
- Feedback from the Tribe alumni during this show has made Gorms realize he needs to address this and try to educate people with numbers. Thank you, Dr. Powell, for one of your texts.



If Gorms does not have any statistical answers, where does he look next? We want answers.

**MatStats is a show that revolves around stats, but there is a reason we have balance on the show. Not all answers have a numeric quantifiable component.**

Episode  
38-9

- Let's have the two on the show that know wrestling weigh in on based their decades around the sport (Jason & Kevin - and at times guests).
- To paraphrase the Ramones - Gormley needs to be sedated.
- Much to the chagrin of Gorms (The Sultan of Stat), not everything can be quantified with a number(s). You can't put a number on why Babe Ruth (The Sultan of Swat) hit 714 HRs, but we can put a number on how many he hit.
- We will provide answers before the conclusion of this show. If it is not in the numbers, we will do our best to provide answers. One thing you learn in MBA school is find an answer. A consultant's answer can not be hiring a blue-ribbon panel. You went to MBA school to be the blue-ribbon panel.



Can MatStats provide the viewers with a monthly update on the number of men & women's NCAA & NAIA teams?

As of 11/12/24, there are **508** men & women's wrestling teams in the NCAA & NAIA.

Episode  
38-10

With the Help of Jason, we Removed Teams that Announced But changed their decision Due to Money or Covid.

| Category | Men | Women | Total | Most ever Men's Teams | Year | Most Ever Total Teams | Years |
|----------|-----|-------|-------|-----------------------|------|-----------------------|-------|
| NCAA D1  | 80  | 5     | 85    | 146                   | 1982 | 146                   | 1982  |
| NCAA D2  | 74  | 34    | 108   | 74                    | 2024 | 108                   | 2024  |
| NCAA D3  | 131 | 68    | 199   | 149                   | 1982 | 199                   | 2024  |
| NCAA     | 285 | 107   | 392   | 363*                  | 1982 | 392                   | 2024  |
| NAIA     | 71  | 45    | 116   |                       |      | 122                   | 2024  |
| 4 Year   | 356 | 152   | 508   |                       |      | 508                   | 2024  |

• - Note the NCAA reports 393 men's teams in 1972, but they do not know how many were "non-varsity/sub-varsity" teams.



How many NCAA male wrestlers participated in 2023-24? Where does it rank?

Episode  
38-11

In 2024, there were more NCAA male wrestlers than at anytime since 1981-82.

| Men's NCAA Wrestling Participants |         |              |            |
|-----------------------------------|---------|--------------|------------|
| Rank<br>(Participants)            | Year    | Participants | Squad Size |
| 1                                 | 2023-24 | 8801         | 32.0       |
| 2                                 | 1984-85 | 8572         | 26.4       |
| 3                                 | 1983-84 | 8417         | 24.6       |
| 4                                 | 1985-86 | 8401         | 26.5       |
| 5                                 | 2021-22 | 8338         | 32.2*      |
| 6                                 | 2022-23 | 8309         | 31.1       |
| 7                                 | 1986-87 | 8205         | 27.4       |
| 8                                 | 1982-83 | 8155         | 23.2       |
| 9                                 | 1981-82 | 7914         | 21.8       |
| 10                                | 2019-20 | 7673         | 30.7       |

\* - In 2021-21,  
We saw the  
Largest squad  
Size of any year  
Since 1981-82.



# Most NCAA Male wrestlers in NCAA recorded history.

Episode  
38-12

- Wow!! There were more NCAA male wrestlers in 2023-24 than at any time since 1981-82.
  - This is great news. Anyone younger than Gorms has never wrestled in college at a time when there were more NCAA male wrestlers than 2024.
- What can you tell us about the numbers prior to 1981-82 since the NCAA changed their recording keeping methodology?



## What do we know about NCAA history prior to 1981-82?

**Numbers prior to 1981-82, but these numbers used a different methodology.**

Episode  
38-13

| Year    | Teams | Participants |
|---------|-------|--------------|
| 1956-57 | 186   | 4,765        |
| 1961-62 | 289   | 7,630        |
| 1966-67 | 332   | 7,889        |
| 1971-72 | 393   | 9,437        |
| 1976-77 | 379   | 8,712        |
| 1981-82 | 363   | 7,914        |

Note - Jason is hard at work combing through old periodicals to see if MatStats can provide accurate Numbers on the number of teams prior to 1981-82.



# The NCAA wrestling team and participation numbers **might** include recreational teams.

Episode  
38-14

From page #133 of the “NCAA Sports Sponsorship and Participation Rates Report” (1956-57 through 2023-24) Updated September 19, 2024.

“Between 1956-57 and 1981-82, participation rates were collected in five-year intervals. The data for these years was not collected in the same manner as the data from 1982 to the present and it includes recreational programs. Therefore, these data are not directly comparable to the other data in this report. This information is only meant to provide a historical view.”



# 2023-24 is the high-water mark for NCAA male wrestling participation numbers.

Episode  
38-15

- The NCAA says you can not compare data prior to 1981-82 to data after that.
- The reliable data shows we are in the glory days of NCAA male wrestling participation.
- MatStats should have more data on the number of teams prior to 1981-82 after Jason completes his exhaustive research. He is kind of busy now with the collegiate wrestling season underway.



Any other great news for collegiate wrestling?

The National Collegiate Wrestling Association (NCWA) saw a 45.8% increase in women's teams for the 2025 season.

Episode  
38-16

| NCWA                     | 2024      | 2025      | Delta     | % Delta       |
|--------------------------|-----------|-----------|-----------|---------------|
| <b>Women's<br/>Teams</b> | <b>59</b> | <b>86</b> | <b>27</b> | <b>45.80%</b> |

Kevin has always been a fan of Jim Giunta and the NCWA. He led the push for W&M on this topic.  
If only more of us had listened to Kevin.



# Shout Out to Jim Giunta

Episode  
38-17

- The NCWA started a women's championship in 2007.
  - They now have 86 women's teams.
  - And 134 men's teams.
- The NCWA National Championships are on 3/13/25 to 3/15/25 at the Brookshire Arena in Bossier City, LA.
- Now let's start the show. Gorms what did we find out about the HS numbers?



## What is the topic for Episode #38?

# Episode #38 is on the High School wrestling participation numbers.

Episode  
38-18

- At the request our parent organization, NWCA, MatStats is reviewing and analyzing the high school participation numbers in wrestling.
- We look at all 50 (+DC) states.
- We dive into both boys & girls numbers. Of course we do, wrestling is now a sport that has both boys and girls. However, there is a lot more data on boys because of a longer history, so we spend more time analyzing the boys.
- We compare the numbers to other sports, population, and try and find what is helping states grow the world's oldest and greatest sport.
- Thanks to the National High School Federation (NFHS) for their data and all their work to make this possible.



Can we see a table on the number of national teams and participation numbers since 2014?

National HS teams and participants from 2014 to 2024. The **11,149** boys' teams are the most ever.

Episode  
38-19

| Year             | Boys Schools  | Boys Participants | Girls Schools | Girls Participants | Total Participants |
|------------------|---------------|-------------------|---------------|--------------------|--------------------|
| 2024             | <b>11,149</b> | <b>291,874</b>    | 7,138         | 64,470             | 356,344            |
| 2023             | 10,962        | 259,431           | 6,545         | 50,016             | 309,447            |
| 2022             | 10,797        | 231,874           | 4,802         | 31,654             | 263,528            |
| 2019             | 10,843        | 247,441           | 2,890         | 21,124             | 268,565            |
| 2018             | 10,775        | 245,564           | 2,351         | 16,562             | 262,126            |
| 2017             | 10,629        | 244,804           | 2,091         | 14,587             | 259,391            |
| 2016             | 10,685        | 250,653           | 1,941         | 13,496             | 264,149            |
| 2015             | 10,597        | 258,208           | 1,806         | 11,496             | 269,704            |
| 2014             | 10,668        | 269,514           | 1,516         | 9,904              | 279,418            |
| 10-year growth % | +4.51%        | +8.30%            | +370.8%       | +550.9%            | +27.5%             |



# Is the increase of +32,443 (+12.5%) boys' participants reliable? Yes!

Episode  
38-20

- The spike (+12.3%) from 2023 to 2024 in boys HS participation numbers raised Gorms interest.
- Dr. Paquette reached out to the NFHS and insured Gorms that there was no methodology change. The national numbers for all male sports shows an increase of +2.41% confirm this.
- Did the advent of girls wrestling and its extreme growth help this? The correlation for boys and girls growth from 2014 to 2024 = +0.53. A possibility. Either way, something good for the growth of the sport is taking place.
- We will learn more following the 2025 season. Hopefully, this number is sustainable.



How does the wrestling participation growth compare with all HS sports from 2014 to 2024?

**Boys wrestling has 3.5x growth rate of all sports.  
Girls wrestling is in a whole other stratosphere.**

Episode  
38-21

| Year              | Boys NFHS national participation all sports | Girls NFHS national participation all sports | Total NFHS national participation all sports |
|-------------------|---|--|--|
| 2014              | 4,527,994                                   | 3,267,664                                    | 7,795,658                                    |
| 2024              | 4,638,785                                   | 3,423,517                                    | 8,062,302                                    |
| % Delta All       | +2.4%                                       | +4.8%  | +3.4%  |
| % Delta Wrestling | +8.3%                                       | +550.9%                                      | +27.5%                                       |



How does the boys HS wrestling growth rate compare with the USA population growth rate?

Boys HS wrestling participation (+8.3%) is growing faster than the USA population (+5.6%) from 2014 to 2024.

Episode  
38-22

| Years        | Boys HS NFHS Wrestling % growth | USA Population % growth |
|--------------|---------------------------------|-------------------------|
| 2014 to 2024 | +8.3%                           | +5.6%                   |

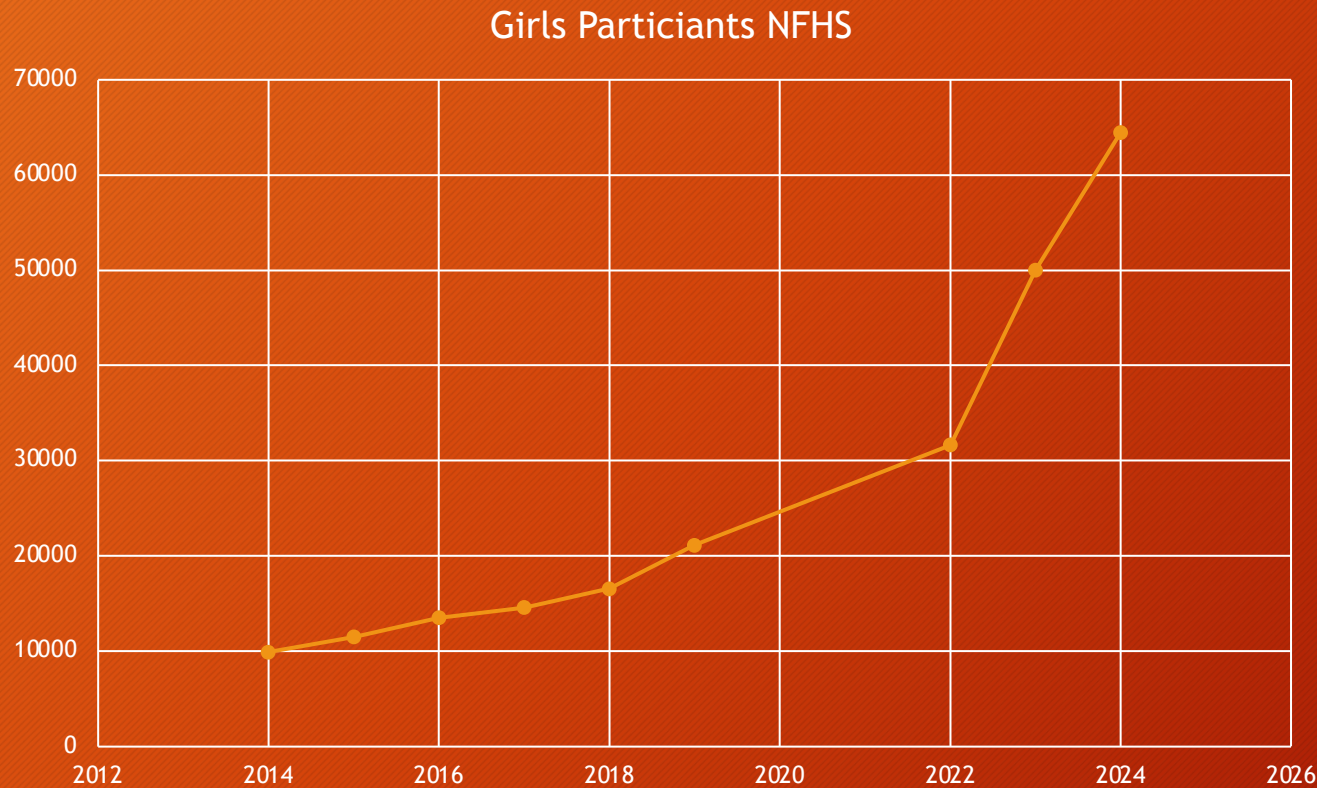
HS boys & girls Wrestling participation is growing faster than overall HS participation numbers and the USA population. Good times for wrestling!!



Can MatStats provide a graph for the growth in girls HS wrestling participation numbers?

The steep curve in this graph shows a picture of how large the growth is in girls HS wrestling. A pic is worth 64K girls' wrestlers.

Episode  
38-23



Note - The NFHS does Not have numbers for 2020 & 2021 due to Covid.



## How high is girls wrestling ranked in sorts in the 2024 NFHS numbers?

**Girls' wrestling is ranked #13 on the participation list for all female HS Sports. There are now more female HS wrestlers than Field Hockey players!!**

Episode  
38-24

| Rank | Sport         | Girls NFHS 2024 Participants |
|------|---------------|------------------------------|
| 1    | Track Outdoor | 506,015                      |
| 2    | Volleyball    | 479,125                      |
| 3    | Soccer        | 383,895                      |
| 4    | Basketball    | 367,284                      |
| 5    | Softball      | 345,451                      |
| 6    | Tennis        | 195,766                      |
| 7    | Cross Country | 192,969                      |
| 8    | Spirit        | 181,023                      |
| 9    | Swimming      | 138,174                      |
| 10   | Lacrosse      | 101,204                      |
| 11   | Golf          | 82,836                       |
| 12   | Indoor Track  | 69,466                       |
| 13   | Wrestling     | 64,470                       |
| 14   | Field Hockey  | 51,896                       |
|      | Bowling       | 27,246                       |
|      | Ice Hockey    | 9,023                        |
|      | Rowing        | 1,042                        |



Are there any differences in the analysis of boys & girls wrestling the viewers need to grasp to help them follow the numbers and logic.

In business terms, boys wrestling in a mature industry, girls is a growth industry. This term is a business term and has nothing to do with physical and emotional maturation.

Episode  
38-25

- Mature industries are characterized by slow growth rates, stable market shares, and established competitors, whereas growth industries experience rapid expansion, innovation, and increasing market demand. Understanding the differences between these two types of industries is crucial for analyzing and evaluating the differences in boys and girls wrestling in 2024.
- Boy's wrestling is long established so a mature business.
- Girl's wrestling is new to the party, so a growth business.



## How does the growth rate in HS boys wrestling compare with the other top 10 sports from 2014 to 2024?

Boys Wrestling has a slightly larger growth rate than the top 10 sports. Interestingly the 3 smallest growth sports are the big 3 - **Football, Basketball, & Baseball.**

Episode  
38-26

| Rank | Boys HS Sport | 2014 NFHS national teams | 2024 NFHS national teams | % Delta |
|------|---------------|--------------------------|--------------------------|---------|
| 1    | Basketball    | 18,126                   | 18,587                   | +2.5%   |
| 2    | Track Outdoor | 16,271                   | 17,274                   | +6.2%   |
| 3    | Baseball      | 15,789                   | 16,146                   | +2.3%   |
| 4    | Cross Country | 14,473                   | 15,511                   | +7.2%   |
| 5    | Golf          | 13,493                   | 14,055                   | +4.2%   |
| 6    | Football      | 14,262                   | 13,788                   | -3.3%   |
| 7    | Soccer        | 11,718                   | 12,754                   | +8.8%   |
| 8    | Wrestling     | 10,668                   | 11,149                   | +4.5%   |
| 9    | Tennis        | 9,849                    | 10,175                   | +3.3%   |
| 10   | Swimming      | 7,101                    | 7,855                    | +10.6%  |
|      | Total Top 10  | 131,750                  | 137,294                  | +4.2%   |



## What about the growth rate of the number of participants?

Since 2014, of the top 10 boys' sports only Soccer has a larger growth rate than wrestling.

Episode  
38-27

| Rank | Boys HS Sport             | 2014 NFHS national participation | 2024 NFHS national participation | % Delta |
|------|---------------------------|----------------------------------|----------------------------------|---------|
| 1    | Football                  | 1,093,234                        | 1,031,508                        | -5.65%  |
| 2    | Track Outdoor             | 580,321                          | 625,333                          | +7.76%  |
| 3    | Basketball                | 541,054                          | 536,668                          | -0.81%  |
| 4    | Baseball                  | 482,629                          | 471,701                          | -2.26%  |
| 5    | Soccer                    | 417,419                          | 467,483                          | +11.99% |
| 6    | Wrestling                 | 269,514                          | 291,874                          | +8.30%  |
| 7    | Cross Country             | 252,547                          | 239,381                          | -5.21%  |
| 8    | Tennis                    | 160,545                          | 157,835                          | -1.69%  |
| 9    | Golf                      | 152,647                          | 155,174                          | +1.66%  |
| 10   | Swimming                  | 138,373                          | 116,799                          | -15.59% |
|      | Total Top 10              | 4,088,283                        | 4,093,756                        | +0.13%  |
|      | Top 10 % All Participants | 90.3%                            | 88.3%                            |         |



# Can MatStats provide a table from NFHS from 1970 to 2024?

## The NFHS boys wrestling participation numbers from 1970 to 2024.

Episode  
38-28

| Year | Boys Participants | Year | Boys Participants | Year | Boys Participants |
|------|-------------------|------|-------------------|------|-------------------|
| 2024 | 291,874           | 2004 | 238,700           | 1986 | 247,653           |
| 2023 | 259,431           | 2003 | 239,845           | 1985 | 244,598           |
| 2022 | 231,874           | 2002 | 244,637           | 1984 | 248,300           |
| 2019 | 247,441           | 2001 | 244,984           | 1983 | 254,581           |
| 2018 | 245,564           | 2000 | 239,105           | 1982 | 256,107           |
| 2017 | 244,804           | 1999 | 235,973           | 1981 | 245,029           |
| 2016 | 250,653           | 1998 | 229,176           | 1980 | 273,326           |
| 2015 | 258,208           | 1997 | 227,596           | 1979 | 281,704           |
| 2014 | 269,514           | 1996 | 221,162           | 1978 | 338,328           |
| 2013 | 270,163           | 1995 | 216,453           | 1977 | No report         |
| 2012 | 272,149           | 1994 | 223,433           | 1976 | 355,160           |
| 2011 | 273,732           | 1993 | 222,025           | 1975 | No Report         |
| 2010 | 272,890           | 1992 | 229,908           | 1974 | 319,048           |
| 2009 | 267,378           | 1991 | 230,673           | 1973 | No Report         |
| 2008 | 259,688           | 1990 | 233,856           | 1972 | 265,039           |
| 2007 | 257,246           | 1989 | 242,064           | 1971 | No Report         |
| 2006 | 251,534           | 1988 | 246,771           | 1970 | 228,681           |
| 2005 | 243,009           | 1987 | 251,281           |      |                   |



# Anomalies in the mid and late 70's!

Episode  
38-29

- Gorms, I've has known you long enough to know this anomaly from 1974 to 1978 has been a catalyst to have you investigate it.
  - How could you find anyone that compiled this data?
    - What did you find?
      - Any reasons?



# Putting stats skills to work to help solve this riddle

Episode  
38-30

- There was no way to track down the person(s) that compiled this data or the supervisors. How many people still have the same job from 1974 to 2024? Even if we tracked them down, their memories would have faded over time.
- Gorms dove deep into the numbers & found large discrepancies from 1978 to 1979 both nationally and specifically in wrestling.
- There was no historical equivalent of Covid in 1978-79, even if there was, we would have seen a spike after it. There must have been a methodology change.



Can MatStats provide some examples in states numbers to show why the numbers were questioned?

Too many duplicate numbers and data that ends in zero for a stats guy not to question these numbers.

Episode  
38-31

| State            | 1976    | 1978    | 1979    | 1980    | 1981    |
|------------------|---------|---------|---------|---------|---------|
| CA               | 26,780  | 26,780  | 21,390  | 21,390  | 25,405  |
| IL               | 21,900  | 12,000  | 11,529  | 10,152  | 9,984   |
| NY               | 18,228  | 18,180  | 17,490  | 18,180  | 18,760  |
| OH               | 31,469  | 32,996  | 20,507  | 20,647  | 18,815  |
| PA               | 31,240  | 32,520  | 21,138  | 21,138  | 16,128  |
| WI               | 20,084  | 20,429  | 10,444  | 10,444  | 9,870   |
| Tot Top 6        | 149,701 | 142,905 | 102,498 | 101,951 | 98,962  |
| % top 6 of Nat'l | 42.2%   | 42.2%   | 36.4%   | 37.3%   | 40.4%   |
| National         | 355,160 | 338,328 | 281,704 | 273,326 | 245,029 |



Can MatStats breakdown the numbers for boys wrestling from 1978 to 1979?

From the NFHS numbers, the wrestling participation decreased -16.7% and teams -10.0% from 1978 to 1979.

Episode  
38-32

| State     | 1978 Participants | 1979 Participants | Delta Participants | % Delta Participants | State     | 1978 Teams | 1979 Teams | Delta Teams | % Delta Teams |
|-----------|-------------------|-------------------|--------------------|----------------------|-----------|------------|------------|-------------|---------------|
| CA        | 26,780            | 21,390            | -5,390             | -20.1%               | CA        | 657        | 645        | -12         | -1.8%         |
| IL        | 12,000            | 11,529            | -471               | -3.9%                | IL        | 443        | 427        | -16         | -3.6%         |
| NY        | 18,180            | 17,490            | -690               | -3.8%                | NY        | 551        | 548        | -3          | -0.5%         |
| OH        | 32,996            | 20,507            | -12,489            | -37.9%               | OH        | 929        | 580        | -349        | -37.6%        |
| PA        | 32,520            | 21,138            | -11,382            | -35.0%               | PA        | 813        | 528        | -285        | -35.1%        |
| WI        | 20,429            | 10,444            | -9,985             | -48.9%               | WI        | 453        | 371        | -82         | -18.1%        |
| Tot Top 6 | 142,905           | 102,498           | -40,407            | -28.3%               | Tot Top 6 | 3,846      | 3,099      | -747        | -19.4%        |
| National  | 338,328           | 281,704           | -56,624            | -16.7%               | National  | 9,653      | 8,683      | -970        | -10.0%        |

How did PA lose -285 teams and -11,382 wrestlers from 1978 to 1979 and a Philly HS wrestler (HS '79) not notice anything? Methodology change?  
FYI - Three Mile Island was 3/28/79.



What are the national boy's participation numbers from 1978 to 1979?

Episode  
38-33

The national participation numbers decreased **-657,930 (-15.10%)** from 1978 to 1979.

| Year    | Boys National Participation Total |
|---------|-----------------------------------|
| 1979    | 3,709,512                         |
| 1978    | 4,367,442                         |
| Delta   | <b>-657,930</b>                   |
| % Delta | <b>-15.10%</b>                    |



What does the NFHS say about the change in methodology in 1979?

**The NFHS acknowledges the numbers before 1979 can not be compared to numbers after 1979.**

Episode  
38-34

On the NFHS website under High School Athletics Participation History (1969-2008) tab -

- “NOTE: Due to a more sophisticated information gathering system, figures beginning with the 1979 National Federated Sports Participation Survey are generally lower than surveys of the previous four years. The main factors resulting in this decrease include the listing of United States schools only and the listing of senior high school participation only. Previous survey figures included some Canadian high school participation and some U.S. junior high school participation. No true comparisons can be made between the 1979 survey and the surveys prior thereto.”



# 2024 had the most boys HS wrestlers

Episode  
38-35

- Gorms, you are saying with confidence that using reliable NFHS data that we saw more HS wrestlers in 2024 (291,874) than we ever have.
- What can you tell us about state-by-state breakdowns?



Can MatStats provide a table with the ranked list of all states for all wrestlers in 2024?

Episode  
38-36

# State rankings for all HS wrestlers 2024

| Rank | State | Total HS wrestlers NFHS 2024 | Rank | State | Total HS wrestlers NFHS 2024 | Rank | State | Total HS wrestlers NFHS 2024 |
|------|-------|------------------------------|------|-------|------------------------------|------|-------|------------------------------|
| 1    | CA    | 34248                        | 18   | AZ    | 7707                         | 35   | NV    | 2540                         |
| 2    | TX    | 23075                        | 19   | WI    | 7543                         | 36   | AR    | 2392                         |
| 3    | OH    | 16800                        | 20   | KS    | 7498                         | 37   | NM    | 2382                         |
| 4    | IL    | 15347                        | 21   | OK    | 7228                         | 38   | WV    | 2287                         |
| 5    | PA    | 14165                        | 22   | CO    | 7181                         | 39   | MT    | 2224                         |
| 6    | NJ    | 13248                        | 23   | OR    | 6983                         | 40   | HI    | 1808                         |
| 7    | NY    | 12824                        | 24   | NE    | 6699                         | 41   | WY    | 1725                         |
| 8    | MI    | 11814                        | 25   | MD    | 6066                         | 42   | SD    | 1675                         |
| 9    | WA    | 11706                        | 26   | AL    | 6029                         | 43   | ND    | 1494                         |
| 10   | NC    | 11317                        | 27   | TN    | 6025                         | 44   | AK    | 1308                         |
| 11   | FL    | 10844                        | 28   | SC    | 5958                         | 45   | RI    | 1225                         |
| 12   | GA    | 10702                        | 29   | UT    | 5357                         | 46   | DE    | 1021                         |
| 13   | MO    | 10653                        | 30   | MA    | 5295                         | 47   | ME    | 1006                         |
| 14   | IA    | 9887                         | 31   | KY    | 3992                         | 48   | NH    | 1005                         |
| 15   | IN    | 9027                         | 32   | ID    | 3770                         | 49   | MS    | 791                          |
| 16   | MN    | 8422                         | 33   | CT    | 2826                         | 50   | DC    | 252                          |
| 17   | VA    | 8306                         | 34   | LA    | 2574                         | 51   | VT    | 93                           |

Arithmetic mean for all 50 states + DC = 6987.



Can MatStats provide a table with the ranked list of all states for boys' wrestlers in 2024?

Episode  
38-37

# State rankings for boys HS wrestlers 2024

| Rank | State | Boys HS wrestlers NFHS 2024 | Rank | State | Boys HS Wrestlers NFHS 2024 | Rank | State | Boys HS wrestlers NFHS 2024 |
|------|-------|-----------------------------|------|-------|-----------------------------|------|-------|-----------------------------|
| 1    | CA    | 26327                       | 18   | WI    | 6861                        | 35   | NV    | 2132                        |
| 2    | TX    | 16639                       | 19   | AZ    | 6185                        | 36   | WV    | 2074                        |
| 3    | IL    | 13254                       | 20   | CO    | 6067                        | 37   | AR    | 1809                        |
| 4    | OH    | 12420                       | 21   | SC    | 5928                        | 38   | NM    | 1728                        |
| 5    | PA    | 12025                       | 22   | OK    | 5709                        | 39   | MT    | 1643                        |
| 6    | NJ    | 11579                       | 23   | OR    | 5455                        | 40   | SD    | 1352                        |
| 7    | NY    | 11565                       | 24   | AL    | 5393                        | 41   | WY    | 1313                        |
| 8    | MI    | 10598                       | 25   | MD    | 5297                        | 42   | HI    | 1266                        |
| 9    | NC    | 9885                        | 26   | KS    | 5132                        | 43   | RI    | 1132                        |
| 10   | GA    | 9142                        | 27   | TN    | 5093                        | 44   | ND    | 1121                        |
| 11   | FL    | 9066                        | 28   | NE    | 4995                        | 45   | AK    | 1100                        |
| 12   | WA    | 8876                        | 29   | MA    | 4948                        | 46   | DE    | 966                         |
| 13   | MO    | 8014                        | 30   | UT    | 3932                        | 47   | NH    | 923                         |
| 14   | IN    | 7820                        | 31   | ID    | 3055                        | 48   | ME    | 875                         |
| 15   | VA    | 7637                        | 32   | KY    | 3000                        | 49   | MS    | 711                         |
| 16   | MN    | 7418                        | 33   | CT    | 2595                        | 50   | DC    | 228                         |
| 17   | IA    | 6952                        | 34   | LA    | 2559                        | 51   | VT    | 80                          |

Arithmetic mean for all 50 states + DC = 5723.



Can MatStats provide a table with the ranked list of all states for girls' wrestlers in 2024?

Episode  
38-38

# State rankings for girls HS wrestlers 2024

| Rank | State | Girls' HS wrestlers<br>NFHS 2024 | Rank | State | Girls' HS wrestlers<br>NFHS 2024 | Rank | State | Girls' HS wrestlers<br>NFHS 2024 |
|------|-------|----------------------------------|------|-------|----------------------------------|------|-------|----------------------------------|
| 1    | CA    | 7921                             | 18   | UT    | 1425                             | 35   | WY    | 412                              |
| 2    | TX    | 6436                             | 19   | NY    | 1259                             | 36   | NV    | 408                              |
| 3    | OH    | 4380                             | 20   | MI    | 1216                             | 37   | ND    | 373                              |
| 4    | IA    | 2935                             | 21   | IN    | 1207                             | 38   | MA    | 347                              |
| 5    | WA    | 2830                             | 22   | CO    | 1114                             | 39   | SD    | 323                              |
| 6    | MO    | 2639                             | 23   | MN    | 1004                             | 40   | CT    | 231                              |
| 7    | KS    | 2366                             | 24   | KY    | 992                              | 41   | WV    | 213                              |
| 8    | PA    | 2140                             | 25   | TN    | 932                              | 42   | AK    | 208                              |
| 9    | IL    | 2093                             | 26   | MD    | 769                              | 43   | ME    | 131                              |
| 10   | FL    | 1778                             | 27   | ID    | 715                              | 44   | RI    | 93                               |
| 11   | NE    | 1704                             | 28   | WI    | 682                              | 45   | NH    | 82                               |
| 12   | NJ    | 1669                             | 29   | VA    | 669                              | 46   | MS    | 80                               |
| 13   | GA    | 1560                             | 30   | NM    | 654                              | 47   | DE    | 55                               |
| 14   | OR    | 1528                             | 31   | AL    | 636                              | 48   | SC    | 30                               |
| 15   | AZ    | 1522                             | 32   | AR    | 583                              | 49   | DC    | 24                               |
| 16   | OK    | 1519                             | 33   | MT    | 581                              | 50   | LA    | 15                               |
| 17   | NC    | 1432                             | 34   | HI    | 542                              | 51   | VT    | 13                               |

Arithmetic mean for all 50 states + DC = 1264.



Can MatStats provide a table with the ranked list of all states for the growth in boys wrestling from 2014 to 2024?

# State Rankings of boys' growth rate of participants from 2014 to 2024.

Episode  
38-39

| Rank | state | % growth boys' wrestlers 2014 to 2024 | Rank | State | % growth boys' wrestlers 2014 to 2024 | Rank | State | % growth boys' wrestlers 2014 to 2024 |
|------|-------|---------------------------------------|------|-------|---------------------------------------|------|-------|---------------------------------------|
| 1    | MS    | 2744.0%                               | 18   | WA    | 14.6%                                 | 35   | IA    | 2.6%                                  |
| 2    | AL    | 145.6%                                | 19   | MT    | 14.4%                                 | 36   | AZ    | 2.2%                                  |
| 3    | AR    | 89.0%                                 | 20   | ND    | 13.8%                                 | 37   | FL    | 1.7%                                  |
| 4    | OK    | 58.2%                                 | 21   | NJ    | 12.7%                                 | 38   | SD    | 0.8%                                  |
| 5    | KY    | 50.1%                                 | 22   | VA    | 11.1%                                 | 39   | KS    | 0.0%                                  |
| 6    | TX    | 46.6%                                 | 23   | MD    | 10.5%                                 | 40   | DC    | -1.7%                                 |
| 7    | LA    | 43.5%                                 | 24   | NE    | 10.5%                                 | 41   | WI    | -4.0%                                 |
| 8    | WV    | 34.5%                                 | 25   | OR    | 10.1%                                 | 42   | CA    | -4.1%                                 |
| 9    | RI    | 31.8%                                 | 26   | MO    | 10.1%                                 | 43   | CT    | -5.0%                                 |
| 10   | ID    | 29.8%                                 | 27   | MA    | 9.4%                                  | 44   | NM    | -6.4%                                 |
| 11   | NH    | 25.7%                                 | 28   | ME    | 9.1%                                  | 45   | MN    | -9.9%                                 |
| 12   | PA    | 23.2%                                 | 29   | OH    | 8.7%                                  | 46   | NV    | -11.9%                                |
| 13   | WY    | 20.9%                                 | 30   | GA    | 6.3%                                  | 47   | DE    | -15.1%                                |
| 14   | UT    | 19.2%                                 | 31   | HI    | 5.9%                                  | 48   | NY    | -15.4%                                |
| 15   | CO    | 17.4%                                 | 32   | MI    | 4.1%                                  | 49   | IL    | -17.3%                                |
| 16   | TN    | 17.3%                                 | 33   | IN    | 4.1%                                  | 50   | AK    | -18.6%                                |
| 17   | SC    | 17.1%                                 | 34   | NC    | 3.1%                                  | 51   | VT    | -64.8%                                |

Weighted arithmetic mean for the % growth of boys' wrestlers from 2014 to 2024 = 8.30%.



# Correlation 101

Episode  
38-40

- Correlation does not prove causation!!
- Correlation is measured by the Pearson coefficient.
- The coefficient goes from +1 to -1.
- +1 indicates a perfect positive linear correlation between two variables.
- 0 indicates no linear correlation between two variables.
- -1 indicates a perfect negative linear correlation between two variables.



What are 3 major reasons that some states have more wrestlers than others?

Three major reason that some states have more wrestlers than others are **population, population, & population.**

Episode  
38-41

## Correlation States - Population

- Boys' participation 2024 & Population 2024 = **+0.901**
- Girls' participation 2024 & Population 2024 = **+0.814**
- Boys' participation 2014 & Population 2014 = **+0.895**



Is there any correlation between boys' participation & boys growth rate?

There is **NO** correlation (**-0.183**) between boys' growth rate & population growth 2014 to 2024.

Episode  
38-42

Correlation States - boys' growth rate & population growth 2014 to 2024

- Boys' participation 2024 & boy's growth rate 2014 to 2024 = **-0.183**



If there is no correlation between boys' growth and population growth, what could be the reason that some states grow, and others do not?

**No correlation between population growth and boys' growth leads Gorms to believe some states are doing the basics better than others.**

Episode  
38-43

- We learned that population and participation numbers is very strong.
- Now we see that there is no correlation between boys' growth & population growth. If it was a true mature vs growth issue, there would be a moderate to strong negative correlation here.
- Gorms believes strongly there is something certain states are doing well.



# Population is a huge factor in huge participation states

Episode  
38-44

- The highly populated states have the most wrestlers.
- However, there is no correlation between boys' growth & population growth. There is something else at play.
- What do we know about wrestlers per capita state by state rankings?



Can MatStats provide the viewers a state ranking of all participants per capita?

Episode  
38-45

# State rankings for all wrestlers per capita

| Rank | State | Total HS wrestlers per 1K state population 2024 | Rank | State | Total HS wrestlers per 1k state population 2024 | Rank | State | Total HS wrestlers per 1K state population 2024 |
|------|-------|---|------|-------|---|------|-------|---|
| 1    | NE    | 3.370   | 18   | IN    | 1.310   | 35   | VA    | 0.949   |
| 2    | IA    | 3.076   | 19   | WV    | 1.295   | 36   | CA    | 0.881   |
| 3    | WY    | 2.944   | 20   | WI    | 1.272   | 37   | KY    | 0.879   |
| 4    | KS    | 2.547   | 21   | HI    | 1.264   | 38   | TN    | 0.836   |
| 5    | MT    | 1.947   | 22   | IL    | 1.226   | 39   | NV    | 0.791   |
| 6    | ND    | 1.896   | 23   | CO    | 1.214   | 40   | CT    | 0.780   |
| 7    | ID    | 1.894   | 24   | MI    | 1.177   | 41   | AR    | 0.774   |
| 8    | SD    | 1.805   | 25   | AL    | 1.172   | 42   | MA    | 0.754   |
| 9    | AK    | 1.784   | 26   | NM    | 1.126   | 43   | TX    | 0.745   |
| 10   | OK    | 1.768   | 27   | RI    | 1.116   | 44   | ME    | 0.718   |
| 11   | MO    | 1.714   | 28   | PA    | 1.094   | 45   | NH    | 0.715   |
| 12   | OR    | 1.652   | 29   | SC    | 1.090   | 46   | NY    | 0.659   |
| 13   | UT    | 1.551   | 30   | NC    | 1.031   | 47   | LA    | 0.565   |
| 14   | WA    | 1.493   | 31   | AZ    | 1.028   | 48   | FL    | 0.472   |
| 15   | MN    | 1.462   | 32   | MD    | 0.979   | 49   | DC    | 0.367   |
| 16   | OH    | 1.422   | 33   | DE    | 0.978   | 50   | MS    | 0.269   |
| 17   | NJ    | 1.421   | 34   | GA    | 0.960   | 51   | VT    | 0.144   |

Weighted arithmetic mean for total HS wrestlers per state 1K population 2024 = 1.059.



Can MatStats provide the viewers a state ranking of boys' participants per capita?

# State rankings for boys' wrestlers per capita

Episode  
38-46

| Rank | State | Boys HS wrestlers per 1K state population 2024 | Rank | State | Boys HS wrestlers per 1K state population 2024 | Rank | State | Boys HS wrestlers per 1K state population 2024 |
|------|-------|--|------|-------|--|------|-------|--|
| 1    | NE    | 2.513  | 18   | IN    | 1.135  | 35   | NM    | 0.817  |
| 2    | WY    | 2.241  | 19   | WA    | 1.132  | 36   | CT    | 0.716  |
| 3    | IA    | 2.163  | 20   | SC    | 1.085  | 37   | TN    | 0.707  |
| 4    | KS    | 1.743  | 21   | IL    | 1.059  | 38   | MA    | 0.705  |
| 5    | ID    | 1.535  | 22   | MI    | 1.055  | 39   | CA    | 0.677  |
| 6    | AK    | 1.501  | 23   | OH    | 1.051  | 40   | NV    | 0.664  |
| 7    | SD    | 1.457  | 24   | AL    | 1.049  | 41   | KY    | 0.661  |
| 8    | MT    | 1.439  | 25   | RI    | 1.031  | 42   | NH    | 0.657  |
| 9    | ND    | 1.423  | 26   | CO    | 1.026  | 43   | ME    | 0.624  |
| 10   | OK    | 1.397  | 27   | PA    | 0.928  | 44   | NY    | 0.594  |
| 11   | OR    | 1.291  | 28   | DE    | 0.925  | 45   | AR    | 0.586  |
| 12   | MO    | 1.289  | 29   | NC    | 0.901  | 46   | LA    | 0.561  |
| 13   | MN    | 1.288  | 30   | HI    | 0.885  | 47   | TX    | 0.537  |
| 14   | NJ    | 1.242  | 31   | VA    | 0.873  | 48   | FL    | 0.395  |
| 15   | WV    | 1.174  | 32   | MD    | 0.855  | 49   | DC    | 0.332  |
| 16   | WI    | 1.157  | 33   | AZ    | 0.825  | 50   | MS    | 0.242  |
| 17   | UT    | 1.138  | 34   | GA    | 0.820  | 51   | VT    | 0.124  |

Weighted arithmetic mean for boys HS wrestlers per 1K state population 2024 = 0.867.



Can MatStats provide the viewers a state ranking of girls' participants per capita?

# State rankings for girls' wrestlers per capita

Episode  
38-47

| Rank | State | Girls' HS wrestlers per 1K state population 2024 | Rank | State | Girls' HS wrestlers per 1K state population 2024 | Rank | State | Girls' HS wrestlers per 1K state population 2024 |
|------|-------|--|------|-------|--|------|-------|--|
| 1    | IA    | 0.913  | 18   | KY    | 0.219  | 35   | MI    | 0.121  |
| 2    | NE    | 0.857  | 19   | TX    | 0.208  | 36   | WV    | 0.121  |
| 3    | KS    | 0.804  | 20   | CA    | 0.204  | 37   | WI    | 0.115  |
| 4    | WY    | 0.703  | 21   | AZ    | 0.203  | 38   | ME    | 0.093  |
| 5    | MT    | 0.509  | 22   | AR    | 0.189  | 39   | RI    | 0.085  |
| 6    | ND    | 0.473  | 23   | CO    | 0.188  | 40   | FL    | 0.077  |
| 7    | MO    | 0.425  | 24   | NJ    | 0.179  | 41   | VA    | 0.076  |
| 8    | UT    | 0.413  | 25   | IN    | 0.175  | 42   | NY    | 0.065  |
| 9    | HI    | 0.379  | 26   | MN    | 0.174  | 43   | CT    | 0.064  |
| 10   | OK    | 0.372  | 27   | IL    | 0.167  | 44   | NH    | 0.058  |
| 11   | OH    | 0.371  | 28   | PA    | 0.165  | 45   | DE    | 0.053  |
| 12   | OR    | 0.361  | 29   | GA    | 0.140  | 46   | MA    | 0.049  |
| 13   | WA    | 0.361  | 30   | NC    | 0.130  | 47   | DC    | 0.035  |
| 14   | ID    | 0.359  | 31   | TN    | 0.129  | 48   | MS    | 0.027  |
| 15   | SD    | 0.348  | 32   | NV    | 0.127  | 49   | VT    | 0.020  |
| 16   | NM    | 0.309  | 33   | MD    | 0.124  | 50   | SC    | 0.005  |
| 17   | AK    | 0.284  | 34   | AL    | 0.124  | 51   | LA    | 0.003  |

Weighted arithmetic mean for girls HS wrestlers per 1K state population 2024 = 0.192.



Is there any correlation for states between absolute participation numbers and per capita rates?

**There is no correlation between participation numbers and per capita.**

Episode  
38-48

## Correlation States - Per capita

- Boys' HS participation 2024 & Boys per capita 2024 = **-0.047**
- Girls' HS participation 2024 & Girls per capita 2024 = **+0.260**



Iowa has a highest number of per capita girls HS wrestlers.

Can MatStats give us an example to show the viewers?

**IA's girls per 1K capita number (0.91) is almost the same as PA's boys numbers (0.93).**

Episode  
38-49

- The boys per capita HS wrestlers is only slightly higher than IA girls per capita.
- For every 1,000 people PA has 0.93 current boys wrestlers. IA has 0.91 current girls HS wrestlers.
- To put this in perspective if PSU played Iowa in the Big 10 Football championship at a neutral site and had an equal random crowd from PA & IA and the stadium seated 100,000 people, there would be 46 current boys' wrestlers from PA and 45 current girls' wrestlers from IA in the stands.
- **WOW!!!**



# NE, IA, WY, KS, MT, & ND lead the way in per capita participation.

Episode  
38-50

- The same states are in all three tables (NE, IA, WY, KS, MT, & ND).
- They are all smaller populated states. However, there is no correlation between boys' participation numbers and per capita rates (-0.047). Very low correlation for girls (+0.260).
- The questionnaires you sent out do not ask any questions that might help us learn from this stat. Is there anyway in future years we could ask questions that might help us learn?
- Can you educate us on more information you uncovered from the state numbers from the NFHS?



## What is the state-by-state correlation between boys and girls participation numbers?

There is a very large correlation (**+0.861**) between boys and girls participation numbers in 2024. This is no surprise after we found population and participation correlation was also large.

Episode  
38-51

### Correlation States - Boys & Girls

- Boys HS participation 2024 & Girls HS participation = **+0.861**
- Boys' growth rate 2014-2024 & Girls HS participation = -0.111
- There is not enough state by state data in 2014 for girls to compare growth rates from 2014 to 2024 between boys & girls.
- We cannot determine from this if having two sexes help the high numbers or if it just a function of population or both. Since there was a very high correlation between boys' participation numbers and population in 2014 (+0.895) and that was before girls wrestling became common across the country, population is most likely the driving factor.



Is there any correlation state-by-state on participation numbers and the number of 4-year colleges with wrestling teams?

There is **NO** correlation for boys' participation numbers and 4-year colleges with wrestling (**+0.005**), but a moderate for girls (**+.0483**).

Episode  
38-52

## Correlation States - 4-year colleges

- Boys' HS participation 2024 & Men's 4-year college teams 2024 = **+0.005**.
- Girls' HS participation 2024 & Women's 4-year college teams 2024 = **+0.483**.



Is there any correlation for boys' team size and participation numbers?

In 2024 there was a no basic correlation between participation and team size (+0.244), this was reduced from (+0.548) in 2014.

Episode  
38-53

## Correlation States - Team Size

- Boys' HS participation 2024 & Boys' HS team size 2024 = +0.244
- Boys' HS participation 2014 & Boys' HS team size 2014 = +0.548



# Boys & Girls Correlation, 4-year colleges, & team size.

Episode  
38-54

- We cannot realistically link a correlation between boys' & girls' participation numbers, since population is the driving force.
- Boys have no correlation between HS participants and number of 4-year NCAA & NAIA college teams. Girls do have a moderate correlation. This could be a mature vs growth issue.
- Boys HS participants & team size had a drop in correlation from 2014 to 2024.
- What do we know about the growth of boys HS wrestling and the population growth?



Can MatStats give the viewers a ranked table on the states with the highest boys' HS growth - population growth?

# The 'real' growth (control for population growth) of the states in boys' HS participation from 2014 to 2024.

Episode  
38-55

| Rank | State | 2014 to 2024 Boys' growth - pop growth | Rank | State | 2014 to 2024 Boys' growth - pop growth | Rank | State | 2014 to 2024 Boys' growth - pop growth |
|------|-------|--|------|-------|--|------|-------|--|
| 1    | MS    | 2745.8%                                | 18   | CO    | 6.9%                                   | 35   | GA    | -4.1%                                  |
| 2    | AL    | 139.5%                                 | 19   | MD    | 6.9%                                   | 36   | CA    | -4.4%                                  |
| 3    | AR    | 84.9%                                  | 20   | OH    | 6.8%                                   | 37   | CT    | -5.8%                                  |
| 4    | OK    | 52.8%                                  | 21   | VA    | 5.9%                                   | 38   | DC    | -6.0%                                  |
| 5    | KY    | 47.2%                                  | 22   | MA    | 5.3%                                   | 39   | WI    | -7.0%                                  |
| 6    | LA    | 45.5%                                  | 23   | HI    | 5.1%                                   | 40   | NC    | -7.2%                                  |
| 7    | WV    | 39.0%                                  | 24   | NE    | 4.8%                                   | 41   | NM    | -7.8%                                  |
| 8    | TX    | 31.7%                                  | 25   | SC    | 4.0%                                   | 42   | SD    | -8.0%                                  |
| 9    | RI    | 27.7%                                  | 26   | ME    | 3.7%                                   | 43   | AZ    | -9.2%                                  |
| 10   | PA    | 21.9%                                  | 27   | OR    | 3.6%                                   | 44   | FL    | -13.8%                                 |
| 11   | WY    | 20.6%                                  | 28   | WA    | 3.5%                                   | 45   | NY    | -14.0%                                 |
| 12   | NH    | 19.8%                                  | 29   | MI    | 2.8%                                   | 46   | IL    | -14.5%                                 |
| 13   | NJ    | 8.4%                                   | 30   | MT    | 2.8%                                   | 47   | MN    | -15.5%                                 |
| 14   | ID    | 8.0%                                   | 31   | UT    | 1.7%                                   | 48   | AK    | -18.2%                                 |
| 15   | MO    | 7.6%                                   | 32   | IN    | -0.4%                                  | 49   | NV    | -25.0%                                 |
| 16   | TN    | 7.3%                                   | 33   | IA    | -0.8%                                  | 50   | DE    | -26.8%                                 |
| 17   | ND    | 7.2%                                   | 34   | KS    | -1.3%                                  | 51   | VT    | -68.1%                                 |

Weighted Arithmetic mean for boys' growth - population growth 2014 to 2024 = +2.74



Does MatStats have any big takeaways from the chart on real growth?

The growth of HS boys wrestling is not population growth nor mature vs growth states, there is something grassroots or organic at play here.

Episode  
38-56

- It is no surprise that some of the teams on the top are growth states and some on the bottom are mature states. This is purely anecdotal.
- Since the correlation between boys 2024 HS participation & boys growth rate from 2014 to 2024 = **-0.147**.
- This means it is not a mature vs growth issue.
- There is something some states do well to help grow the sport and other states do things poorly.



Are there any other statistical tricks in the MatStats bag that might help us learn from all these numbers?

# SKEW 101

Episode  
38-57

- If the mean (what most people call average) is less than median (as many above as below - with 51 states + DC this is #26) statisticians call this a left skew, so it has a left tail on a graph.
- Because there are more data points above the mean than below, extreme low values brings down the mean.
- The opposite if the median is higher than the mean.
- The question is do you spend more time on the stars or the problem children?



# Left Skewed Graphs in Episode 38

Episode  
38-58

Mean < Median (left Skew)

- Boys HS growth rate 2014 to 2024.
- Total HS participation per 1K state population 2024.
- Boys HS participation per 1K state population 2024.
- True growth - boys HS growth - population growth 2014 to 2024.

In a left skewed graph, it is best to further study the states on the right side (lowest numbers).



Can MatStats provide some examples of a right skewed graphs in this episode?

# Right Skewed Graphs in Episode 38

Episode  
38-59

Mean > Median (Right Skew)

- Boys HS participation 2024
- Girls HS participation 2024.
- Total HS participation 2024.
- Girls HS participation per 1K population 2024.

In a right skewed graph, it is best to further study the states on the right side (highest numbers).



Can Gorms quickly sum up this concept for the non-stats people watching this show?

# Gorms recommendation for which states to send a questionnaire to in 2025.

Episode  
38-60

Without boring the non-stats people are quick list of states that need additional questions in a separate survey in 2025.

- |       |        |        |
|-------|--------|--------|
| 1) AR | 6) IL  | 11) NE |
| 2) CA | 7) KS  | 12) OH |
| 3) FL | 8) MN  | 13) TX |
| 4) IA | 9) MT  | 14) WY |
| 5) ID | 10) NY |        |



# Follow up questions for certain states in 2025 HS survey.

Episode  
38-61

- To find out even more information for our 3<sup>rd</sup> annual HS numbers MatStats show in 2025, we need to ask more questions to help us grow wrestling and send them to the 12 states mentioned previously.
- MatStats is busy formulating these questions for the 2025 survey.
- Tune in next year for some more in depth answers.



Can MatStats give the viewers their Kev's Notes to review what we just learned on this show?

# Episode 38 Kev's Notes #1

Episode  
38-62

- 1) There are currently more NCAA male wrestlers than at any time since at least 1982.
  - 2) The NCWA has gone from 59 teams to 86 teams for 2025.
- 3) In 2024, there were 11,149 HS boys' teams and 291,874 HS boys' participants.
- 4) There appears to have been a change in the methodology at the NFHS from 1978 to 1979, thereby MatStats believes there are more HS male participants in 2024 than ever.
- 5) The boys' HS participation numbers grew at 8.3% from 2014 to 2024, this exceeds the population growth of USA (5.6%) and the growth of all of the boys HS sports (2.4%).



Can MatStats give the viewers their Kev's Notes to review what we just learned on this show?

# Episode 38 Kev's Notes #2

Episode  
38-63

- 6) In 2024 there were 64,257 girls HS wrestlers. This is more than Field Hockey. Wrestling is now the #13 most popular girls HS sport.
- 7) Girls HS wrestling saw a 550% growth from 2014 to 2024.
- 8) The top states for participation per capita for wrestling are IA, KS, MT, NE, ND, & WY.
  - 9) Population is the biggest correlation with wrestling participation.
- 10) MatStats will do this study again in 2025 and MatStats will have additional (grassroots) questions for the future questionnaire to see why some states grow and others do not.



What is the topic next month (Wednesday 12/18/24 3PM EST)?

# Be True To Your School Part 2 of 2.

Episode  
38-64

- Tune In Next Month
  - Same Mat Time
  - Same Mat Channel
- MatStats continues its analysis of HS numbers.
- Part 2 concentrates on the state surveys and questionnaires that the NWCA sent to all 50 states.