

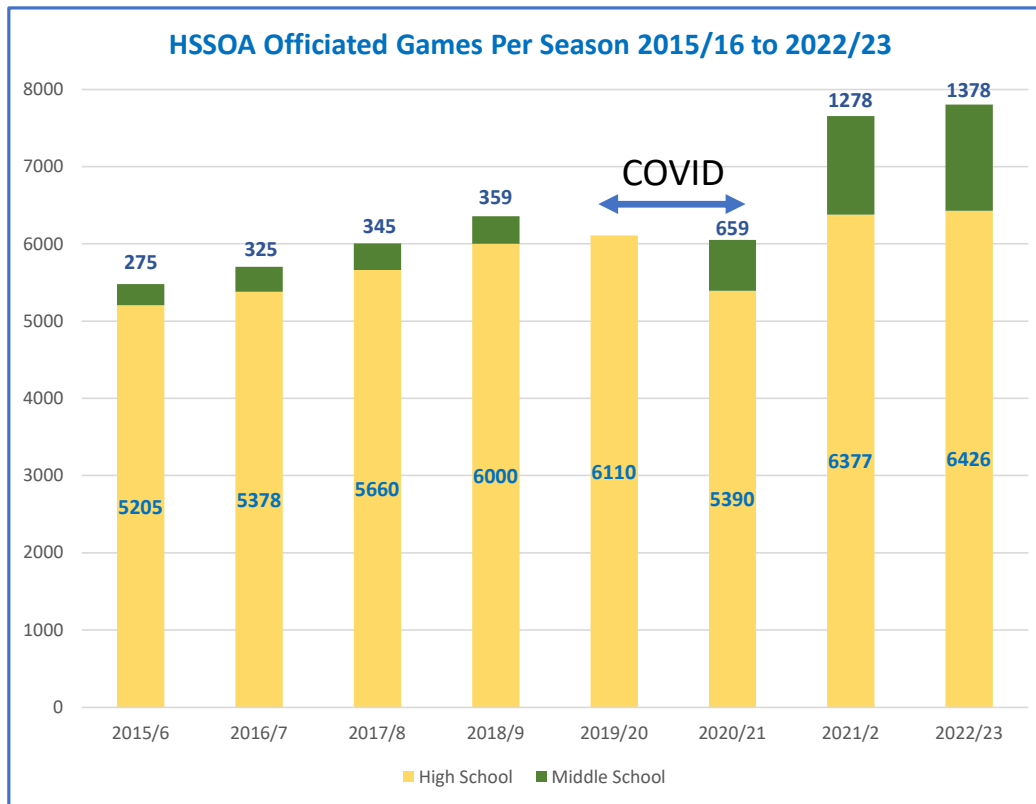
# Analysis & Insight Into HSSOA Soccer Games

July 2023

# Information & Disclaimer

- HSSOA is the high school and middle soccer assigning chapter for referees across greater Houston. It is a large and diverse area with a season that lasts from December until May.
- The information and conclusions contained in this presentation is for informational purposes only and is expressly not intended to be relied upon as advice or in any recommendation of any course of action.
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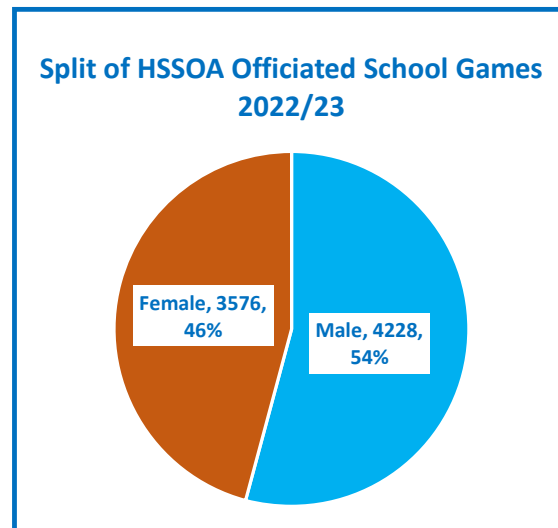
# The Growth of HSSOA Games Continues



- The 7,804 games officiated by HSSOA in 2022/23 represents a 40% increase on 2015/6.
- This represents a recovery from and growth beyond COVID curtailing the 2019/20 season and impacting the 2020/21 season.
- All types of games have seen growth, especially junior varsity high school boys and middle school games.
- Middle schools made up 17% of all games in 2022/23 versus 5% in 2015/6.
- The 12% growth in population, currently 7.4m people, in the HSSOA catchment area is one factor with new schools opening and roles increasing.

# 2022/3 Season Games In Detail

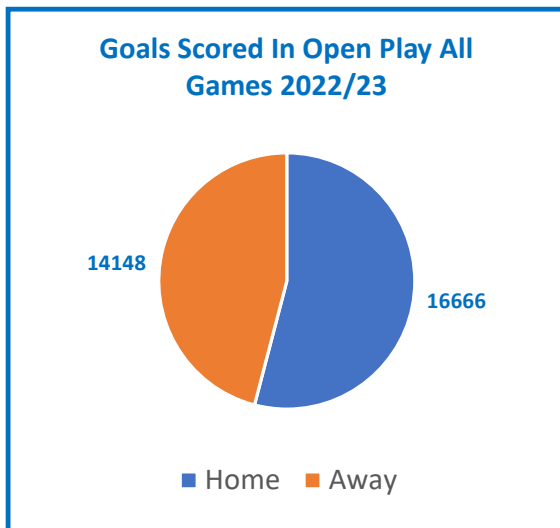
Games	Female
Middle School	684
HS JV B or Below	281
HS JV A	1,077
HS Varsity	1,534
<b>Total</b>	<b>3,576</b>



Games	Male
Middle School	694
HS JV B or Below	687
HS JV A	1,155
HS Varsity	1,692
<b>Total</b>	<b>4,228</b>

Male and female game numbers are very similar in middle schools, males play slightly more Junior Varsity A and Varsity games and many more (406) games at Junior Varsity B level and below.

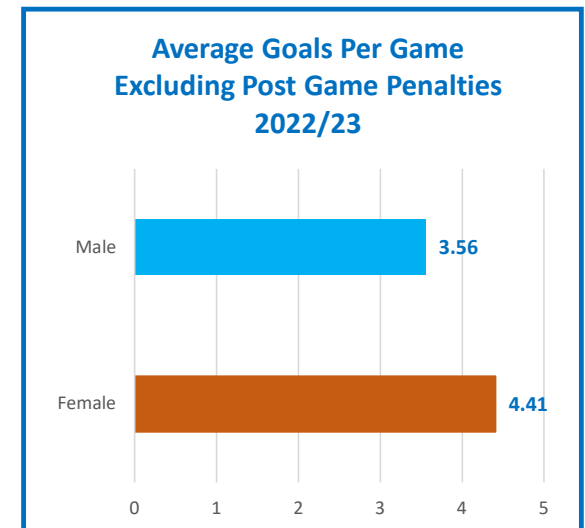
# 2022/3 A Season Of Goals!



30,814 goals were scored at an average of 3.95 goals per game. Home teams averaged 2.14 goals and away teams 1.81.

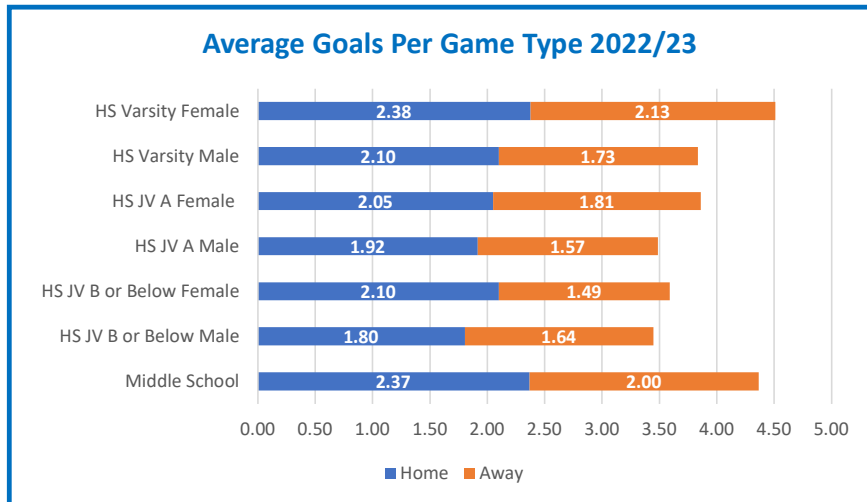


694 after game penalties (kicks from the mark) were scored in 112 tied game deciding shoot outs.

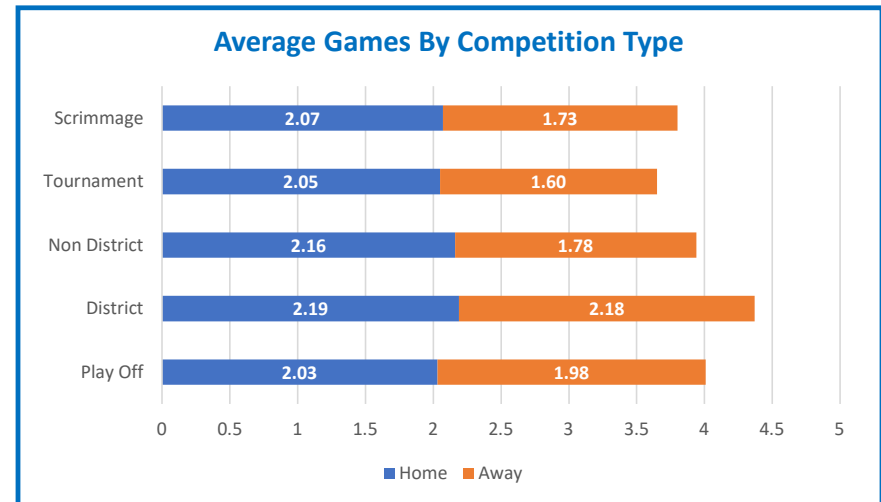


Female games averaged 0.85 goals per game more than males with 4.41 goals per game.

# 2022/3 Goals By Competition



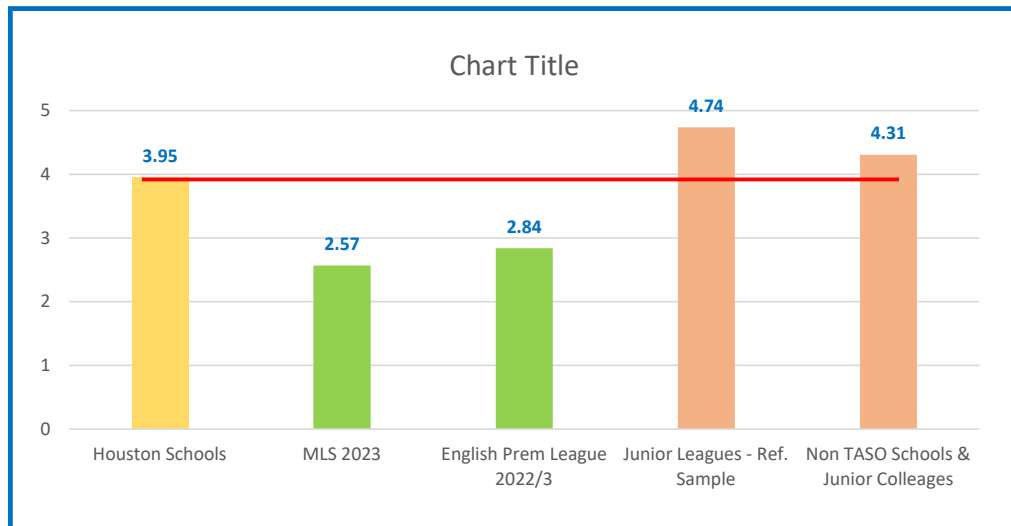
Female scores in all classifications of high school games were higher than male games. High school Varsity female games had the highest scores with middle schools just behind.



District and play off games had the closest scores, they also both had the highest number of goals scored per game, both averaging more than 4 per game.

# Comparisons

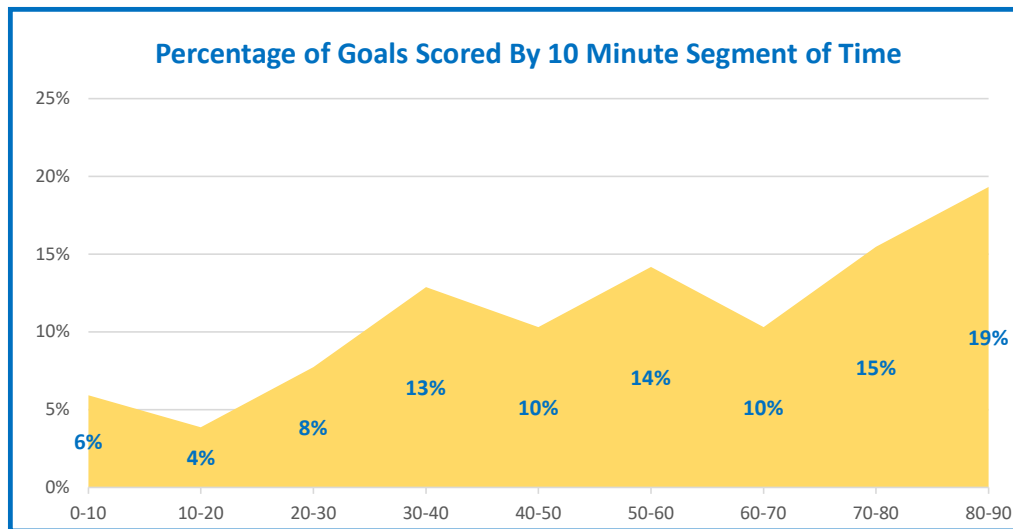
No large scale published studies for high school goals scored have been found so goals scored in the HSSOA catchment area are compared with professional leagues and referee sample statistics as follows.



- School games in the HSSOA catchment have on average more goals scored than any reasonable standard professional games.
- A wide range of professional leagues showed average goals scored between 2.5 and 3 per game. HSSOA schools were one more goal per game above this.
- A comparison was made with a medium sized sample of junior league games and slightly smaller sample of non-HSSOA school games with players of a comparable age. This showed those two samples to have a higher average goals per game scored.

# Goal Scoring Times

No information on goal scoring times have been recorded. This information is from a private study of 275 HSSOA catchment area school games in 2021/2 and 2022/3. All goal times were recorded at the time they were scored.

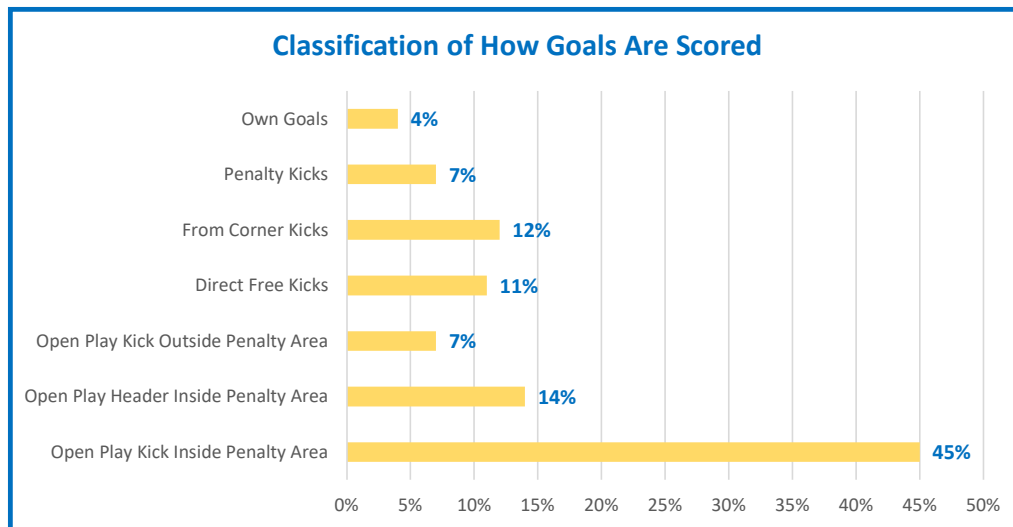


- The first 20 minutes of games saw only 10% of goals scored, the lowest of any period.
- Goals scored rose significantly in the 30<sup>th</sup> to 40<sup>th</sup> minutes. Minutes 50 to 60 saw goals scored increase before a peak in the last 20 minutes where 34% of goals were scored.
- Anecdotal reasons for the late goals appeared to be teams making efforts to win or equalize in close games and player fatigue.
- A study of professional games showed much flatter distribution of goals scored. For non HSSOA teams of a comparable age a similar but less pronounced distribution was found with for example, 26% of goals in the last 20 minutes.



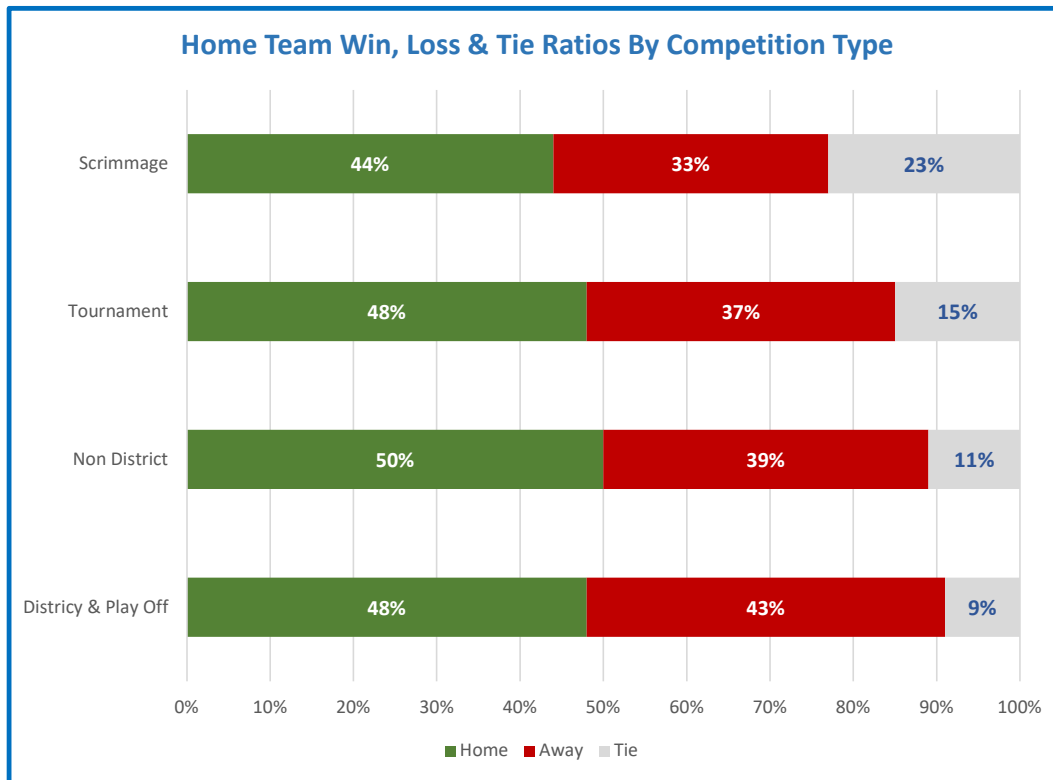
# Types of Goals Scored

No information on types of goal scored have been recorded. This information is from a private study of 275 HSSOA catchment area school games in 2021/2 and 2022/3. All goal types were recorded at the time they were scored.



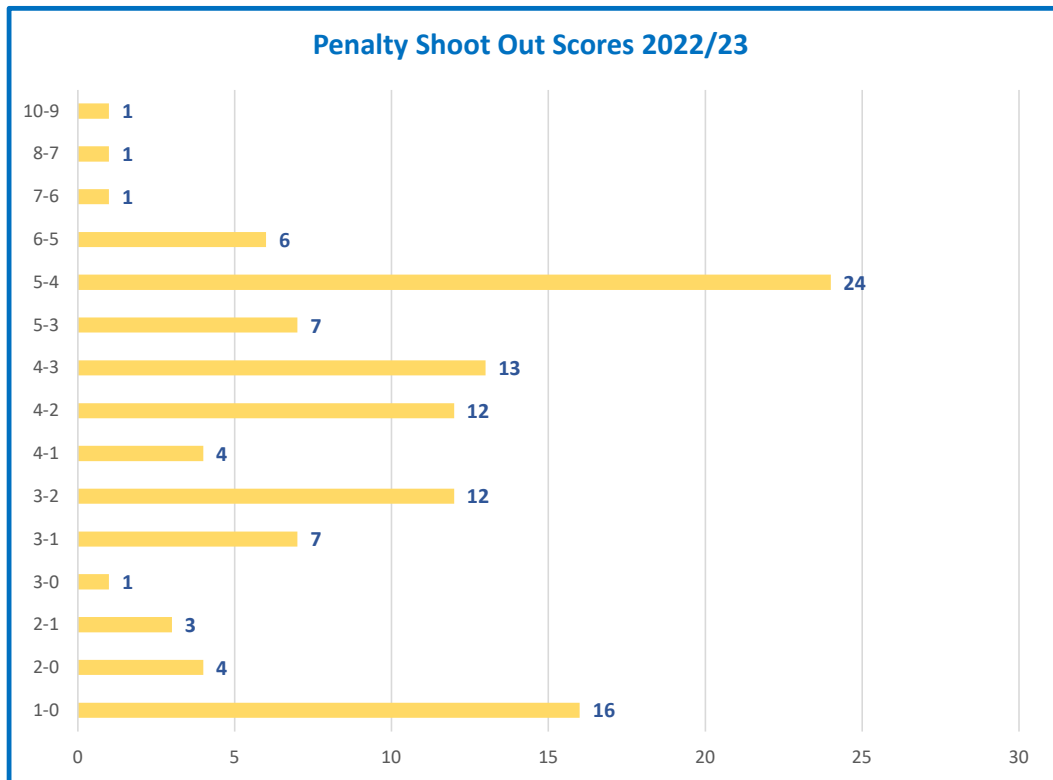
- 45% of goals were kicks taken inside the penalty area from open play, that were not as a result of a free kick or corner. This was a higher percentage, 52% in female games.
- Headers from within the penalty from open play were 14%, significantly higher for males than females.
- Corners and direct free kicks were especially dangerous opportunities for teams.
- Penalty kicks were 7% of goals, over 80% of penalties awarded were scored.
- A study of non HSSOA teams of a comparable age a similar saw higher percentages from direct free kicks and corners.

# 2022/3 Competition Win, Tie & Loss Ratios



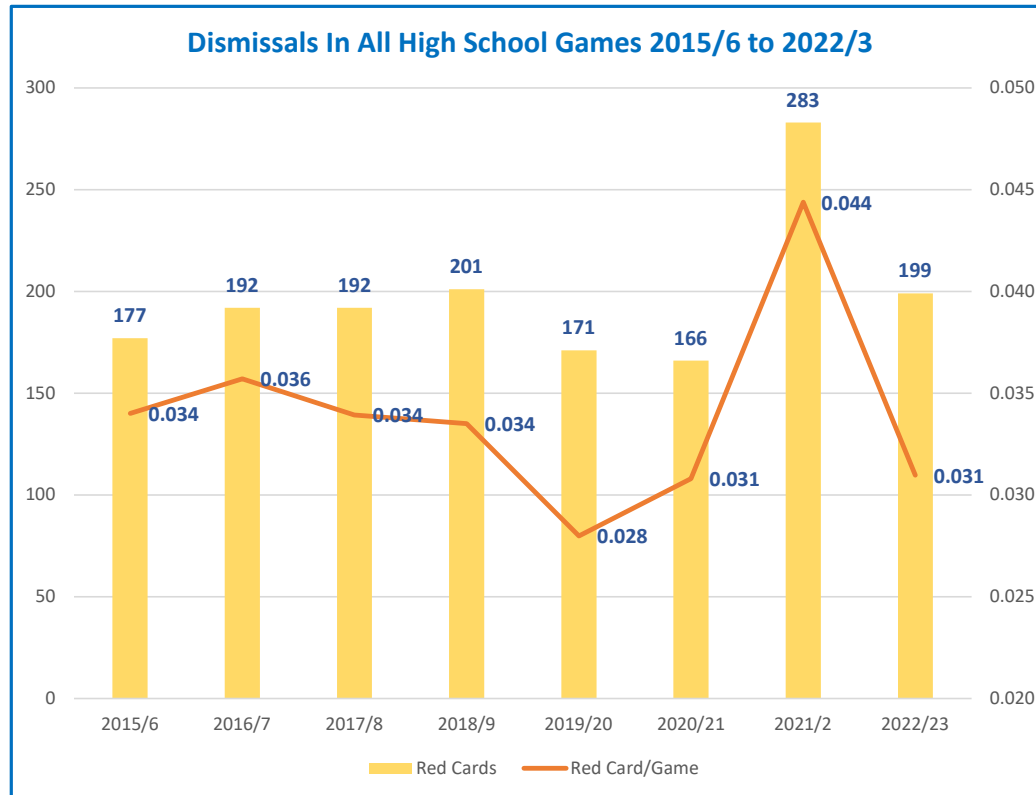
- District and play-off games were the closest in terms of home win and away win ratio with comparatively few ties.
- Non-district games also had relatively few ties but with a higher home win percentage.
- Tournament games saw 15% ties with the same percentage of home wins as district and play off games. This will be impacted by some home teams playing at neutral out of school district locations.
- Scrimmage games saw by far the highest number of ties perhaps reflecting their less competitive nature at the start of the season.

# 2022/3 Penalty Shoots



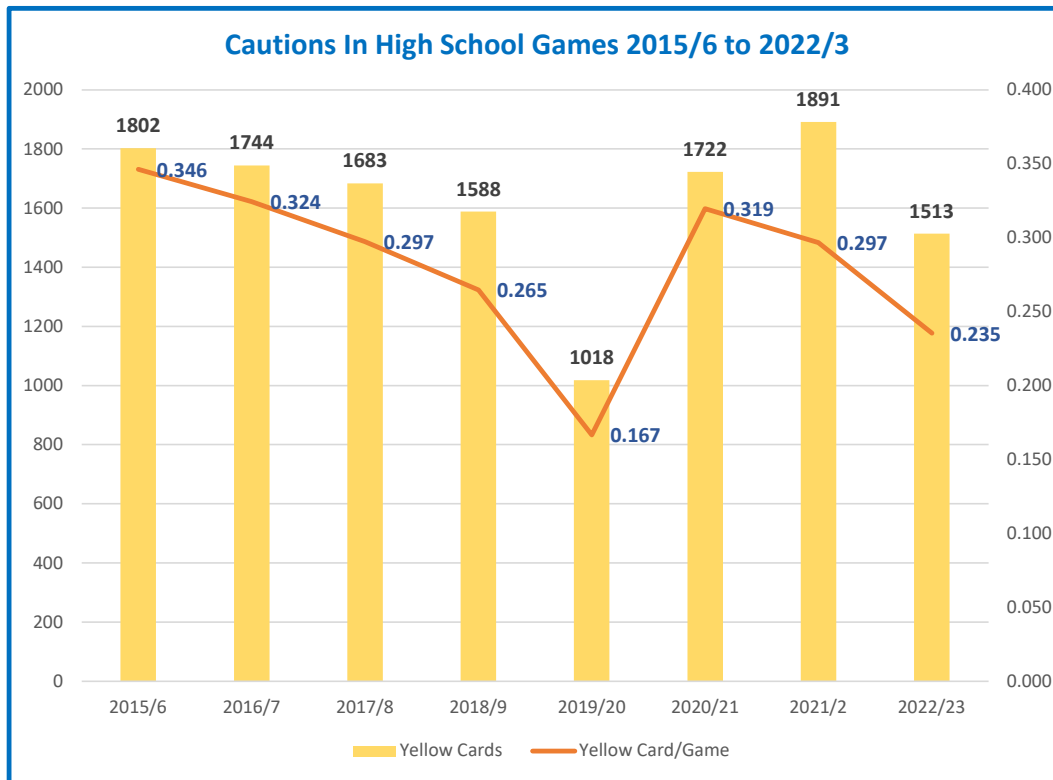
- Penalty shoot outs were used in just 1.5% of games during 2022/23.
- The average shoot out saw 6.2 goals scored.
- Excluding sudden death shoot outs the average was 5.6, 4.4 penalties were missed or not taken.
- 16 shootouts were won by one goal to zero. One team did not score in 21 shootouts.
- In an exciting shootout between Houston ISD schools Scarborough High School beat Washington High School 10-9 after a 3-3 tie.
- 43 female games went to penalties, 38% of the total.
- 9 shoot outs went to sudden death penalties, 8% of the total.

# 2022/3 Dismissals Reverted To Average Levels



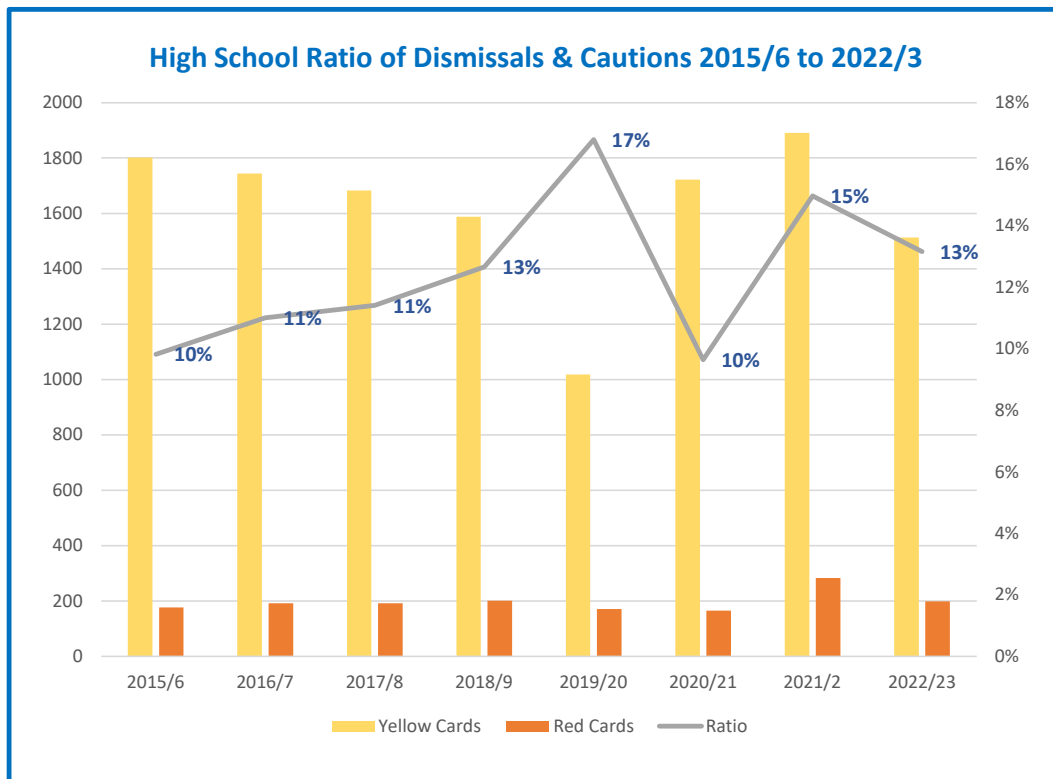
- 2022/23 saw the high school dismissal rate per game revert to close to its eight-year average, being 0.031 per game.
- Despite the number of games increasing dismissals fell from 283 to 199.
- This is the joint second lowest level since 2015/6, 2019/20 being the lowest.
- 2021/2, the first full year after the COVID impact saw a significant increase in red cards, 0.044 per game.

# 2022/3 Saw Cautions Further Decline



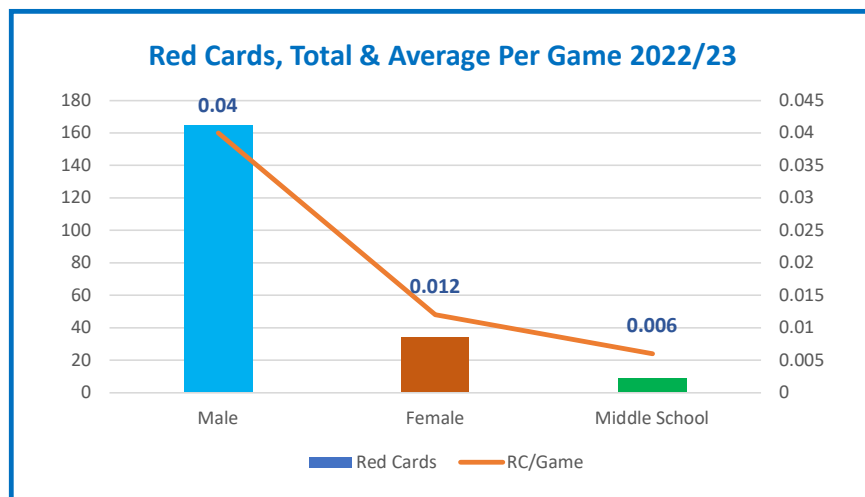
- 2022/23 saw the high school caution rate per game fall for the third year running. This was 0.235 yellow cards per game.
- Despite the number of games increasing slightly dismissals fell by twenty percent from 1,891 to 1,513.
- This is the second lowest level since 2015/6, 2019/20 being the lowest and appearing a significant outlier from other seasons.
- 2021/2, unlike the significant increase in dismissals saw a reduction in in yellow cards, 0.297 per game.

# Ratio of Dismissals to Cautions

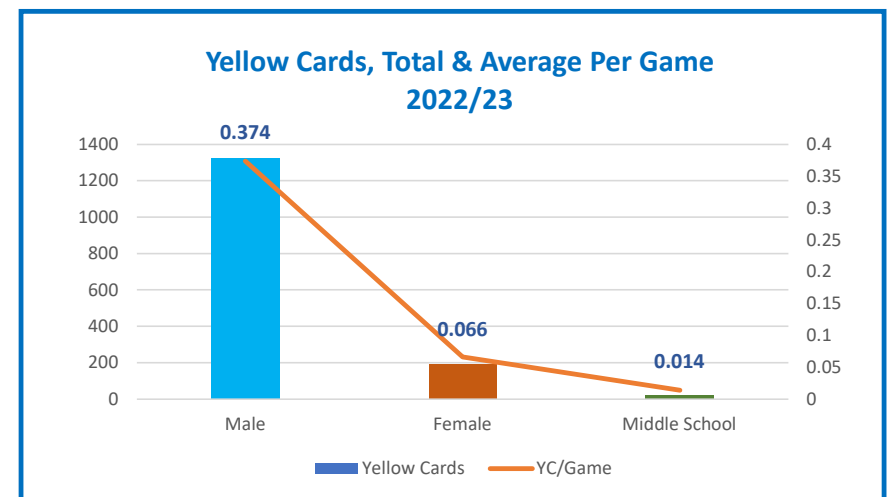


- 2022/23 saw the dismissals to cautions ratio fall from 15% to 13%, a little higher than the pre COVID rate.
- The 2019/20 season was significantly higher, at 17%, than any other year driven by the significant and once off decrease in cautions.
- The 2021/2 season is the second highest driven by the major and once off increase in dismissals.

# Discipline Differs Significantly By Game Type

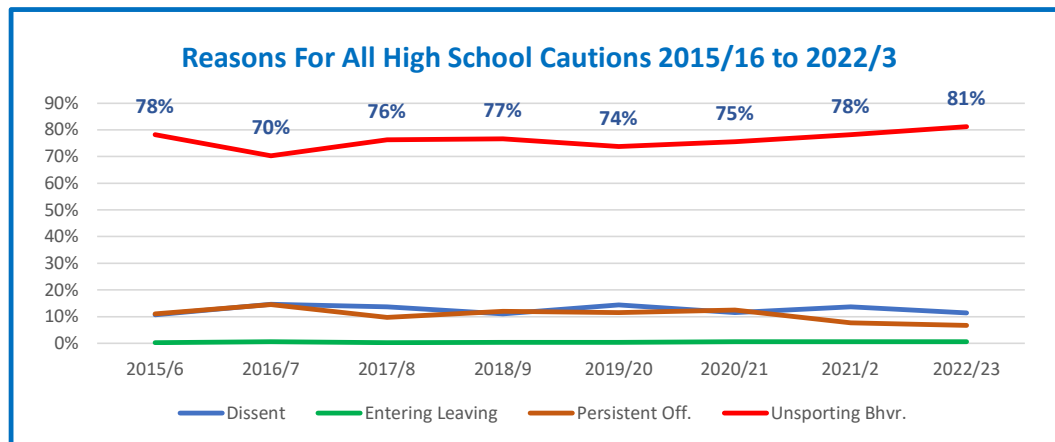


High school males were dismissed 165 times out of a total number of 208 red cards. This was 79% of the total though they only played 45% of the games.



High school males were cautioned 1,322 times out of a total number of 1,533 yellow cards. This was 86% of the total in their 45% of the games.

# Reasons For Cautions Remain Very Consistent



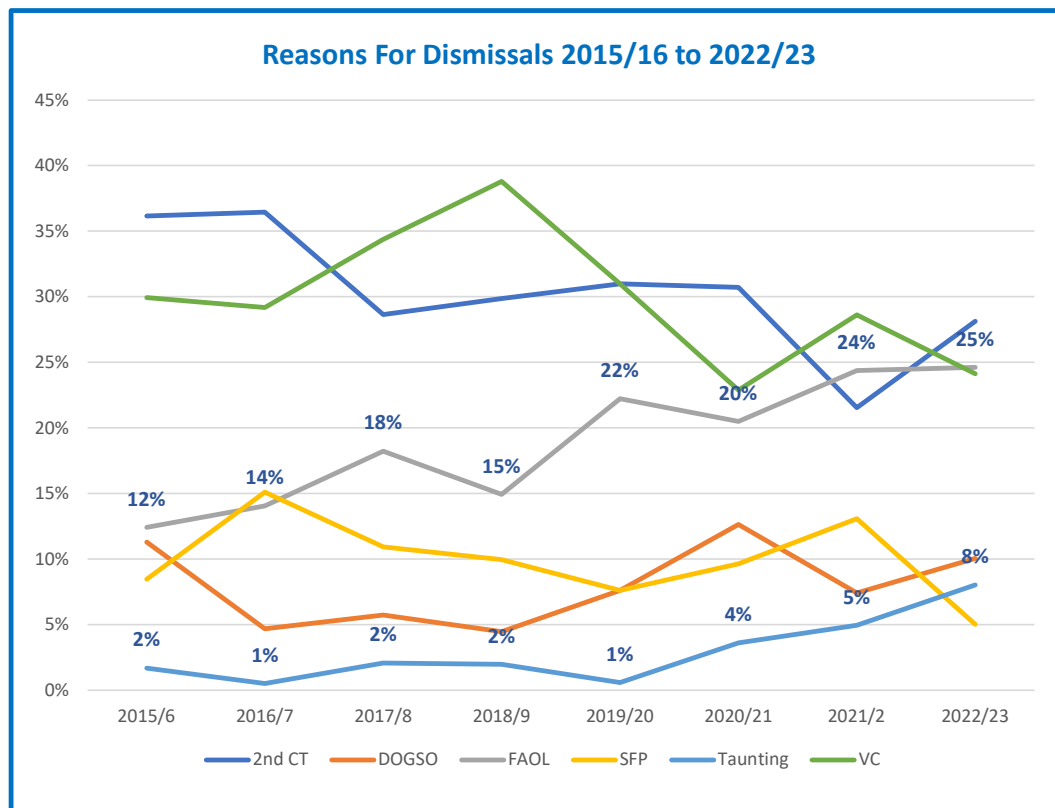
- 2022/23 saw cautions for unsporting behavior tick up to 81%, from 78% the previous year, its highest percentage ever.
- Dissent, cautions were down from 14% to 11% also the same as 2015/6.
- Persistent offences were at their lowest level ever, 7%, down from 11% in 2015/6.
- Entering and leaving the field without permission cautions remain rare.
- There are minor differences between male and females with males having slightly higher percentages of cautions for unsporting behavior versus female with higher percentages of dissent and persistent offences.

Female	2015/6	2022/3
Dissent	16%	12%
Enter/Leaving	0%	0%
Persistent Off.	11%	9%
Unsport. Bhvr.	73%	79%

Male	2015/6	2022/3
Dissent	10%	11%
Enter/Leaving	0%	1%
Persistent Off.	11%	6%
Unsport. Bhvr.	79%	82%

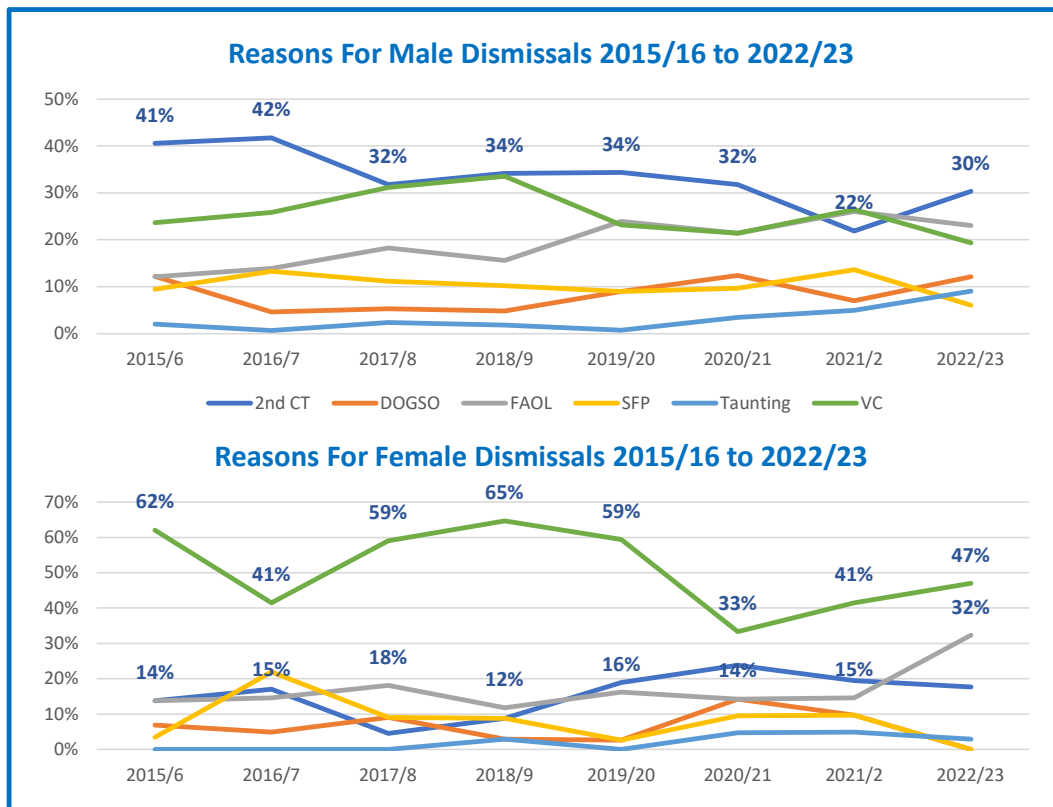


# Dismissal Reasons Are Transitioning Quickly



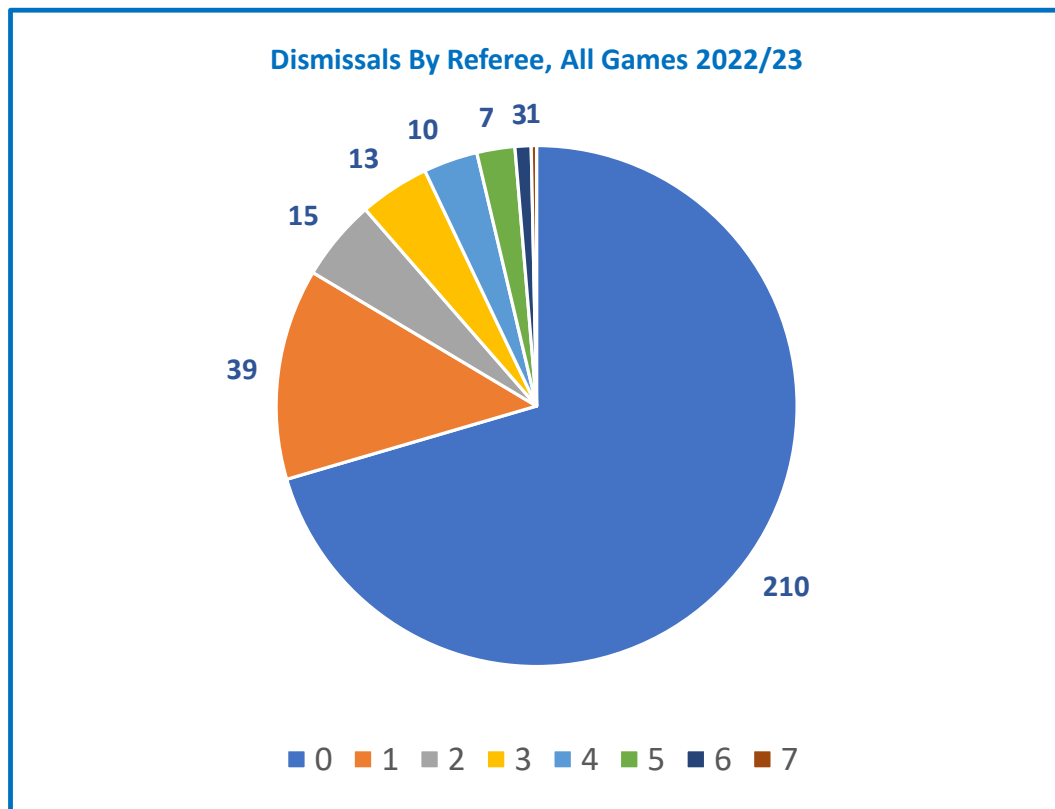
- Two clear trends continued in 2022/23 with the continued rise of dismissals for foul, abusive and offensive language and taunting.
- Over the 8-year period dismissals for foul, abusive and offensive language rose from 12% to 25% and taunting from 2% to 8%.
- Correspondingly dismissals for serious foul play and violent conduct have decreased.
- Taunting may be explained by the greater focus on that in recent years.
- Foul, abusive and offensive language shows a clear trend of greater swearing at opponents and officials with the growth starting from the time the COVID pandemic began, and it has not subsided after that.

# Dismissal Reasons Differ By Gender



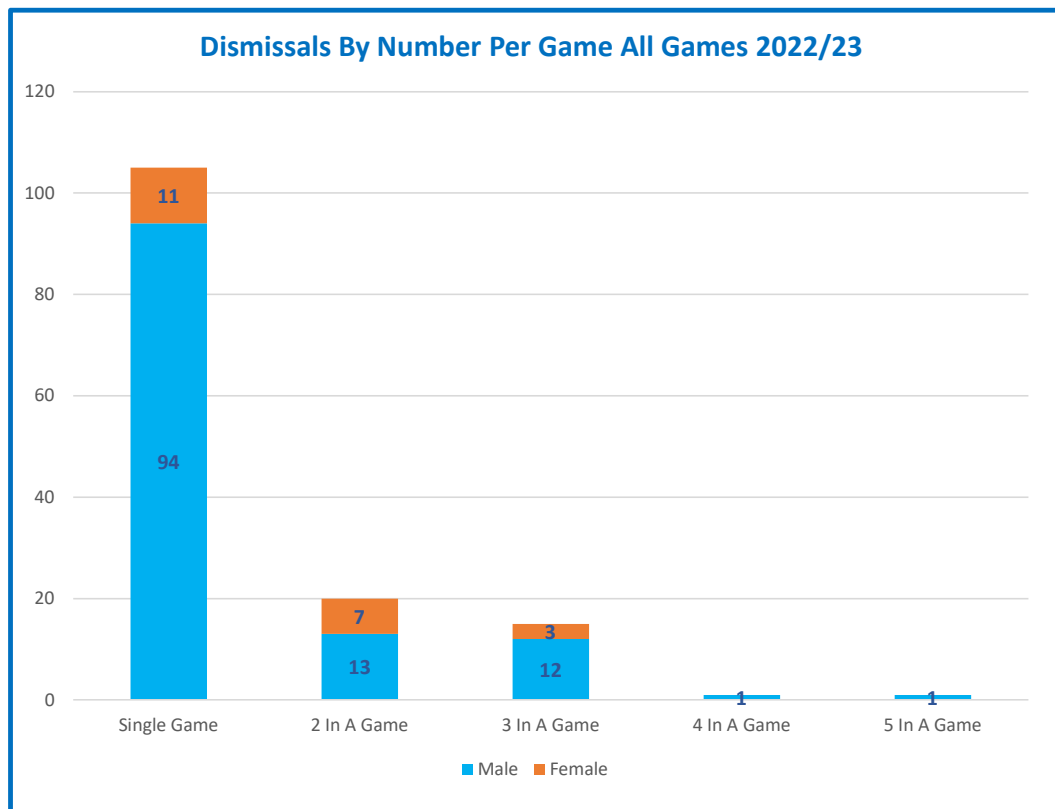
- Male and female dismissal reasons differ significantly. Note that female dismissals are at a significantly lower rate than males.
- Though in significant decline, 62% to 47% over the 8-year period violent conduct is far higher for females than males at 19%.
- Foul, abusive and offensive language dismissals by females is 32% in 2022/23 more than double that of the previous season. For males this fell from 26% to 23%.
- Taunting by males rose from 5% to 9%, treble the 3% of females that fell year on year.
- At 30% and though in long-term decline, males receiving 2<sup>nd</sup> cautions was almost double that of females at 18%.

# Dismissals By Referee



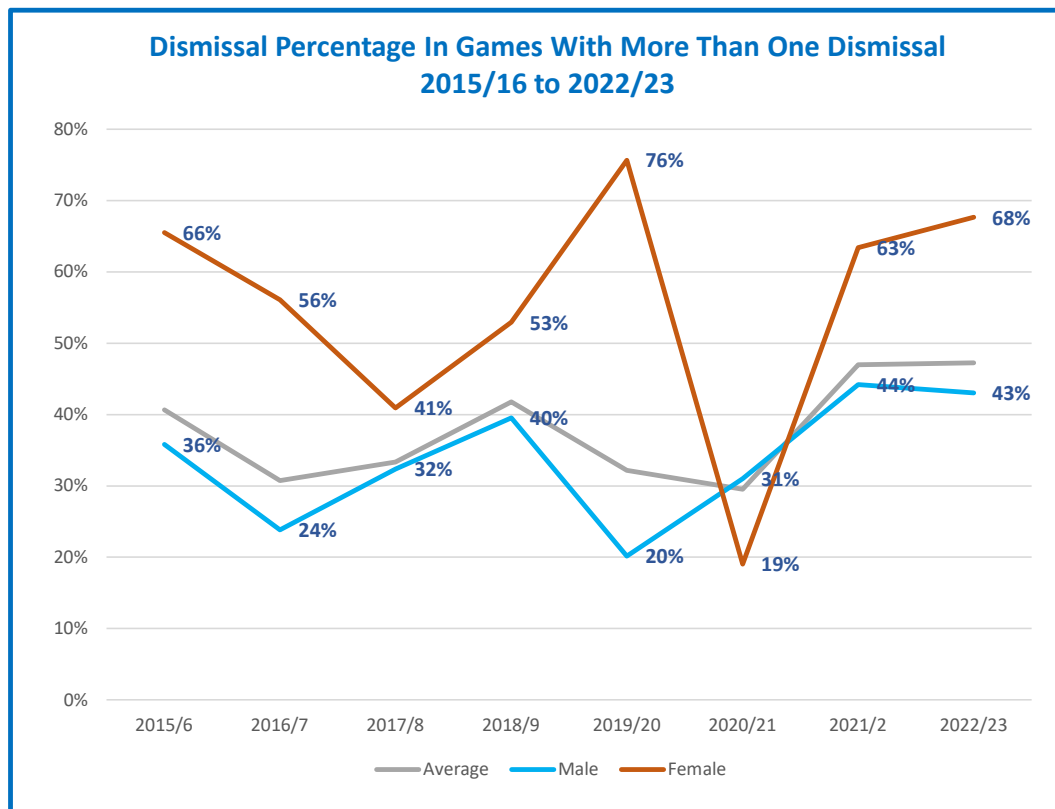
- Less than a third of HSSOA officials dismissed a high school or middle school player in 2022/23.
- Of 298 active HSSOA officials only 88 of those, 30%, made a dismissal during the season.
- 39 of those, 13%, made one dismissal.
- 11 of those, 4% made five or more dismissals.
- Only 49, 16%, made two dismissals or more.
- Note where a dual system is operating only one referee would report the dismissal.
- Note that HSSOA has a high concentration of a minority of members undertaking center referee positions in a majority games.

# Dismissal Concentration Varies By Gender



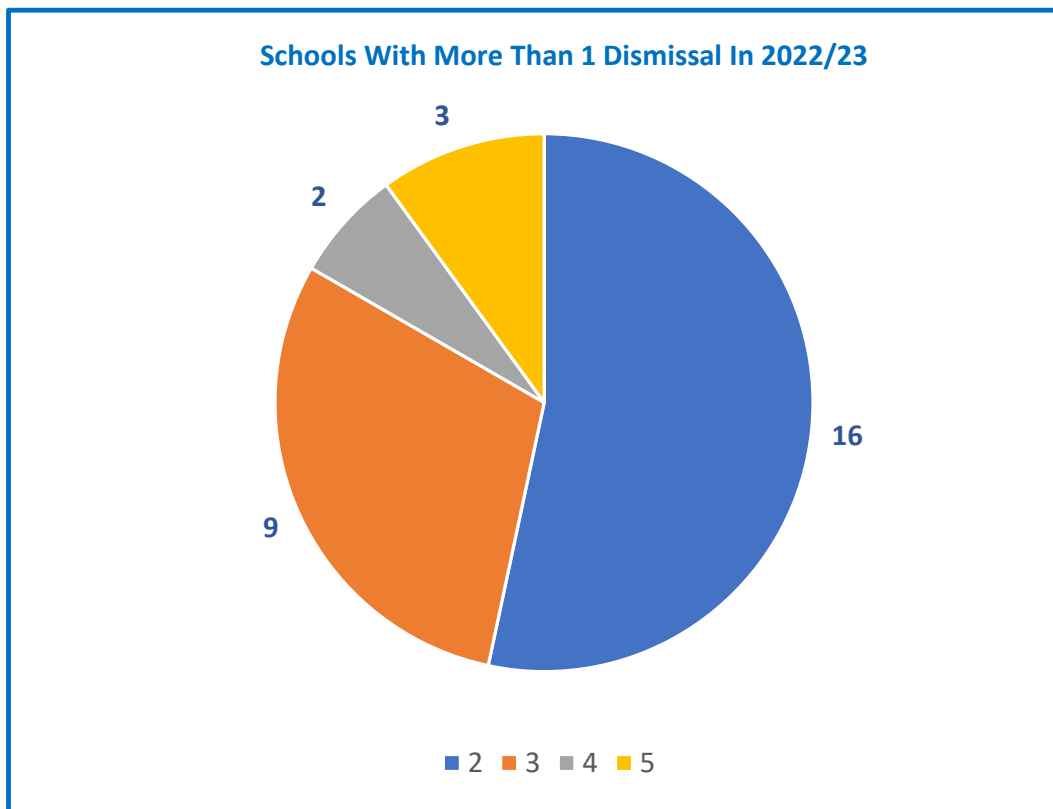
- The distribution of dismissals by gender varies dramatically.
- 57% of dismissals in male games are the only dismissal of that game.
- By contrast 68% of female dismissals are in games where there are two or more dismissals. Where a female is given a red card, it is more likely than not another will be issued in that game.
- In the rare instances where large numbers of dismissals are made this is far more frequent in male games, with three or more players dismissed occurring fourteen times compared with only on three occasions for females.

# Dismissal Concentration Varies By Gender



- Apart from a significant drop in 2020/21 female dismissals are much more likely to occur in games with multiple red cards than male dismissals.
- The average number of female dismissals in games with multiple red cards over the 8-year period is 58%. Both 2021/2 and 2022/3 were above average with an increasing trend.
- Over the same period only 35% of male dismissals were in games with multiple red cards. Both 2021/2 and 2022/3 were above the average.
- Of the 51,165 games played between 2015/16 and 2022/23 only 290, 0.57%, had multiple red cards and only 108 had three dismissals or more.

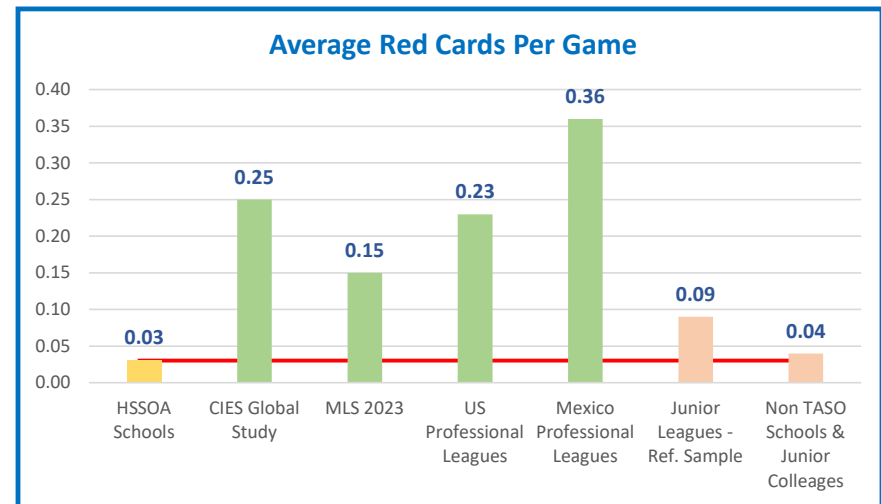
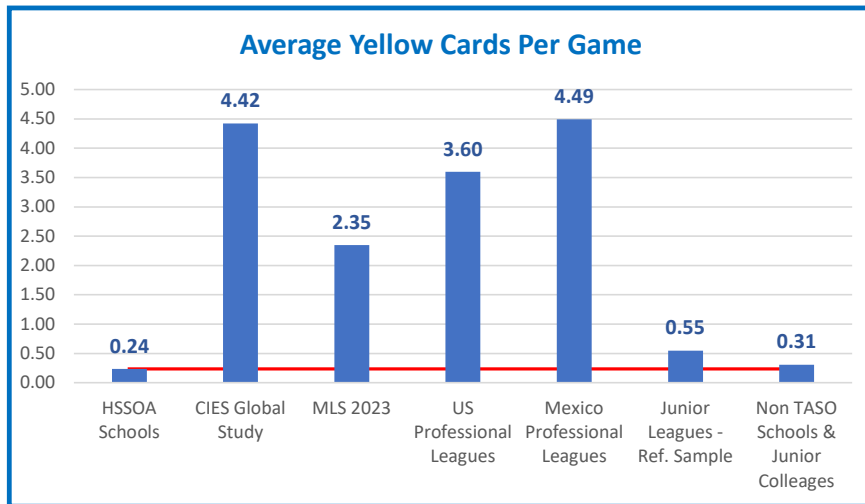
# Dismissal Concentration By School



- Of the 281 high schools, many with multiple teams, within the HSSOA area only 29 had more than one dismissal during the 2022/23 season.
- This represents 10% of schools.
- Of the 164 middle schools in the HSSOA area only one had more than one dismissal during the 2022/23 season.
- Only five schools had four or five dismissals, 2% of the total.
- Of the estimated 60 schools visiting the HSSOA area, none had more than one dismissal.

# Comparisons

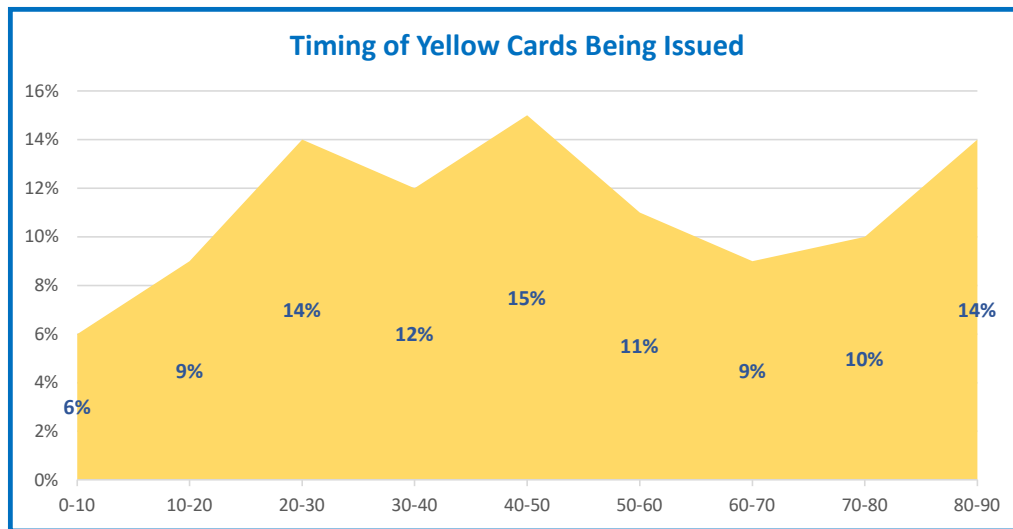
No large scale published studies for high school goals cautions and dismissals have been found so the HSSOA catchment area schools are compared with professional leagues and referee sample statistics as follows.



Professional leagues have caution and dismissal rates significantly higher than the HSSOA school catchment area games. Compared with sample games with players of the same age the rates of cautions and dismissals are much closer and show that the HSSOA schools had a lower rate in both classifications.

# Caution Timings

No formal information on cautions exists. The information shown comes from a personal record of 275 HSSOA high school and middle school games from 2021/2 and 2022/3. There is insufficient data for meaningful dismissal analysis.

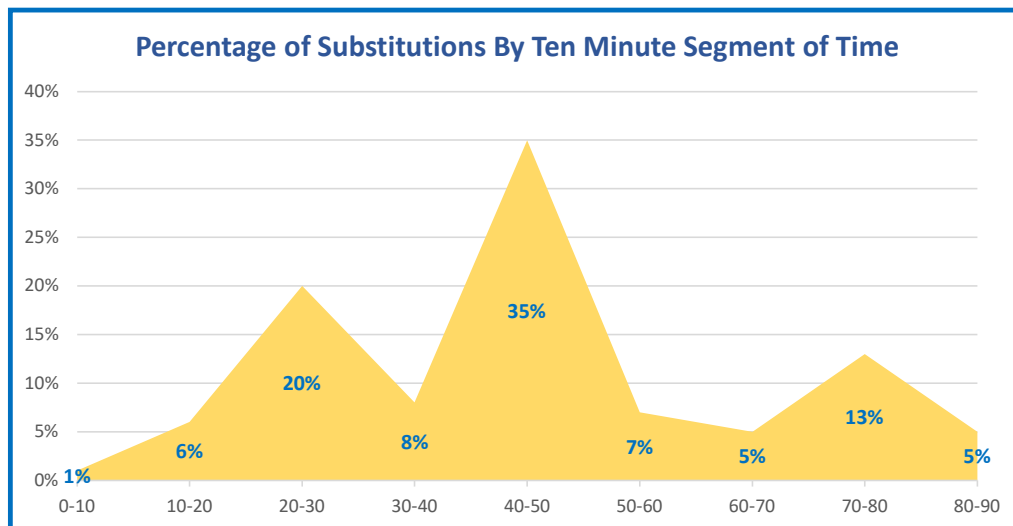


- Only 15% of cautions were in the first 20 minutes, often where there was animus between teams.
- Three spikes can be observed, minutes 20-30, before and after half time and in the final ten minutes. Late cautions often came in the most competitive games.
- A study of professional games showed a generally similar pattern but with a higher percentage towards the end of a game.
- For non-HSSOA teams of a comparable age a very similar distribution was found.



# Substitution Timings

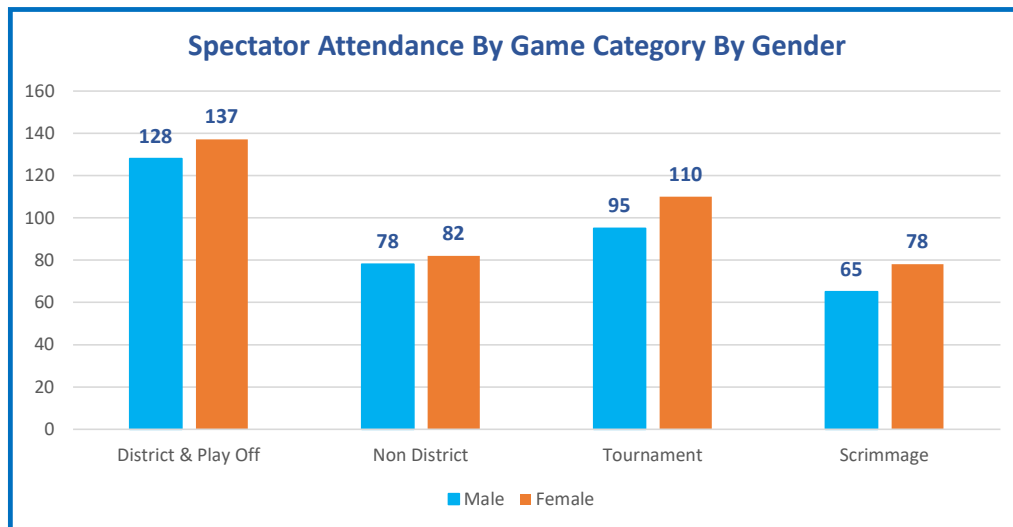
No formal information on substitutions exists. The information comes from a personal record of 275 HSSOA high school and middle school games from 2021/2 and 2022/3. This is shown for information and all substitution times were recorded at the time they were made.



- Only 7% of substitutions were in the first 20 minutes, usually for injury or poor form.
- Between the 25<sup>th</sup> and 30<sup>th</sup> minute there was a spike with players often given that time to make an impact or take a rest in a rotation system. This was especially the case in scrimmages.
- 35% of substitutions were at half time with a greater number, 39% for losing teams.
- The 70<sup>th</sup> to 80<sup>th</sup> minute saw another spike with players brought on to add energy or try and protect a lead or push for a goal.
- A study of professional games showed that more than 90% of substitutions were at half time or in the second half of games. For non-HSSOA teams of a comparable age a similar distribution was found but with a greater emphasis towards the end of games.

# Spectator Attendance

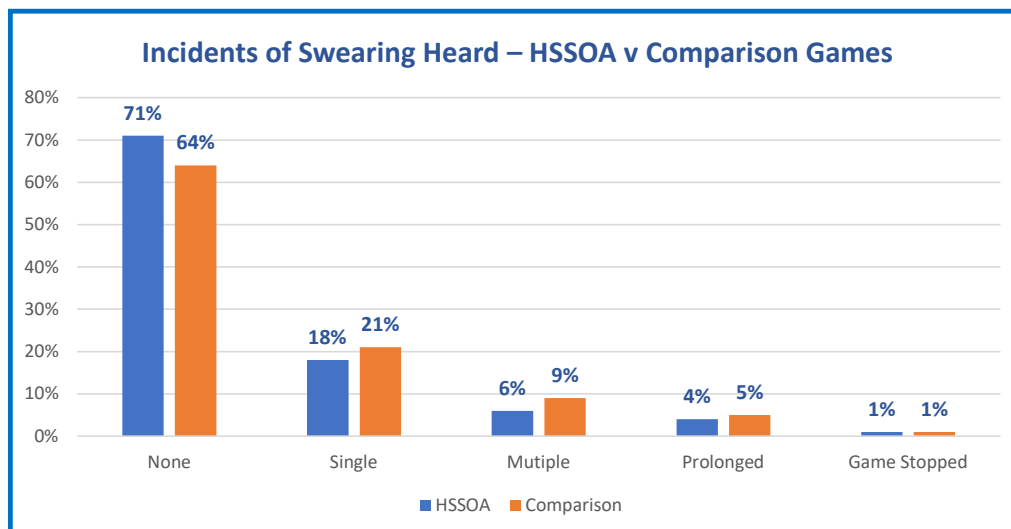
No formal information on game attendance exists. The information comes from a personal record of 275 HSSOA high school and middle school games from 2021/2 and 2022/3. Information was gained from counting agents and/or personal counts at the half-time point of a game.



- Uniformly it was seen that female games drew on average higher attendances across every game category than male games.
- For very important games and local games with a high level of rivalry between schools however male games drew larger and the largest crowds.
- Extreme weather conditions, rain, cold and excessive heat had a large bearing on attendances especially where there is no spectator cover.
- More successful teams did not necessarily achieve larger crowds but in some instances, this is a key factor in large crowds.

# Spectator Behavior, Incidents of Swearing

No formal information on spectator behavior exists. The information comes from a personal record of 275 HSSOA high school and middle school games from 2021/2 and 2022/3. This is compared with non-HSSOA teams of a comparable age. Swearing is defined as loud audible swear words in any language aimed at officials and/or players.



- 71% of HSSOA catchment area games were played with no swearing heard from any spectators. Comparable age games were lower with 64%.
- 18% of HSSOA catchment area games were played with single incidents of swearing. In 6% of games this was from multiple people and in 4% was prolonged and reached the level of highly unpleasant.
- HSSOA incidents are less than comparable games, chiefly due to parents in private club league games becoming aggressive and rude on a more frequent basis.

# Game Related Information

The information shown comes from a personal record of 275 HSSOA high school and middle school games from 2021/2 and 2022/3.

Games With Entrance Fee	%
Yes	72
No	28

Scoreboard Working	%
Yes	88
No	12

Game Started On Time/Within 5 Minutes	%
Yes	94
No	6

Ball Helpers Available	%
Play-Off	90
District	92

Non-District	80
Tournament	88
Scrimmage	72

Winning Captain Plays With Strong Wind 1 <sup>st</sup> Half	%
Yes	88
No	12

Captain Choice of Coin Side	%
Heads	58
Tails	42

Goalkeeper Changed	%
Yes	18
No	82

Team Choosing Strong Wind In 1 <sup>st</sup> Half	%
Wins	91
Loses	9