FIFPRO

In cooperation with
FOOTBALL BENCHMARK

2023

EXTREME CALENDAR CONGESTION: THE ADVERSE EFFECTS ON PLAYER HEALTH & WELLBEING

PWM Annual Workload Report - Men's Football (2022/23 season)

FIFPRO | PLAYER IQ WORKLOAD

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01 WELCOME

Welcome to the FIFPRO PWM annual report 2023. It provides a focused overview of the unprecedented workload demands placed upon the leading players in men's football across the 2022/23 season.

The PWM annual report follows on from two mid-season PWM flash reports, in which the pre-World Cup months and post-World Cup period were scrutinised from a workload perspective. These periods saw dangerous levels of fixture congestion, as competing competitions vied to complete their competition calendars. This flash report analysis was supplemented by the perspectives of the tournament's participating players, with the worrying impact of the congested season alarmingly evident.

The extreme levels of calendar congestion evident over the course of the season posed a pressing danger to the physical and mental health of players. The increasing demands placed upon the game's leading young players must also be reflected upon as concerns grow for the health and longevity of their burgeoning careers. Furthermore, the fixture congestion witnessed across the past season seems likely to further increase over the coming years as new competitions and expanded formats continue to add more matches.

All of this continues without the implementation of fundamental workload safeguards, placing the future of the game's key contributors, the players, at risk. The industry needs a far greater collective effort to establish effective player workload safeguards and a responsible calendar solution that protects player health and supports player performance.

David Aganzo,
FIFPRO President

Jonas Baer-Hoffmann,
FIFPRO General Secretary

02 ABOUT
FIFPRO PLAYER IQ: WORKLOAD

FIFPRO PLAYER IQ

This publication has been developed by FIFPRO Player IQ, a player-focused knowledge centre that aims to help shape decision-making in the football industry to protect and improve the careers and working lives of professional footballers.

For more, visit https://fifpro.org/en/player-iq

FIFPRO PWM PLATFORM

The FIFPRO Player Workload Monitoring (PWM) platform is a digital tool tracking the workload of professional football players from around the world. The platform is an analytics tool that monitors player workload to provide data insights and enable informed decisions to be taken in relation to future competitive scheduling and sustainable competition structures by prioritising player health, performance, and career longevity.

The database behind the PWM platform is the source of the analysis presented within this workload report. The FIFPRO PWM platform has recently been updated and now features 1,800 professional footballers, with over 350,000 match appearances on record to illustrate their workload journeys since 2018.

The FIFPRO PWM platform, operated jointly by FIFPRO and Football Benchmark, is freely accessible at the FIFPRO website and at the Football Benchmark website.

FOOTBALL BENCHMARK

Football Benchmark is a digital data & analytics platform that includes financial and operational performance data from more than 250 European and South American professional football clubs and social media performance metrics of hundreds of football clubs and players.
The business intelligence tool also provides market value estimates for 10,000+ players, covering the best leagues of the UEFA, CONMEBOL and AFC confederations.

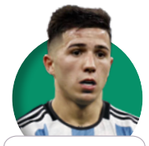
FOOTBALL BENCHMARK

03 / KEY FINDINGS

01/DANGERS TO PHYSICAL AND MENTAL HEALTH

Workload Demands Remain Unsustainable Combined With Insufficient Recovery Periods

MATCH CALENDAR



ENZO FERNÁNDEZ

70% of matches played back-to-back

BRUNO FERNANDES

20 consecutive matches back-to-back

RODRI HERNANDEZ

10 competitions participated in

TRAVEL

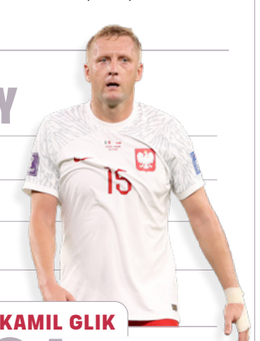
GIORGIAN DE ARRASCAETA

84,791KM travelled cross-border

RECOVERY

RAPHAEL VARANE

8 DAYS between World Cup final and next club match



KAMIL GLIK

4 DAYS between World Cup elimination and next club match

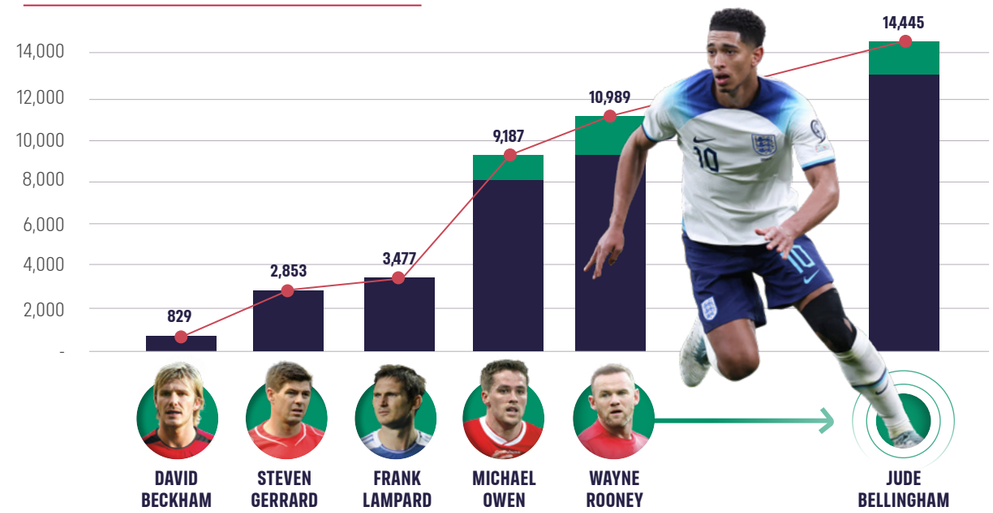
MENTAL FATIGUE

43% of World Cup players surveyed experienced extreme or increased mental fatigue

03/RISKS TO CAREER LONGEVITY

Over-Exposure of Young Players Without Adequate Workload Safeguards

Total minutes played before turning 20



KYLIAN MBAPPÉ **37%** more minutes than **Thierry Henry** at same age

PEDRI **20%** more minutes than **Xavi Hernández** at same age

VINÍCIUS JUNIOR **12,000** more minutes than **Ronaldinho** at same age

02/DETRIMENTAL IMPACT ON PLAYERS, CLUBS AND COMPETITIONS

The Effects Of Calendar Congestion Become Evident Across The Industry

2022 OCT — **393 REPORTED INJURIES**

during October across Europe's top-5 leagues

2023 FEB - MARCH — **299 REPORTED INJURIES**

during Feb-Mar in EPL & Ligue 1 following late-December restart

101 REPORTED INJURIES

during Feb-Mar in Bundesliga following late-January restart

04/NEW COMPETITION FORMATS WILL FURTHER INCREASE PRESSURE ON PLAYERS

Absence Of Effective Safeguards Compounded By Increasing Number Of Matches

UP TO 11% increase in matches likely for leading players over next cycle

Leading players face the possibility of

90+ MATCHES PER SEASON

04

EXTREME CALENDAR CONGESTION

While every football season brings its own challenges, the 2022/23 season pushed this idea to extreme lengths, with the FIFA World Cup™ forced into the middle of most domestic seasons causing unprecedented disruption and dangerous workload demands. In this section, the season's calendar is analysed through the lens of selected clubs and players from across the FIFPRO divisions.

04 / EXTREME CALENDAR CONGESTION

The workload challenges created by this unprecedented match calendar were felt most acutely by elite-level players. These demands are likely to increase further with imminent reforms of international club competitions and the potential introduction of the new FIFA Club World Cup during the course of the next calendar cycle. In this chapter, we analyse the 2022/23 calendar and its most dangerous aspects, before then exploring the potential workload impact of new competition formats.

CONDENSED SCHEDULING DURING 2022/23

VINÍCIUS JR.

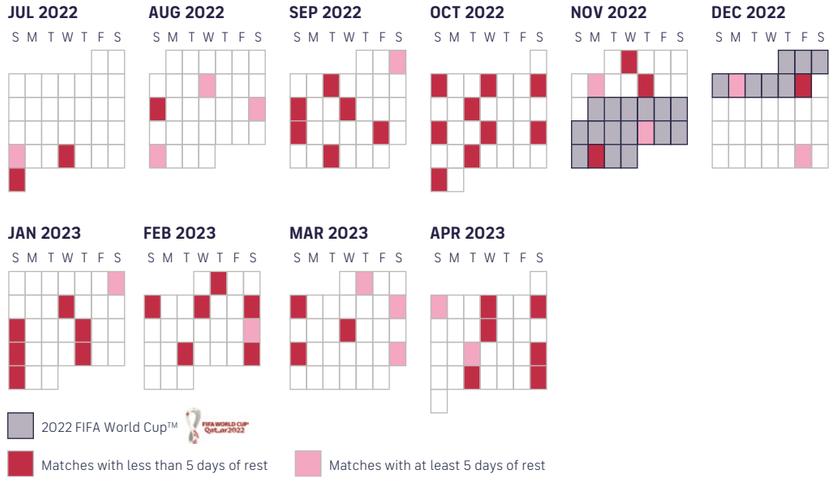
Real Madrid CF & Brazil

Vinícius Jr.'s performances in recent seasons have solidified his status as one of the most exciting talents in world football as he played an instrumental role in Real Madrid's recent success. However, these exploits are also reflected in his workload demands.

In 2021/22 Vinícius Jr. played almost 5,200 minutes, one of the highest figures among players of top European clubs. At the end of the season, he lifted the UEFA Champions League, LaLiga and Supercopa de España trophies with Real Madrid CF. Consequently, his international club workload increased for the 2022/23 season as the team qualified for the UEFA Super Cup and FIFA Club World Cup, as well. During this season he played almost 4,000 minutes up to May in just 45 matches.

Importantly, Vinícius very rarely had at least 5 days of rest between two appearances across the last few years, failing to meet the minimum recommendation of FIFPRO. His busy schedule was characterized by long sequences of back-to-back matches: **he had a run of 16 games without sufficient rest in September-October 2022** and another streak of 10 appearances in January-February 2023. The latter included the FIFA Club World Cup, held in Morocco, which exacerbated the high travel load of the player. The Brazilian winger racked up over 56,000 kilometers of international travel in 2022/23 (until the end of April).

Match calendar (until 1st May 2023)



59 GAMES PLAYED IN

9 COMPETITIONS

75% OF THEM PLAYED WITH LESS THAN 5 DAYS OF REST (BACK-TO-BACK)

Source: FIFPRO PWM, Football Benchmark analysis

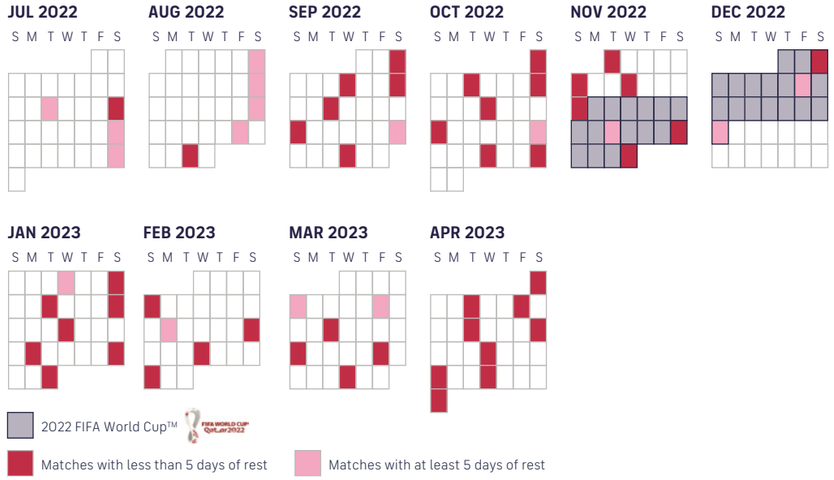
LAUTARO MARTÍNEZ

FC Internazionale Milano & Argentina

FC Internazionale Milano went on deep runs in all competitions they played in 2022/23. By reaching the final of the Coppa Italia, as well as the UEFA Champions League Final, the team's star striker, Lautaro Martínez also experienced a significantly increased workload compared to previous seasons. In his case, the FIFA World Cup™ was another influencing factor as he won the tournament with Argentina in Qatar and took part in all seven matches except the semi-final against Croatia.

National team windows and breaks are a key challenge for players such as Martínez. The travel for these matches exerts additional pressure on players, especially considering the limited time available between a match during the national team break and the following club matchday. For instance, in October 2021, Martínez was on the pitch again for Inter Milan in Italy, just 38 and a half hours after he played 86 minutes for Argentina in Buenos Aires against Peru.

Match calendar (until 1st May 2023)



62 GAMES PLAYED IN

7 COMPETITIONS

76% OF THEM PLAYED WITH LESS THAN 5 DAYS OF REST (BACK-TO-BACK)

Source: FIFPRO PWM, Football Benchmark analysis

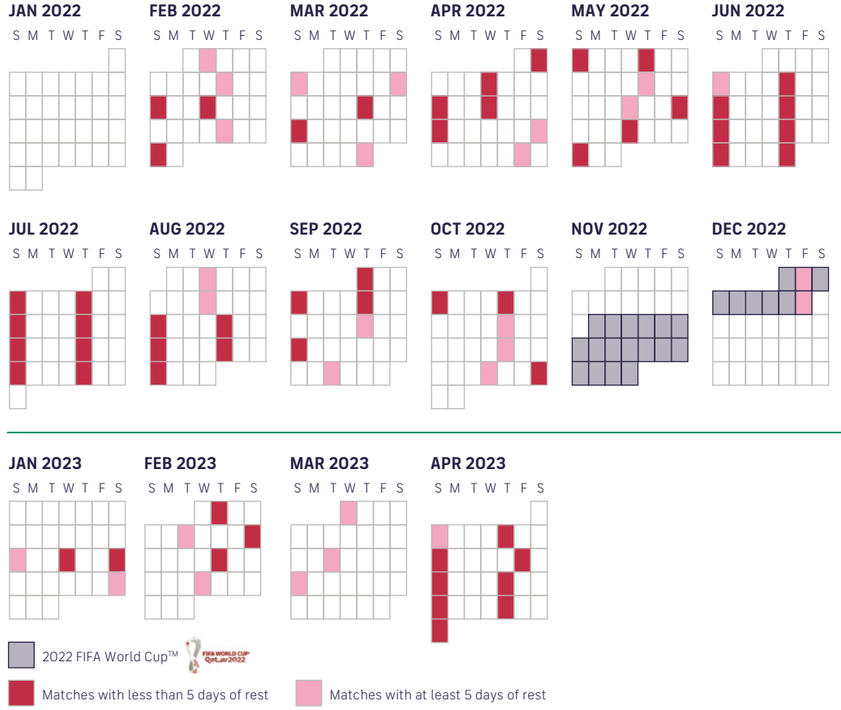
PEDRO GUILHERME

CR Flamengo & Brazil

Extreme workload and schedule congestion is not limited to football in Europe. One of the prime examples of this issue is CR Flamengo in South America. In addition to domestic competitions, they had major commitments on the international stage, especially in the Copa Libertadores and the FIFA Club World Cup. Like many Brazilian teams, they also play in a state-level championship, filling most of the months that would be the "off-season" between two seasons of the Brazilian league. As a result, the only real break this time was around the time of the FIFA World Cup™ in November and December of 2022; however, this was obviously not afforded to those who participated in the World Cup.

Pedro, the 25-year-old forward of Flamengo falls into this category. He had two appearances for Brazil in Qatar, then returned to club football in early January. In just little over three months from then he racked up 21 appearances. This was already around a third of what he had for the entirety of the 2022 season in which he had 62 matches. It must also be noted that many of his 2023 matches involved long-distance international travel as he went to Argentina, Ecuador, Peru, and Morocco (FIFA Club World Cup) with Flamengo.

Match calendar (until 1st May 2023)



62 GAMES PLAYED IN

7 COMPETITIONS

69% OF THEM PLAYED WITH LESS THAN 5 DAYS OF REST (BACK-TO-BACK)

21 GAMES PLAYED IN

7 COMPETITIONS

67% OF THEM PLAYED WITH LESS THAN 5 DAYS OF REST (BACK-TO-BACK)

Source: FIFPRO PWM, Football Benchmark analysis

CASE STUDY
RAPHAËL VARANE'S FIVE-SEASON CALENDAR

In February 2023, Raphaël Varane made headlines when he unexpectedly announced his retirement from national team football. Aged just 29, the defender recorded 93 appearances for the senior France team and was an integral part of the squads that won the 2018 FIFA World Cup™ and finished runners-ups at the 2022 FIFA World Cup™ and 2016 UEFA European Championships.

When asked, the player cited the extreme workload demands placed on top players. "The calendar is already more than full; the players are over-worked, and it will get even worse. I'm afraid that we will witness much shorter careers and that players will have to give up the France team very early because, physically or mentally, what we are asking for today is simply beyond limits" – said Varane.

In this case study, we assess the past five seasons of the defender from a workload perspective. The data strongly supports his opinion.

MATCH WORKLOAD
(2018/19 – 2022/23)

The overloaded schedules and reduced season breaks over the seasons were main contributors to Varane's decision to retire.

Since 1st June 2018, he accumulated more than 22,000 minutes across 248 match appearances, with almost 60% of his appearances coming in back-to-back games without sufficient rest. This puts him firmly among the top 100 among all players from European "Big Five" leagues in terms of overall workload.

Crucially, Varane demonstrated full commitment to the French national team and was a mainstay in the setup for a long time. Between the start of the 2018 World Cup and the 2022 World Cup Final, he spent around 243 days in the France national team setting, which equates to almost 15% of all days in this period. With his decision to retire from international football, he is projected to "save" 30 to 50 days every year. This is also illustrative of the commitment and sacrifice many top players make while simultaneously turning out for their clubs and national teams, too.

248
total appearances made
(including club friendlies) since 1st June 2018

89.5
minutes
on average per appearance during the analysed time frame

58%
back-to-back matches
out of total appearances

243
days
spent in France national team setting between start of 2018 World Cup and end of 2022 World Cup (14.6% of all days in period)

Source: Football Benchmark analysis

TRAVEL LOAD
(2018/19 – 2022/23)

229,244
Total distance travelled (international trips, km)

324
Time spent travelling (flight time – hours)

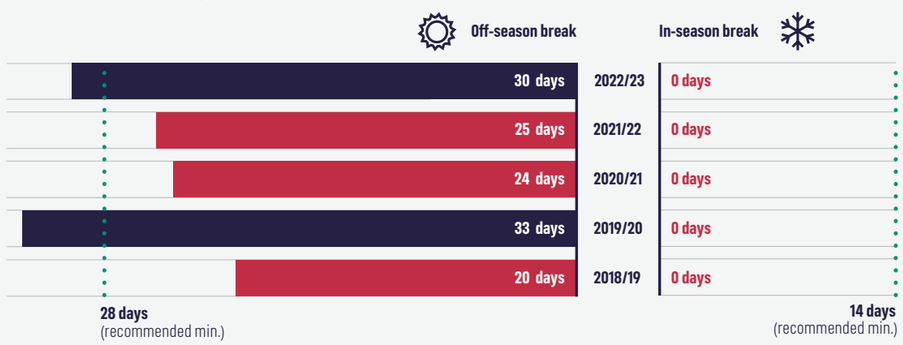
110
Time zone crosses

Source: Football Benchmark analysis

Varane's involvement with top clubs like Manchester United FC and Real Madrid CF, as well as his commitment to the French national team, significantly contributed to his extensive travel load. In four of the last five seasons, the international travel distance recorded by Varane was at or above 50,000 kilometres, which is far above the average of a player in one of the European "Big Five" leagues. The only season with relatively lower travel load was 2021/22 as there was no major national team tournament in that period. In total, his international travel since July 2018 equates to more than five trips around the length of the Equator in distance.

In addition to distance travelled, the number of time zone crossings is another important factor as players need to adjust to these changes and they often play shortly after arriving in another time-zone. Fuelled by pre-season tours to far-away locations, Varane made 22 time-zone crossings on average per season since 2018.

SEASON BREAKS
(2018/19 – 2022/23)



Source: Football Benchmark analysis

Only two seasons in the analysed period saw Varane enjoy a sufficient number of off-season break days, meeting the minimum standard recommended by FIFPRO (28 days). The off-seasons before the 2018/19, 2020/21, and 2021/22 seasons were also affected by external factors, such as the World Cup, the pandemic, and the postponement of EURO 2020 to 2021.

Moreover, it is also concerning that he had practically zero in-season break days over the analysed period as he played in the Spanish LaLiga and the English Premier League. It should also be noted that during the 2022/23 season he was back at Manchester United just eight days after the World Cup Final and played 79 minutes in the Premier League on the following day (27 December).

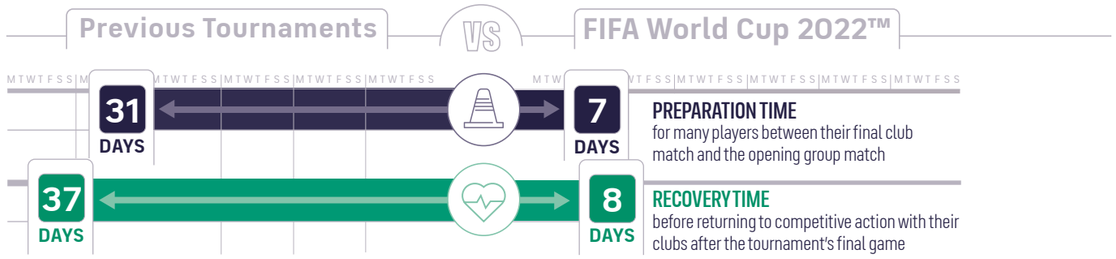
05

WORKLOAD REVIEW: FIFA WORLD CUP 2022™

The unusual scheduling of FIFA World Cup 2022™ placed significant demands on players with intense matches and numerous other factors that affected their workload. This section explores the workload-related aspects of the tournament and analyses their impact on the players.

INSUFFICIENT PREPARATION TIME & RECOVERY PERIODS

The unprecedentedly short preparation period witnessed before the 2022 FIFA World Cup™ and the short recovery periods after it put many players in a difficult situation, increasing the physical and mental toll on them. As the tournament marked a significant departure from tradition by being held in the months of November and December, many players arrived in Qatar without enough preparation with their national teams and had to return to club setting without adequate time for rest and recovery. In order to ensure optimal preparation time and appropriate in- and off-season breaks for players, a similarly congested tournament must be avoided in the future.



Overall, nearly 68% of players selected for the final squad lists had less than two weeks to prepare for the tournament.

86 % OF PLAYERS want at least 14 days preparation time

61 % OF PLAYERS want a minimum of 14-28 days recovery time

Source: FIFPRO Post-Tournament Player Survey

In contrast to the above survey result, there were a lot of players who had a substantially shorter turnaround between their last World Cup game and their first club appearance. A few examples are highlighted below from six different leagues from around the world, showing that this issue was not limited to a handful of countries.

Number of days between the respective national team's last World Cup match and a player's first post-World Cup club appearance

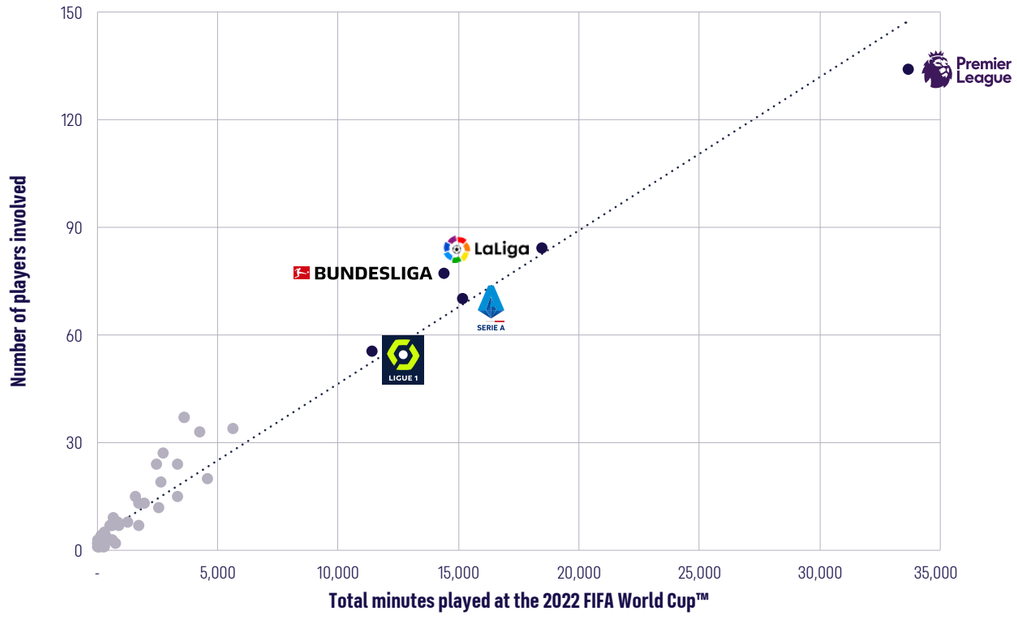
Source: FIFPRO PWM, Football Benchmark analysis

DEMANDING TOURNAMENT WORKLOAD

World Cup squads consist of players from diverse leagues and clubs, representing different stages of their careers. In 2022, players from 55 leagues participated; the majority came from the "Big Five" European leagues. The Premier League clearly emerged on top in this regard: 134 players from the English top division accumulated over 33,000 combined playing minutes during the tournament.

These findings imply that the majority of elite players tend to play in a select group of leagues. These are often very competitive and include clubs that also play in international competitions. These factors together, place a significant workload on players during the season. On top of their regular workload, this contingent were now subjected to a mid-season interruption and additional matches at the World Cup.

Total minutes played at the 2022 FIFA World Cup™ and number of players by league



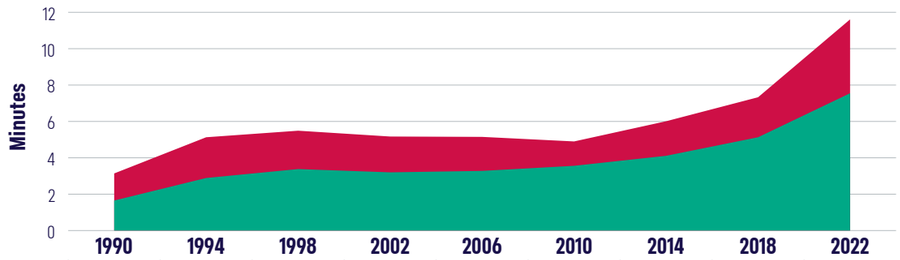
Source: FIFPRO PWM, Football Benchmark analysis

IMPACTFUL STOPPAGE TIME

FIFA revised the usual interpretation of stoppage time for the 2022 tournament to increase the time the ball is actually in play. While this is arguably good for the overall spectacle, the potential workload implications must not be overlooked. The implementation of the new policy led to an average stoppage time of approximately 11.6 minutes in Qatar (excluding matches that went into extra time). This is a nearly 60% increase compared to the previous edition in Russia and twice the amount traditionally seen in past decades.

If this policy change is to be widely adopted, competition organizers and governing bodies need to consider the impact of extended playing time when it comes to fixture planning.

Evolution of Stoppage Time at the FIFA World Cup™

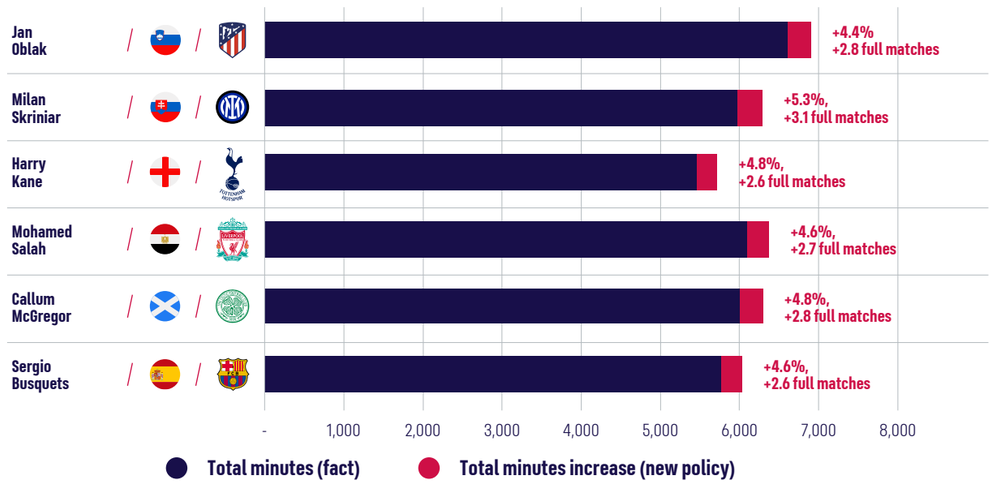


	1990	1994	1998	2002	2006	2010	2014	2018	2022
Avg. second half stoppage time	1.65	2.89	3.38	3.20	3.28	3.56	4.11	5.13	7.55
Avg. first half stoppage time	1.49	2.24	2.11	1.97	1.87	1.34	1.90	2.20	4.06

Source: FIFPRO PWM, Football Benchmark analysis

To put this into perspective, an analysis was conducted on players with at least 60 appearances over the course of the 2021/22 season who also participated in international club competitions. These players would have played approximately 4.8% more over the course of the entire season if extended stoppage times had been in place back then. In most cases this equates to around three full matches worth of playing minutes, increasing the workload strain on the footballers.

Potential impact of the new policy on selected players' playing time (2021/22 actual numbers vs projection)



Source: FIFPRO PWM, Football Benchmark analysis

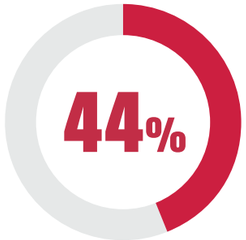
HARMFUL EFFECTS OF HIGH WORKLOAD

With players already navigating a demanding schedule and the residual effects of the COVID-19 pandemic, the unusual schedule of the FIFA World Cup™ introduced new challenges that pushed athletes to their limit. While it is typical for them to experience physical and mental fatigue following an intense tournament like the World Cup, the absence of an adequate off-season for rest and recovery amplified the concerns. The harmful effects of the high workload demands were reflected in the players' responses in the FIFPRO Post-Tournament survey.

MENTAL FATIGUE

OF PLAYERS REPORTED FEELING EXTREMELY HIGH LEVELS OF MENTAL FATIGUE COMPARED TO HOW THEY USUALLY FEEL AT THIS TIME OF THE SEASON (JANUARY) WITH A FURTHER 23% FEELING MORE MENTAL FATIGUE THAN USUAL

PHYSICAL FATIGUE



OF PLAYERS EXPERIENCED EXTREME OR INCREASED PHYSICAL FATIGUE COMPARED TO HOW THEY USUALLY FEEL AT THIS TIME OF THE SEASON (JANUARY)

INJURY RISK

OF PLAYERS REPORTED AN INJURY OR FELT MORE LIKELY TO SUFFER AN INJURY DUE TO THE CONGESTED CALENDAR

Source: FIFPRO Post-Tournament Player Survey

06

PLAYERS IN FOCUS

Players across various leagues and continents are subjected to extremely demanding workloads. However, the exact nature of these demands can vary from player to player. For example, while some are on the pitch virtually all of the time, others must deal with extremely long travel demands during the season. In this chapter, four players are profiled with a focus on their workload during the 2022/23 season.

BRUNO FERNANDES

Analysed period:
1st July 2022 – 1st May 2023

28 years old / Midfielder

Established player with high workload playing in a "Big Five" league and involved in international football with club and national team, too.

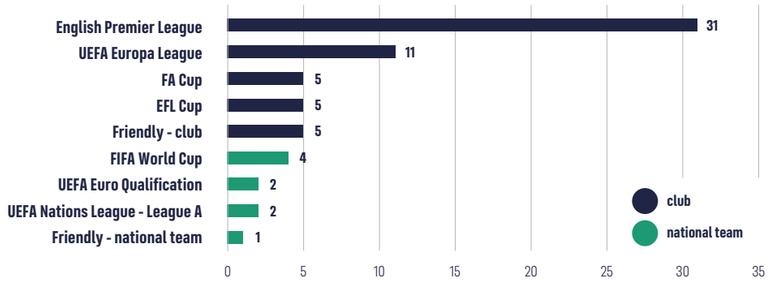
Percentage of back-to-back appearances: **74%**

Minutes played: **5,986**

Days between last World Cup match and return to club environment: **10 DAYS**

Days between last World Cup match and first match with club: **11 DAYS**

Number of appearances by competition



As usual, Bruno Fernandes was almost ever-present in the Manchester United FC team in 2022/23, playing in a variety of competitions.

The player also took part in the 2022 FIFA World Cup™ in Qatar with Portugal. He was on the pitch for around 400 minutes across four games.

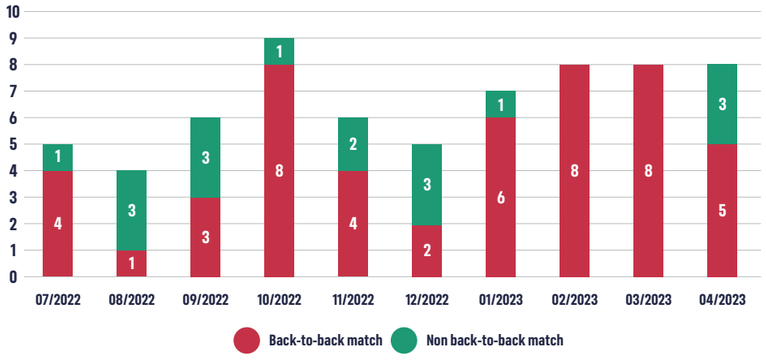
Season breaks length (days)

22 **Off-season break days** (28 days recommended min.)

0 **In-season break days** (14 days recommended min.)

Neither the off-season or the in-season break of the player met the minimum threshold recommended by FIFPRO in 2022/23.
In addition, Fernandes did not have a real break after his World Cup participation either; he was back on the pitch for Manchester United FC just 11 days after Portugal's exit from the tournament.

Number of back-to-back appearances by month



74% of his matches were played back-to-back, resulting in limited rest time between matchdays.

He had only 4.3 days between matches on average over the course of the 2022/23 season - below the minimum recommended by FIFPRO (5 days).

Between mid-January and the end of March, he played 20 consecutive back-to-back matches. The average number of days between matches during the streak dropped to 3.5 days.

ENZO FERNÁNDEZ

Analysed period:
1st July 2022 – 1st May 2023

22 years old / Midfielder

Enzo Fernández gained worldwide recognition recently as he won the Best Young Player Award at the 2022 Qatar World Cup and became Chelsea FC's record signing.

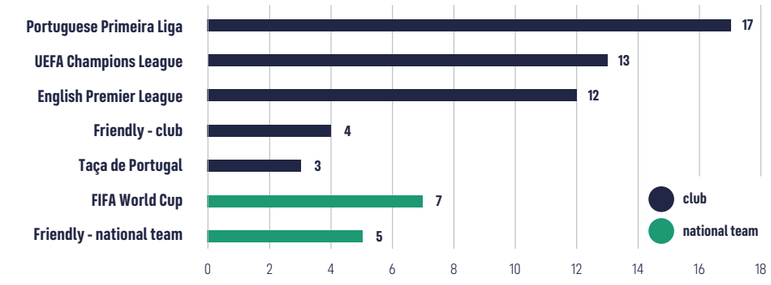
Percentage of back-to-back appearances: **69%**

Minutes played: **5,159**

Days between last World Cup match and return to club environment: **9 DAYS**

Days between last World Cup match and first match with club: **12 DAYS**

Number of appearances by competition



Enzo Fernández's workload experienced a surge during the 2022/23 season, primarily due to his increased involvement in national team games. In the preceding two seasons, he did not participate in any national team match. After the World Cup, during the winter transfer window, he transferred from SL Benfica to Chelsea FC.

Season breaks length (days)

0 **Off-season break days** (28 days recommended min.)

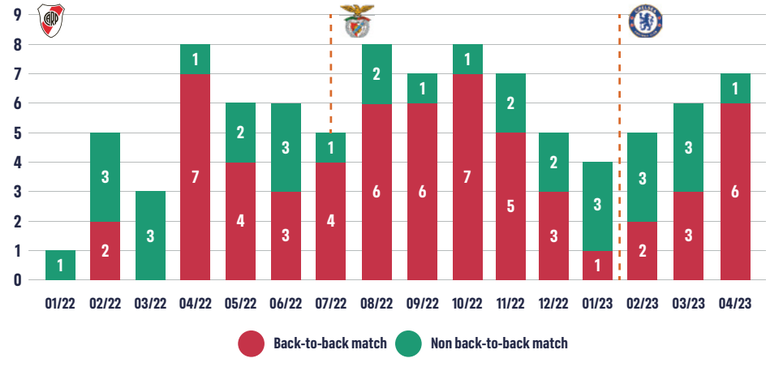
0 **In-season break days** (14 days recommended min.)

In terms of season break, Fernández was in an uncommon situation as he transferred from a "summer schedule league" (Argentina) to a "fall-spring" type league (Portugal) in 2022. This meant that mere 8 days after a Copa Libertadores match in South America he made his debut for SL Benfica in a friendly match and thus did not have an off-season break in the summer of 2022. Similarly, he did not have much rest after the World Cup Final in Qatar either, returning to his club just 9 days later and then playing three days afterwards.

Enzo Fernández had a tough schedule both in the previous season played with River Plate and the 2022/23 season in Europe. Due to a summer transfer to SL Benfica, he had no break in the summer. The first half of the 2022/23 season was very demanding for Fernández: ahead of the World Cup, he played 15 matches (13 back-to-back) in just 57 days in September and October. 69% of his matches were played without sufficient rest (back-to-back) since early 2022.

Number of back-to-back appearances by month

Period analysed: January 2022 - April 2023



RODRI

Analysed period:
1st July 2022 – 1st May 2023

26 years old / Midfielder

Well established player both at club and national team level that plays in a "Big Five" league and took part in FIFA World Cup 2022. He missed only five games during the 2022/23 season.

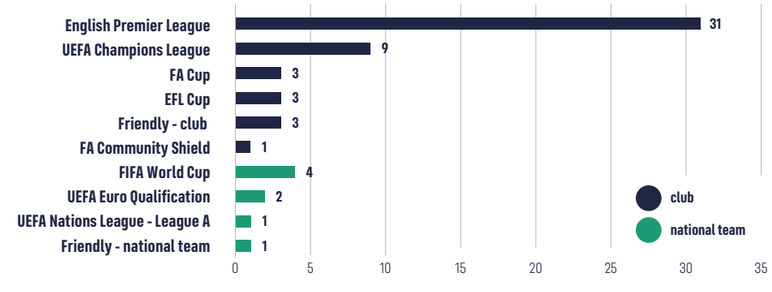
Percentage of back-to-back appearances: **62%**

Minutes played: **5,092**

Days between last World Cup match and return to club environment: **14 DAYS**

Days between last World Cup match and first match with club: **16 DAYS**

Number of appearances by competition



Most matches played by Rodri in 2022/23 are club matches (86%). Overall, he took part in 10 different competitions.

He played for Spain at FIFA World Cup 2022™; started all four matches.

Season breaks length (days)

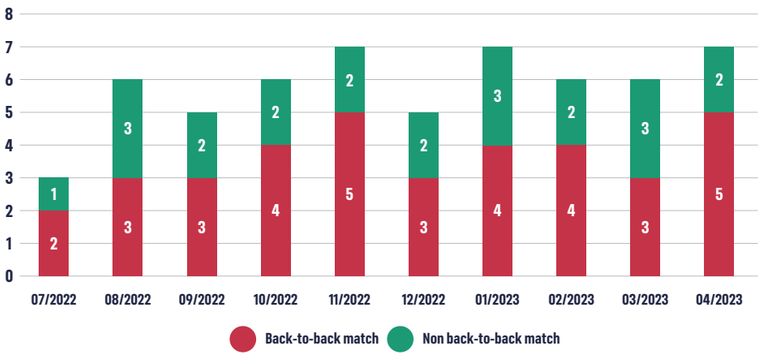
29 **Off-season break days** (28 days recommended min.)

0 **In-season break days** (14 days recommended min.)

Rodri had just enough rest days during his off-season break before the 2022/23 season, meeting the minimum recommendation of FIFPRO by one day.

As a Premier League player though, he was not afforded any in-season break during the exceptionally congested season.

Number of back-to-back appearances by month



Rodri experienced a tough schedule during the season especially ahead and during the World Cup (October-November) and then once again in April. 62% of his matches were played back-to-back. Overall, he played 88 minutes per game on average, which means that he almost always started for his club and national team and was rarely subbed off.

The post World Cup period was quite tough with 10 matches (5 of them played back-to-back) in just 36 days in three different competitions – English Premier League, FA Cup and EFL Cup.

SOFYAN AMRABAT

Analysed period:
1st July 2022 – 1st May 2023

26 years old / Midfielder

Amrabat was a key player in Morocco's successful FIFA World Cup™ campaign and has been instrumental in ACF Fiorentina's long season, too.

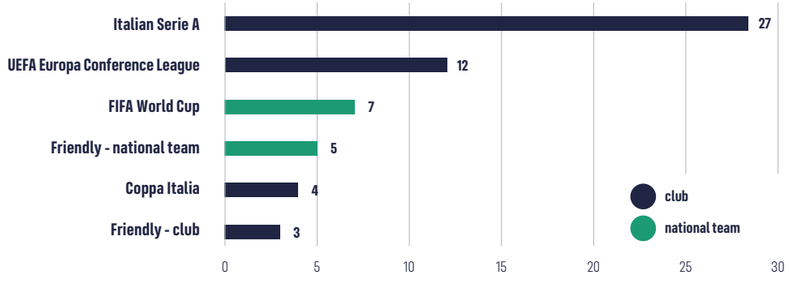
Percentage of back-to-back appearances: **67%**

Minutes played: **4,570**

Days between last World Cup match and return to club environment: **10 DAYS**

Days between last World Cup match and first match with club: **18 DAYS**

Number of appearances by competition



Amrabat's team, ACF Fiorentina had deep runs in the UEFA Europa Conference League and Coppa Italia, reaching the finals in both competitions, which contributed to his high workload.

Amrabat also reached the World Cup semi-finals with Morocco, a historic achievement for an African nation, which included participating in the 3rd Place playoff match on the final weekend of the tournament.

Season breaks length (days)

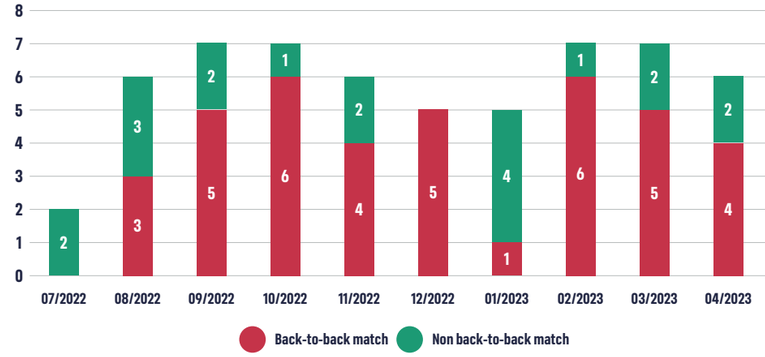
30 **Off-season break days** (28 days recommended min.)

8 **In-season break days** (14 days recommended min.)

Off-season break days for Amrabat were just above the recommended minimum. The player had one month of rest before rejoining Fiorentina on pre-season training. Undoubtedly, this break period provided a solid foundation for the excellent performances during the season which followed.

As opposed to other analysed players, he enjoyed a short break post-World Cup, but crucially it was still much shorter than recommended.

Number of back-to-back appearances by month



67% of total appearances were played back-to-back.

The average rest days over the season reach 4.7, below the recommend minimum (5).

The periods before and after the World Cup were both very congested for the player. In the second half of the season Fiorentina managed to reach the finals of the Coppa Italia and the UEFA Conference League, too, adding more high-intensity games to Amrabat's calendar.

07

HISTORICAL WORKLOAD COMPARISON

Comparison of players from different eras is an often-debated topic. Who was the better player? Could the great players of the past thrive in the modern game? While the comparative assessment of quality across era's is difficult, comparing them in terms of playing time is readily possible. In this section, a selection of active players is compared to their retired compatriots to put modern workload into perspective.

07 / HISTORICAL WORKLOAD COMPARISON

The demands on modern football players have significantly increased due to developments in the sport. Firstly, players currently active often have a much more condensed schedule, with many domestic and international competitions taking place throughout the year. Due to the continuously expanding calendar, the amount of time available for rest and recovery has reduced significantly. This results in players being caught in a non-stop cycle of matches, with little time for recuperation.

Secondly, the number and format of competitions has evolved over the past two decades. For example, the number of teams in major international tournaments such as the FIFA World Cup™ and UEFA EUROs has increased significantly, resulting in more matches and a more gruelling tournament schedule and placing more pressure on players to maintain their performance levels throughout the season.

Thirdly, the game is constantly evolving and so is its pace. For instance, according to FIFA, the average total distance run by a national team at FIFA World Cup 2022™ was higher than the 2018 edition's corresponding figure. Moreover, in 2022 FIFA introduced a new interpretation of stoppage time that led to a substantial extension of a match's length. Clearly, this can pose an additional threat to players' workload if the new interpretation becomes the norm in other competitions, too in the future.

Lastly, travel commitments for modern players have also increased compared to those from 20 years ago. With many clubs and national teams playing in international competitions, players must travel longer distances and across different time zones, which leads to sleep deprivation and further impacts their recovery and preparation routine.

As the sport continues to evolve, it is essential for players, club, governing bodies, and the rest of the stakeholders to work collaboratively to ensure that players receive the support they need to thrive amidst the high demands of modern football.

CASE STUDY
JUDE BELLINGHAM'S EXTREME TEENAGE WORKLOAD

Jude Bellingham made his first-team debut for Birmingham City FC in the English second tier aged in 2019. Aged just 16 years and 38 days, he became the youngest-ever debutant at the club. Since then, he has become a key member at Borussia Dortmund and a mainstay in the England national team, as well. Despite not turning 20 until June 2023, he has already accumulated almost 15,000 minutes in competitive senior matches.

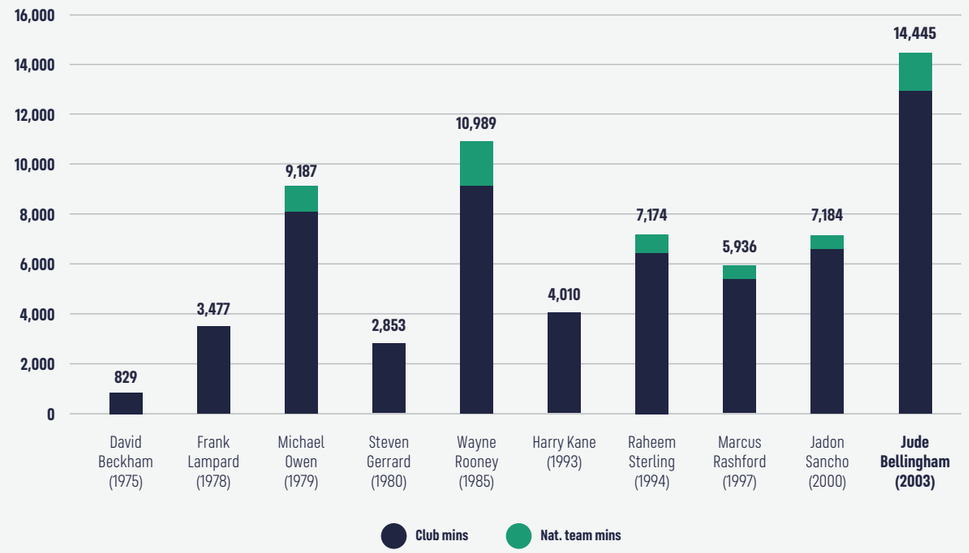
Compared to current and former high-profile English players, like Frank Lampard, Steven Gerrard, Michael Owen and Wayne Rooney, Bellingham's workload during his teenage years is extremely high. In this exercise he is compared to 12 other players and none of them comes close to him in terms of minutes played before the age of 20. When ordered by their date of birth and moving forward in time, we see an increasing trend in minutes as it has become more common for teenage players to not only play regularly for their clubs but also make appearances for their senior national teams.

One downside of over-exposure at an early-age is the risk of mental burnout, as the pressure to constantly perform at a high-level impact on a young player's mental health. Another potential issue concerns career longevity, with injuries and the related wear and tear on a player's body often impacting these players at an earlier stage.

In isolation, high workload demands are not necessarily a major problem for the modern player. However, in such cases, it is essential that necessary safeguards accompany these increased workload demands, including the provision of satisfactory recovery periods and season breaks to enable adequate physical and mental recouperation from these periods of extreme congestion.

It is important for clubs and national teams to take a balanced approach when it comes to managing young players' workloads. While it is crucial to provide young talents with opportunities to develop and showcase their skills, it is equally important to protect their well-being and ensure their long-term success.

Total minutes played by Bellingham and other high-profile English players before turning 20



Source: Football Benchmark analysis

Note: the numbers in brackets indicate the birth year of the analysed players. Only senior club matches and senior national team matches were considered; club friendlies were excluded from calculation.

PLAYER COMPARISONS

In a similar exercise, let's compare the cumulative minutes played of current players at different ages with one of their selected compatriots who played in a similar position. As you will see, the trend noted in the case study above can be observed across markets among other leading young players. Industry stakeholders must come together and reach a more sustainable calendar solution, otherwise there exists a real risk of harm for the emerging star players of this generation.

THIERRY HENRY VS KYLIAN MBAPPÉ – EVOLUTION OF CUMULATIVE APPEARANCES

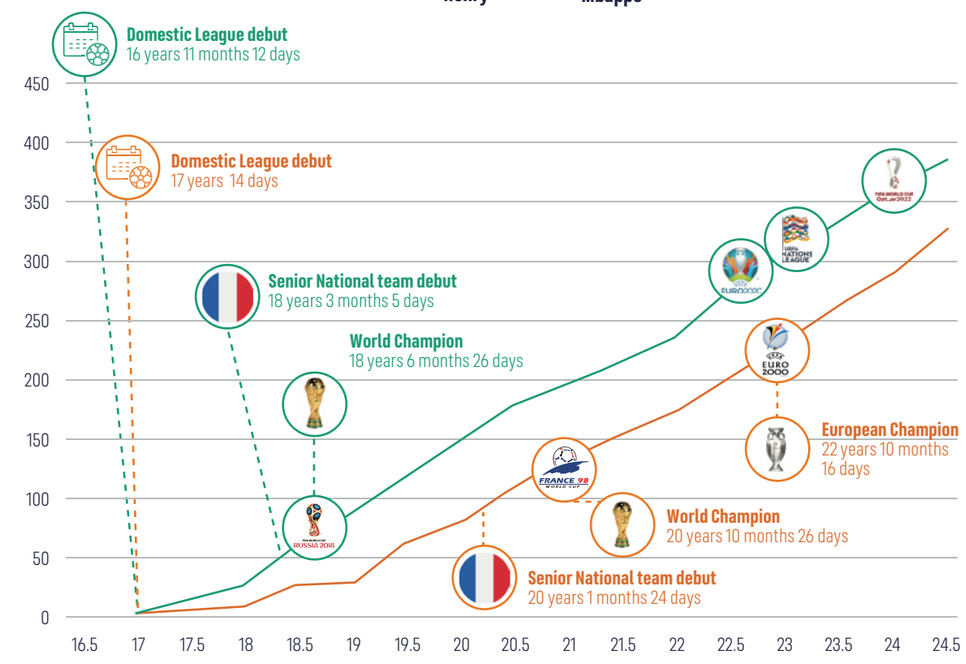
THIERRY HENRY

KYLIAN MBAPPÉ

With a gap of more than 20 years between their respective debuts, Kylian Mbappé and Thierry Henry both began their professional careers at AS Monaco FC. Henry's first senior appearance came days after his 17th birthday in 1994, becoming the club's youngest ever debutant. This record was actually in place for a long time, up until Kylian Mbappé's debut in 2015, aged just 16 years and 347 days.

By the age of 18, Mbappé had already played more than double of Henry's competitive matches as the latter's playing time growth sped up only after turning 19. Henry eventually reached 100 senior appearances when he was 20 years old, while Mbappé achieved the same feat an entire year younger. By the time Mbappé was 24, he had accumulated a total of 26,952 minutes and had already played in four major national team tournaments, while Henry on the other hand had reached 18,026 minutes and participated in "only" two national team tournaments.

Cumulative appearances evolution and key events



Source: Football Benchmark analysis

XAVI VS PEDRI – EVOLUTION OF CUMULATIVE APPEARANCES

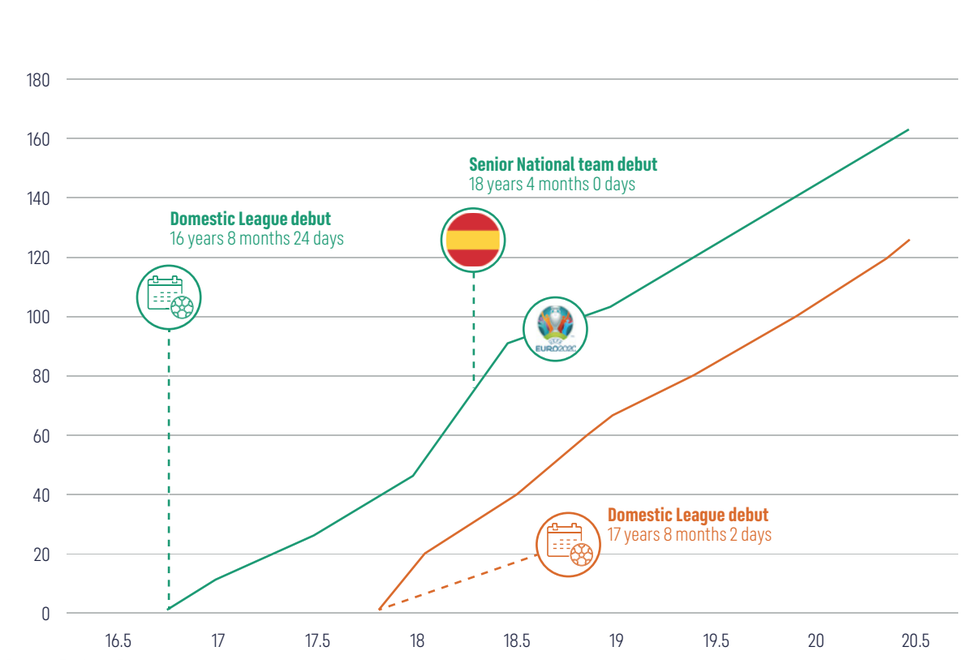
XAVI

PEDRI

Due to their similar playing style Pedri is often considered by many to be Xavi's successor at FC Barcelona. Pedri started his career earlier than Xavi did, and by the time he was 18 years old, he had already played over 3,000 total minutes, which is more than double what Xavi had at the same age. By the age of 20 and a half, Pedri had already exceeded 12,000 minutes played, which is 25% more than Xavi's comparable metric.

Interestingly, they both made their first senior appearances in lower divisions of Spanish football (Xavi in the third and Pedri in the second tier). Xavi had to wait for his first game with the La Roja after his 20th birthday, while Pedri had already left his mark on the Spanish senior national team by starting in UEFA EURO 2020 and later at the Tokyo Olympics (U23). This resulted in an incredibly demanding schedule for the talented midfielder, playing in 78 matches over a period of 12 months with virtually no opportunities for prolonged rest in-between. These circumstances highlight the necessity for mandatory safeguards and enforcement mechanisms to protect the well-being of today's players.

Cumulative appearances evolution and key events



Source: Football Benchmark analysis

RONALDINHO VS VINÍCIUS JR. – EVOLUTION OF CUMULATIVE APPEARANCES

RONALDINHO

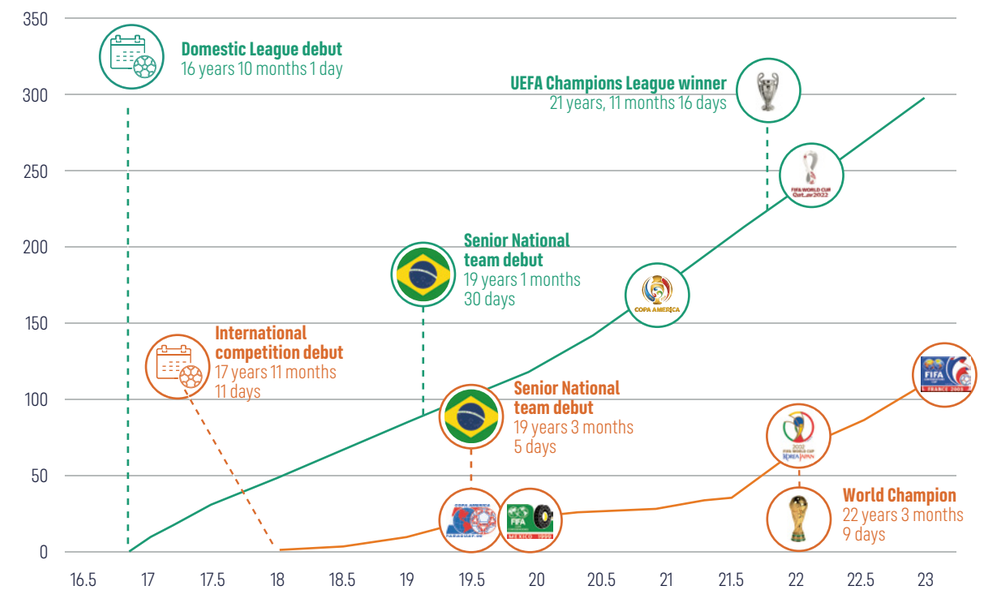
There are similarities between the games of Vinícius Jr. and Ronaldinho with both always eager to take on defenders. As a Ballon d'Or winner, the legacy of Ronaldinho is well-established, while Vinícius has had a good start, being instrumental to Real Madrid's Champions League success in 2021/22.

However, from an early workload perspective, the two players are quite different. Vinícius started his professional career significantly earlier, playing first-team football before he turned 17. He was already up to 2,000 minutes (over 49 matches) by the time he was 18; at the same age, Ronaldinho had just made his debut. The "minutes and appearances gap" between the two grew even wider over time. Currently, the Real Madrid winger has more than three times as many career minutes played (18,876 minutes) as Ronaldinho at the same age (7,607 minutes). The latter accumulated around 50,000 minutes over his entire career; Vinícius could easily surpass that by his early 30s (injuries permitting).

VINÍCIUS JR.

Cumulative appearances evolution and key events

Ronaldinho — Vinícius Jr.



Source: Football Benchmark analysis

08

THE COST OF PLAYER INJURIES

The unprecedented calendar congestion within season 2022/23 has unfortunately contributed to an extremely high incidence of injuries across leading players and markets. Even though players are the most important determinants of a club's on-pitch (and by consequence, financial) success, the provisions and safeguards for their safety and recovery are often inadequate. In this chapter, we explore the injury statistics from selected major leagues, as well as the cost of injuries to clubs and other stakeholders in the game.

08 / PLAYER INJURY OVERVIEW: SEASON 2022/23

INJURY OVERVIEW OF 2022/23

The modern game continues to become more and more physically and cognitively demanding, with players expected to perform at a higher level of physical and mental intensity than ever before, often without adequate rest and recovery time. Inevitable injury setbacks arising from this environment can have severe consequences, affecting a player's career trajectory and impacting the fortunes of players, clubs, and rights holders (competition organizers).[1]

To better understand the impact of injuries in professional football, this section analyzes the injuries sustained by players in the five major European top divisions of England, Spain, Italy, Germany, and France. With a comparable number of teams representing each of them on the international stage, these leagues are ideal for comparison. The analysis covers most of the 2022/2023 season, from July 2022 until the end of April 2023.

It should be noted that obtaining accurate data on the number and type of injuries is challenging, as clubs are not required to publish all injury details. The data presented in this section is based on Football Benchmark research of injuries reported in the media and is therefore not a complete database.

Nevertheless, this data can provide valuable insights into the incidence and impact of injuries in professional football. Furthermore, this analysis only covers absences related to injuries and does not include those resulting from suspensions or illnesses.

Finally, soft tissue injuries are also examined separately in this section. This injury type refers to damage sustained by the muscles, ligaments, and tendons in the body. While they can be caused by various factors, including sudden impacts, overuse, or poor training practices, they are often associated with overload, accumulated fatigue, or insufficient recovery before subsequent exertion. Examples of soft tissue injuries include muscle strains and contusions.

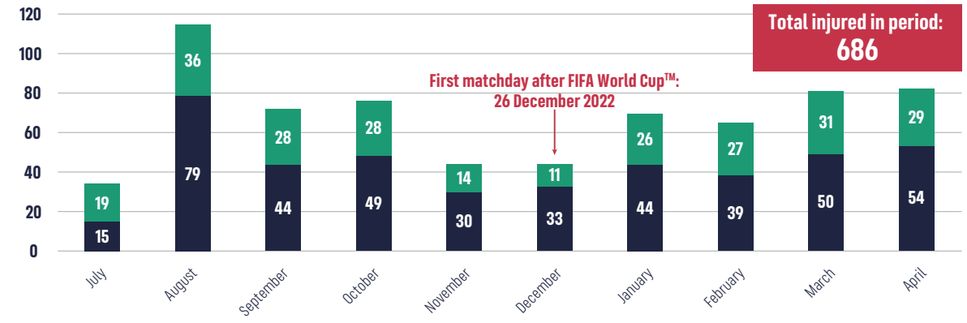
In summary, there were **over 3,000 reported injuries** in the analysed five leagues (64% of them were soft tissue injuries). Considering that there are 98 clubs in these leagues, the average number of reported injuries per club exceeds 30. This once again highlights the increasing physical demands and challenges faced by professional football players. Within the analysed leagues, interesting insights can be observed, particularly in relation to those who paid greater attention to essential player workload safeguards.

1 Eliakim, Eyal & Morgulev, Elia & Lidor, Ronnie & Meckel, Yoav. (2020). Estimation of injury costs: Financial damage of English Premier League teams' underachievement due to injuries. BMJ Open Sport & Exercise Medicine. 6. e000675. 10.1136/bmjsem-2019-000675

English Premier League

During the 2022/23 season until the end of April, almost 700 instances of injuries were reported in the English Premier League. Out of these, approximately 63.7% were categorized as soft tissue injuries. In December, soft tissue injuries were especially prevalent, with three out of four being of this type. Scheduling adjustments created a sizeable "backlog" of matches that had to be completed in the spring months. This ultimately added more congestion to the post-World Cup fixture list and led to a higher number of injuries.

Reported injuries during 2022/23 season by month (EPL)
Until April 2023

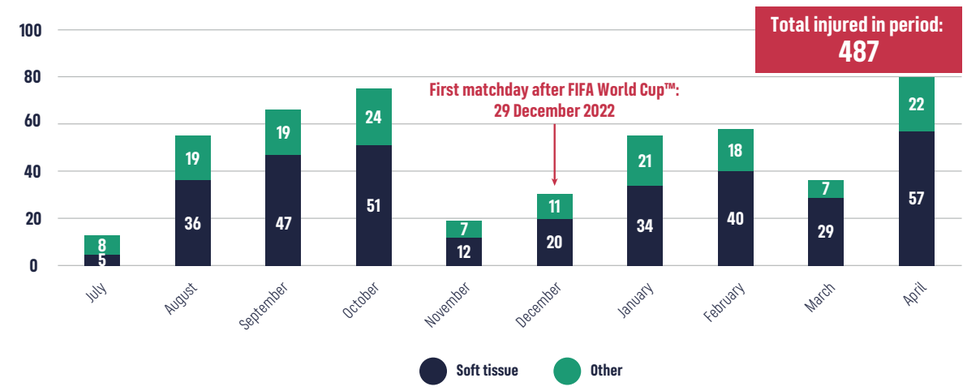


Source: Football Benchmark analysis

Spanish LaLiga

The Spanish top-flight recorded a total of 487 injuries this season until the end of April 2023, with over 68% of them being soft tissue related. Notably, October and April were the most critical months in terms of occurrence, while March had an alarmingly high rate of soft tissue injuries (four out of every five). This could be an outcome of fixture congestion and post-World Cup fatigue negatively impacting player health.

Reported injuries during 2022/23 season by month (LaLiga)
Until April 2023

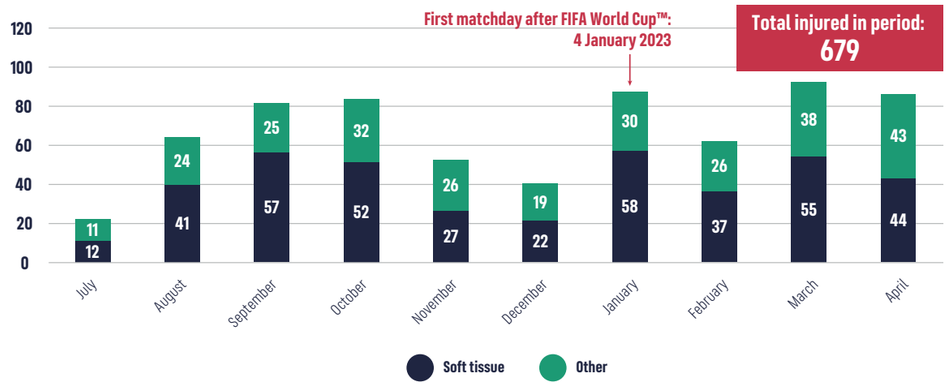


Source: Football Benchmark analysis

Italian Serie A

Over the course of the 2022/23 season in the Italian Serie A, there were close to 700 injuries, a similar number to that of the English Premier League. Soft tissue injuries accounted for 59.6% of all injuries until the end of April 2023. No fewer than four months of the season saw over 50 instances of this type, indicating a concerning trend. The data also shows a clear increase in injury numbers post-World Cup, as well.

Reported injuries during 2022/23 season by month (Serie A)
Until April 2023

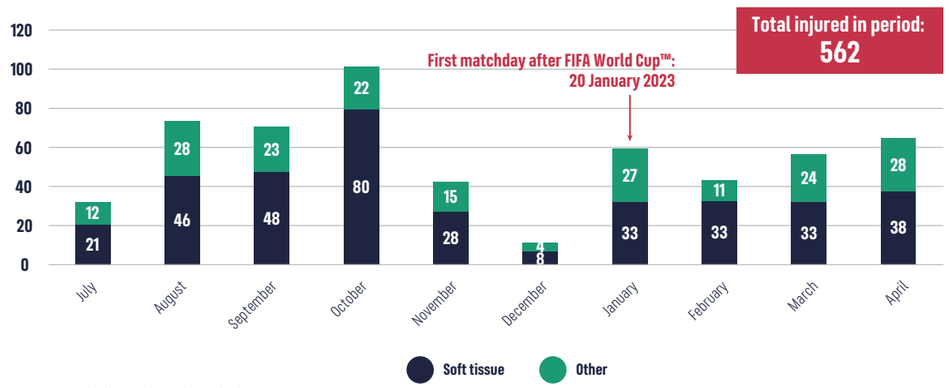


Source: Football Benchmark analysis

German Bundesliga

Even though there are only 18 teams in the Bundesliga (two fewer than in other "Big Five" leagues), the total number of reported injuries in the analysed period is on part with others at 562. The peculiar feature of the German top division is the peak in October 2022 (just before the World Cup) with 102. This is one of the highest among single-month figures among all "Big Five" leagues.
The busy schedule provides an explanation for this. In addition to league matches, the second round of the DFB-Pokal was held in October, as well as three European club competition rounds with eight German clubs (almost half of the league!) involved in either the Champions League, the Europa League, or the Europa Conference League.

Reported injuries during 2022/23 season by month (German Bundesliga)
Until April 2023

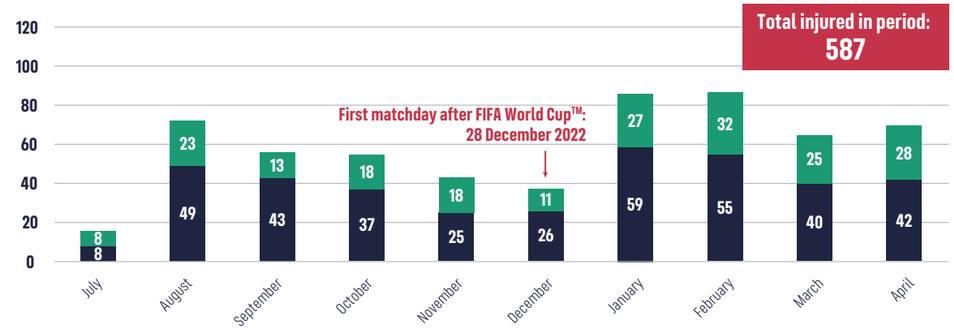


Source: Football Benchmark analysis

French Ligue 1

The injury record of French top division clubs followed a similar pattern to other top European leagues. The start of the season in July-August 2022 was heavily felt as almost 100 injuries were reported by the clubs. This was followed by a gradual month-by-month decline in the figure, mainly due to the Qatar World Cup and the forced pause to club football. However, the post-tournament restart seems to have been especially hard on the French league: around one-third of all their reported injuries in 2022/23 came in January and February as statistics suddenly peaked. Soft-tissue injuries were quite common in this period, accounting for 65% of all.

Reported injuries during 2022/23 season by month (Ligue 1)
Until April 2023



Source: Football Benchmark analysis

SPORTING AND ECONOMIC CONSEQUENCES OF PLAYER INJURIES

While player injuries undoubtedly have significant impact on a team's performance level, it is also important to recognize that the impact extends beyond just the sporting consequences. Key players forced to watch from the side-lines for extended periods can negatively affect team performance. Moreover, injuries can have a profound economic impact on the performances of the club, both domestically and internationally, as well.

The consequences do not stop there. High-profile players attract fans and elevate the value proposition of competitions, increasing revenue from ticket sales, sponsorships, and broadcasting rights. Therefore, it is crucial for all stakeholders, including clubs, fans, and leagues, to ensure that players are available to play and maintain the allure and competitiveness.

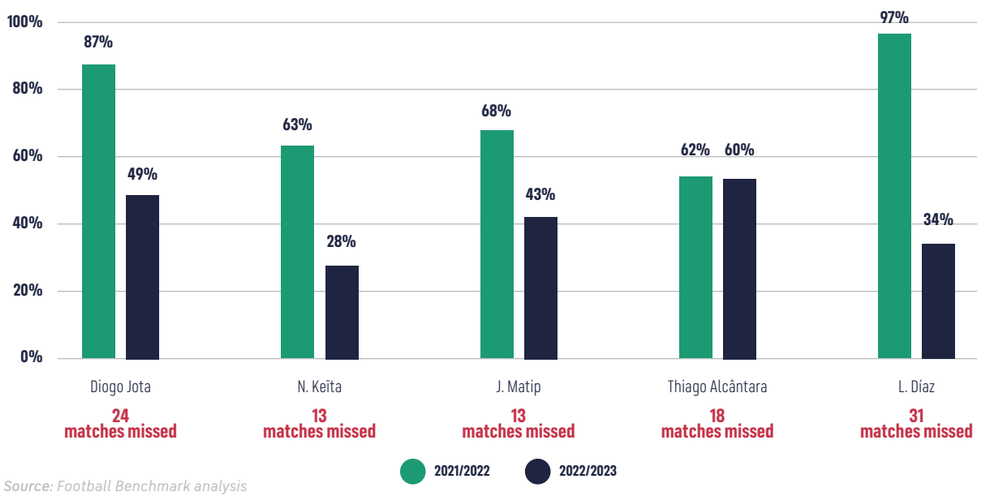
Through examining specific teams from the "Big Five" leagues, this section showcases the impact of player injuries from both a sporting and an economic perspective. The two teams chosen for analysis both experienced a decline in performance during the 2022/23 season compared to the previous one, partially due to injuries suffered by their key players.

LIVERPOOL FC (ENGLISH PREMIER LEAGUE)

Liverpool FC, who were contenders for the league title until the last matchday of the previous season, have encountered significant obstacles in the 2022/23 season. The team has been struggling due to the unavailability of several key players, with injuries and fitness issues plaguing most of their games. As a result, 19 players have missed at least one English Premier League match until Matchday 35, which has been a major contributor to the team's declined performance.

Although there were other contributing factors, the absence of key players has certainly had an impact on Liverpool's performance this season, leading to them missing out on the UEFA Champions League spot for the first time since the 2015/16 season. The impact of this could be felt in the club's finances, as initial estimates suggest that they could miss out on as much as 60% of the revenue generated from UEFA competitions next season compared to this season even when winning the UEFA Europa League in 2023/24 besides the decreased income from the central distribution scheme of the English Premier League.

Percentage of matches played (2021/22 vs 2022/23) and games missed due to injury in 2022/23



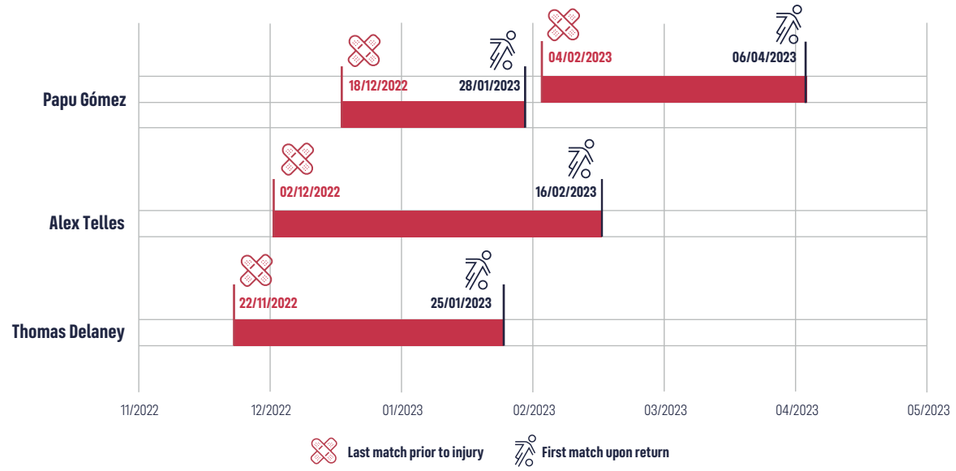
Source: Football Benchmark analysis

SEVILLA FC (SPANISH LALIGA)

Sevilla FC, a team with a strong track record in European club competitions over the last decade, suffered a noticeable dip in their domestic performance this season. Participating in multiple competitions requires a deep squad, but the team was plagued by a significant number of injuries throughout the season, including several long-term ones. Long-term injuries and re-injuries affected players like Tecatito Corona, Marcão, and Karim Rekik throughout the season.

The situation was exacerbated by international match windows. For example, following the 2022 FIFA World Cup™, three of the participating players returned carrying an injury: Papu Gómez (Argentina), Alex Telles (Brazil) and Thomas Delaney (Denmark). They were all out of action for at least 40 days after their tournament ended. What is more, Papu Gómez reinjured himself shortly thereafter and had to miss multiple moths following his return.

Sevilla FC international players that returned injured from the World Cup



Source: Football Benchmark analysis

Injuries continued to pile up during the March international window, with Bryan Gil withdrawing from the Spanish national team due to injury, and Pape Gueye being forced to cut short his stay with the Senegal squad. The month of April also brought bad news for the team, as Joan Jordán and Tanguy Nianzou joined the growing list of injured players.

Considering these injuries Sevilla FC faced an uphill battle to maintain their competitive edge on the domestic and European fronts. Unless they win the UEFA Europa League, they will not be participating in any continental competition for the first time in 10 years, losing significant percentage of their revenue.

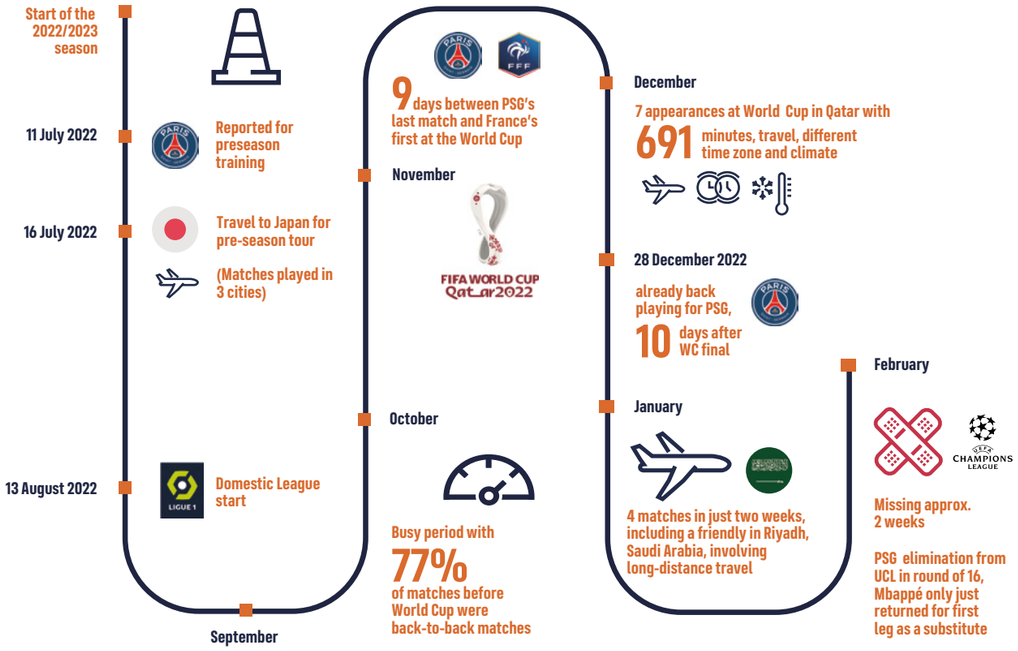
Injuries were certainly a significant contributing factor to Sevilla FC's underperformance this season, which was compounded by other challenges faced by the team. This situation is not unique, as many teams can fall victim to an injury crisis that can hinder their overall performance and have ripple effects on club finances. It is thus very important for clubs to prevent these crises from happening as much as they can.

Other clubs missing key players in key moments

Injuries to star players not only affect individual clubs but also have a negative impact on the overall competitive balance and commercial value of football competitions. The absence of exceptional talents weakens teams and diminishes the intensity and unpredictability that fans crave.

Kylian Mbappé was one of the latest examples of this as he was unable to fully recover for the first leg of Paris Saint-Germain FC's tie with FC Bayern München in the UEFA Champions League Round of 16.

Kylian Mbappé workload journey – 2022/23



Source: Football Benchmark analysis

It should be in the best interests of all stakeholders involved to prioritize player welfare, prevent injuries, and mitigate the impacts if they happen and ensure proper rehabilitation.

09

IMPLICATIONS OF COMPETITION REFORMS

The expansion of the UEFA Champions League and the FIFA Club World Cup, alongside the expanded FIFA World Cup™, are expected to bring further calendar congestion for players. While there has been a lot of discussion about these plans in recent times, the players' perspective seems to have been lost. In this section, we look at the two expanded club tournaments' potential impact on the match calendar.

09 / IMPLICATIONS OF COMPETITION REFORMS

CALENDAR COMPARISON: 2021/22 VS 2024/25

New calendar after Champions League and Club World Cup changes

+9

new matches extending the season

Source: Football Benchmark analysis

The new format for the **UEFA Champions League**, implemented from 2024/25 onwards, features an important change to the structure of the tournament. In addition to increasing the number of participants from 32 to 36, the traditional group phase with eight groups will be replaced by a single group under the "Swiss model". Each team will play 8 matches against different opponents with the top eight qualifying directly to the knock-out stage. Clubs placed between 9th and 24th position will face each other in a double-legged play-off to join the eight others. If a team were to progress all the way to the final via this additional play-off round, they would have played 17 matches instead of the 13 that is possible in the current structure.

This change is expected to increase UEFA revenue streams, as well as improve the chances of top clubs to compete and progress in the tournament. This partially came as a response to the threat of the European Super League project.

The new **FIFA Club World Cup** format will also kick-off in in 2025. The tournament will be expanded from seven to 32 clubs and will feature a group stage. A club reaching the final could end up playing seven matches, a significant increase.

The Club World Cup is expected to take place in June-July, which is just after the end of the long club season for the majority of participants. This will undoubtedly **further decrease the off-season rest period** for many players and raise concerns about their ability to fully recover in time for the new season. In addition, high travel load will also be associated to the tournament.

The reforms of the two major tournaments **will ultimately increase the number of games played by top players** who could conceivably feature in both. This poses a threat to the well-being of players who are already pushed to their limit with the current international match calendar.

CALENDAR PROJECTION: LEADING PLAYER

	All potential games of a top player in 2021/22	Diogo Jota's 2021/22 calendar	All potential games of a top player in 2024/25 (projection)	Diogo Jota's 2024/25 calendar (projection)
Premier League	38	35	38	14
FA Cup	6	4	6	4
EFL Cup	6	5	6	5
Community Sheld	1	-	1	-
UEFA Champions League	13	11	17	14
FIFA Club World Cup	2	-	7	5
UEFA Super Cup	1	-	1	1
Total club matches	67	55	76	62
National team matches	13	9	13	9
Total matches	80	64	89	72

+11%

Up to 11% possible increase in match load

Source: Football Benchmark analysis

Note 1: competitions linked to the results of the previous season (e.g.: UEFA Super Cup and Community shield) are also included in the analysis.
Note 2: we assume that the number of national team games in 2024/25 will remain unchanged compared to 2021/22.

To illustrate the extra burden the competition reforms could bring to top-level footballers, let us compare the current setup with the 2024/25 season (when the competitions' structural reforms are set to kick-in). For this exercise, we summed up the theoretical maximum number of games a player of a top English Premier League club could participate in, assuming that they make it to the final of every competition.

The 2021/22 season was selected as the baseline as that one did not include a major national team tournament for the majority of players. With the new formats of the UEFA Champions League and the FIFA Club World Cup, the number of all potential games available for a top player increased from 80 to 89 games (including national team appearances). These additional nine games equate to an 11% increase. With the additional inclusion of pre-season fixtures, and particularly the increasing proliferation of organised pre-season tournaments featuring leading European clubs in the United States, possible match totals for leading players will push into the 90+ per season range.

What is the expected impact in practice on a player? Let's take the example of Diogo Jota from Liverpool FC. In the 2021/22 season the forward was one of the most frequently utilised players of the team with 55 appearances as they reached the finals of three cup competitions. In addition, he also played for the Portugal national team on nine occasions. Assuming Liverpool can become similarly successful in 2024/25 with an expanded calendar, Jota plays a similar share of matches like he did in 2021/22, and the number of national team games remain the same, then he could be on the pitch in 72 matches. In other terms, **he would play 1.5 times every week throughout the season.**

On top of that, as observed previously, the player will not have enough rest days at the end of 2024/25 season to prepare for the following season due to his involvement in the FIFA Club World Cup during the summer. Although this is only a projection, given the pressure on clubs to always play their best line-ups, such extreme workload could soon become the reality for many.

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TRANSITIONING TO THE PLAYER WORKLOAD INDEX

With the introduction of the Player Workload Monitoring (PWM) data platform in 2021, our aim was to provide a player-centric perspective on workload in the football industry and to accurately monitor the increasing workload demands placed upon professional players to raise greater awareness around the need for necessary player safeguards and more sustainable match calendars. Now, we would like to take the initiative one step further and introduce the Player Workload Index (PWI), which aims to make player workload even more accessible through a simple metric capable of summarizing and comparing the workload of professional players from several different perspectives.

METHODOLOGICAL FRAMEWORK OF PWI

With the physical and mental demands placed on players reaching unprecedented levels over recent years, there is a growing need for accurate and comprehensive measures of player workload. In response to this, FIFPRO has created the Player Workload Index (PWI) as a component part of the Player Workload Monitoring (PWM) platform. While the full launch of the Index will take place over the year ahead, in this report we would like to introduce the main components.

The objective was to support the discussions around player workload with a simple, easily explainable, and comparable metric that captures most important aspects of what a professional player needs to deal with.
Developed jointly by FIFPRO and Football Benchmark and validated by experts in sports science and performance analysis, the PWI consists of four pillars. The overall PWI of a player at a given time is the weighted average of the four pillars.

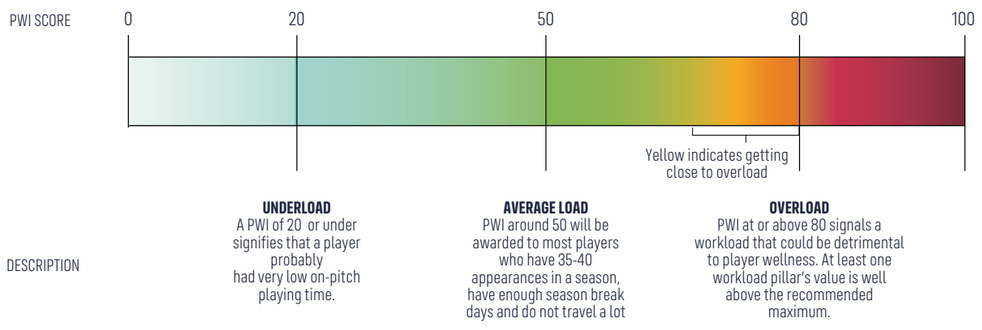
ON-PITCH WORKLOAD – indicators related to match workload such as number of appearances and minutes played, as well as metrics related to back-to-back matches are combined into a single measure.

REST TIME – rest and recovery time allowed between matches during the season. Special focus is given to long runs of back-to-back match appearances.

TRAVEL LOAD – indicators of international, cross-border air travel such as travel distance and time-zone crossings make up this pillar.

SEASON BREAKS – time spent entirely outside the club and/or national team environments. Both off-season and in-season breaks are considered for this pillar.

For each player, the PWI is presented on a 0-100 scale. When a player's PWI score reaches 80, it indicates that they are nearing the maximum workload threshold recommended by experts. To support the intuitive understanding of the concept, PWI values are also displayed using a colour scheme imitating traffic lights:



The PWI at a given time always encompasses the workload metrics of the player over the past 12 months. Changes in the score over time indicate fluctuations in player workload due to one or multiple factors. The PWI can also be utilised as an "early warning system": when a player's score shows an upward trend for an extended period of time and approaches "overload" levels, then it potentially means that they should be afforded some rest in the interest of their long-term well-being.

In the following sections we further illustrate the inner workings of the PWI by listing the current top 10 list of players with the highest PWI score at the end of the 2022/23 season, as well as by showcasing its evolution over time though the example of selected players.

HIGH PWI SCORES FROM AROUND THE WORLD

Period considered: (1 May 2022 - 1 May 2023)

Player name	Postion	Nationality	League - Tier	Conferedation of league	PWI score
European leagues					
Bruno Fernandes	Midfielder		England - 1	UEFA	**94.7**
Attila Szalai	Defender		Turkey - 1	UEFA	**94.1**
Federico Valverde	Midfielder		Spain - 1	UEFA	**91.4**
Odysseas Vlachodimos	Goalkeeper		Portugal - 1	UEFA	**91.1**
Marquinhos	Defender		France - 1	UEFA	**86.6**
Lautaro Martinez	Forward		Italy - 1	UEFA	**85.9**
Hyun-Seok Hong	Midfielder		Belgium - 1	UEFA	**85.7**
Joao Cancelo	Defender		Germany - 1	UEFA	**85.6**
Orkun Kökcü	Midfielder		Netherlands - 1	UEFA	**80.8**
Alistair Johnston	Defender		Scotland - 1	UEFA	**79.3**
Leagues outside Europe					
Gustavo Gómez	Defender		Brazil - 1	CONMEBOL	**85.5**
Jesus Angulo	Defender		Mexico - 1	CONCACAF	**84.6**
Anthony Contreras	Forward		Costa Rica - 1	CONCACAF	**84.4**
José Cifuentes	Midfielder		United States - 1	CONCACAF	**83.0**
Ali Maâloul	Defender		Egypt - 1	CAF	**82.1**
Derlis Gonzalez	Forward		Paraguay - 1	CONMEBOL	**74.9**
Valeri Qazaishvili	Midfielder		South Korea - 1	AFC	**73.3**
Saud Abdulhamid	Defender		Saudi Arabia - 1	AFC	**68.6**
Yahya Jabrane	Midfielder		Morocco - 1	CAF	**65.0**
Craig Goodwin	Forward		Australia - 1	AFC	**55.7**

Source: Football Benchmark analysis

Note: only players who are in the PWM platform's sample of 1,500 players were considered.

Considering the wide variety of leagues from around the world featured in the PWM platform, we selected a 20-player sample with each of them representing a different domestic league. Their common feature is that they have the highest Player Workload Index (PWI) scores within their leagues among the players who are currently included in the PWM platform.

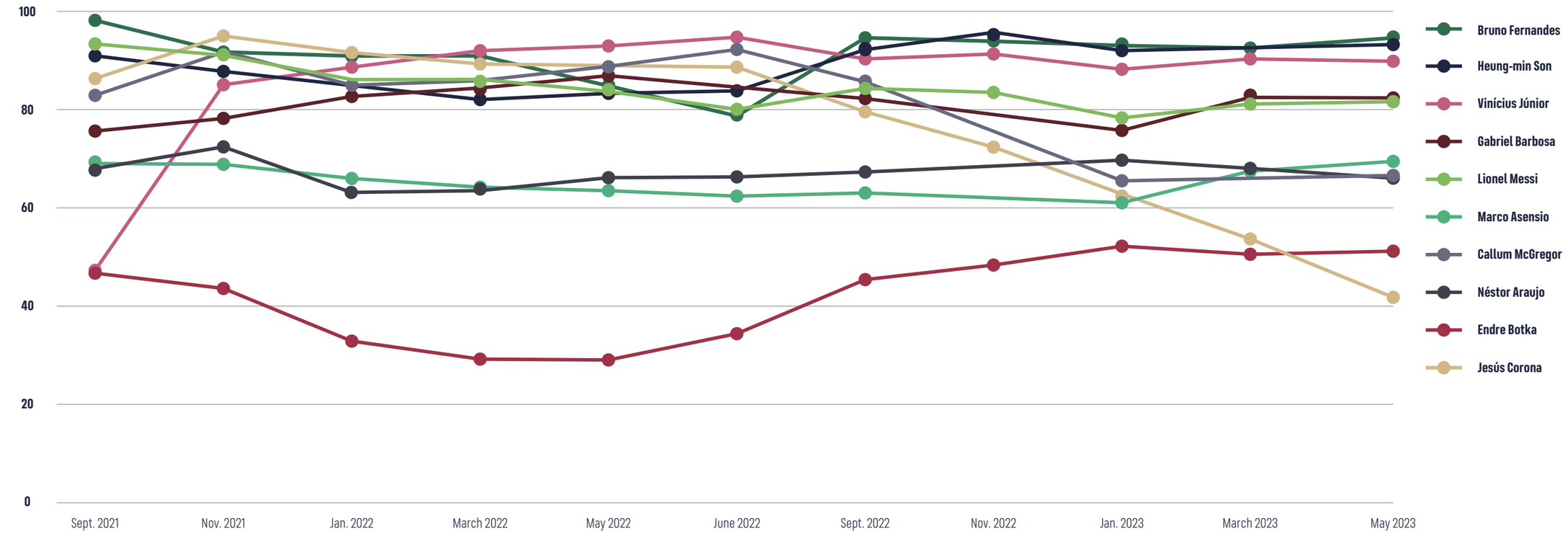
The selection represents a diverse range of positions and age groups (from early 20s to late 30s). Goalkeepers were also considered, even though they possess an inherent "advantage" in PWI terms due to their typically higher playing time than other positions.

Besides minutes played, numerous other factors can contribute to a high PWI score, such as match load, limited recovery time, reduced season breaks and extensive travel. Bruno Fernandes (whose workload is analysed in more detail in the 'Players In Focus' section of the report), leads the overall ranking in the sample as a result of his gruelling match load coupled with considerable international trips and limited time for rest and recovery.

The table shows that top European leagues are where players are expected to have the highest PWI scores, especially if they are national team players who regularly have to travel to other continents on international duty. It is also interesting to note that none of the players from AFC (Asian) leagues reached the 80 threshold. This could partially be attributed to the AFC Champions League currently undergoing a major format change: as it switches to an autumn-spring format, there have been fewer matches than usual in the analysed period.

HISTORICAL EVOLUTION OF PWI

Evolution of PWI of selected players since 1 September 2021



Source: Football Benchmark analysis

In this section, we introduce the PWI concept from another perspective. Instead of a ranking at a single point in time, hereby we present the PWI rating's bi-monthly evolution for a sample of players, starting from 1 September 2021 until 1 May 2023. The players showcased here were chosen to reflect diverse profiles (players without international workload, regular national team players, etc.) to demonstrate the PWI's effectiveness in capturing the nuances of workload and its applicability across various player profiles. From domestic talents to international stars, this selection enables a comprehensive evaluation of workload dynamics, presenting the Index as a valuable tool for monitoring. Through the tracking of changes in PWI ratings over time we gain a deeper understanding of how player loads fluctuate between and during seasons and it also allows us to assess the impact of factors such as injuries, international competitions, fixture congestion, etc.

Experts recommend a maximum PWI of 80; this threshold serves as a reference point to evaluate the workload of players and identify potential risks associated with overexertion. Elite players like Heung-min Son consistently surpass this threshold, which poses a severe danger to the physical health, mental health and career longevity of the player.

The impact of intra-season changes is exemplified by Bruno Fernandes, whose increased match workload during deep cup runs in 2022/23 and FIFA World Cup™ participation affected all four pillars of PWI. Conversely, Jesús Corona missed the event in Qatar due to a severe injury sustained at the beginning of the season: as he had to miss a lot of time, his PWI score gradually started to decline. Similarly, Callum McGregor, a prominent player for Celtic FC, experienced a decrease in his PWI after an injury in October 2022, which caused him to be sidelined for a little while. On the other hand, players like Marco Asensio, who have limited starting opportunities, typically fall below the 80 threshold. Likewise, Endre Botka, who plays in a league of only 12 teams, experienced a less demanding schedule, even when engaged in international cup competitions with Ferencvárosi TC and playing national team football for Hungary.

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METHODOLOGY

The findings presented in this flash report are largely based on the methodology and metrics of the FIFPRO Player Workload Monitoring (PWM) platform covering the match, rest & recovery, travel, and other workload statistics of professional footballers from around the world.

TERMS & DEFINITIONS

The following terms are used throughout the report to illustrate the workload situation of professional football players. The same principles are applied within the FIFPRO PWM platform.

GLOBAL PLAYER AND COMPETITIONS

FIFPRO PWM SAMPLE – this report covers match schedule and workload data of 1,500 male football players that are part of the FIFPRO PWM data platform. All matches played between 1st July 2022 and 1st May 2023 are included in the analysis. In some cases, historical data of past seasons was also considered.

PLAYER WORKLOAD

PLAYER WORKLOAD – this term refers to all applicable workload indicators such as match workload, rest & recovery, and travel. The concepts of overload and underload relate to the imbalance between the load induced on players (match workload and travel log indicators) and their recovery (rest & recovery indicator). It is important to note that it is the cumulative exposure to overload or underload which really impacts on a player's health, performance, and career longevity.

MATCH WORKLOAD

MINUTES PLAYED AND APPEARANCES – the number of minutes spent on the pitch by a player during a match. Includes added time at the end of the first and second halves as well as any extra time required for competitions (where applicable). If a player played any length of time in a match, then it is accounted for as an appearance.

MATCH TYPE – matches played by a player are divided into various categories: domestic league, domestic cup, international club competition, national team matches and friendlies.

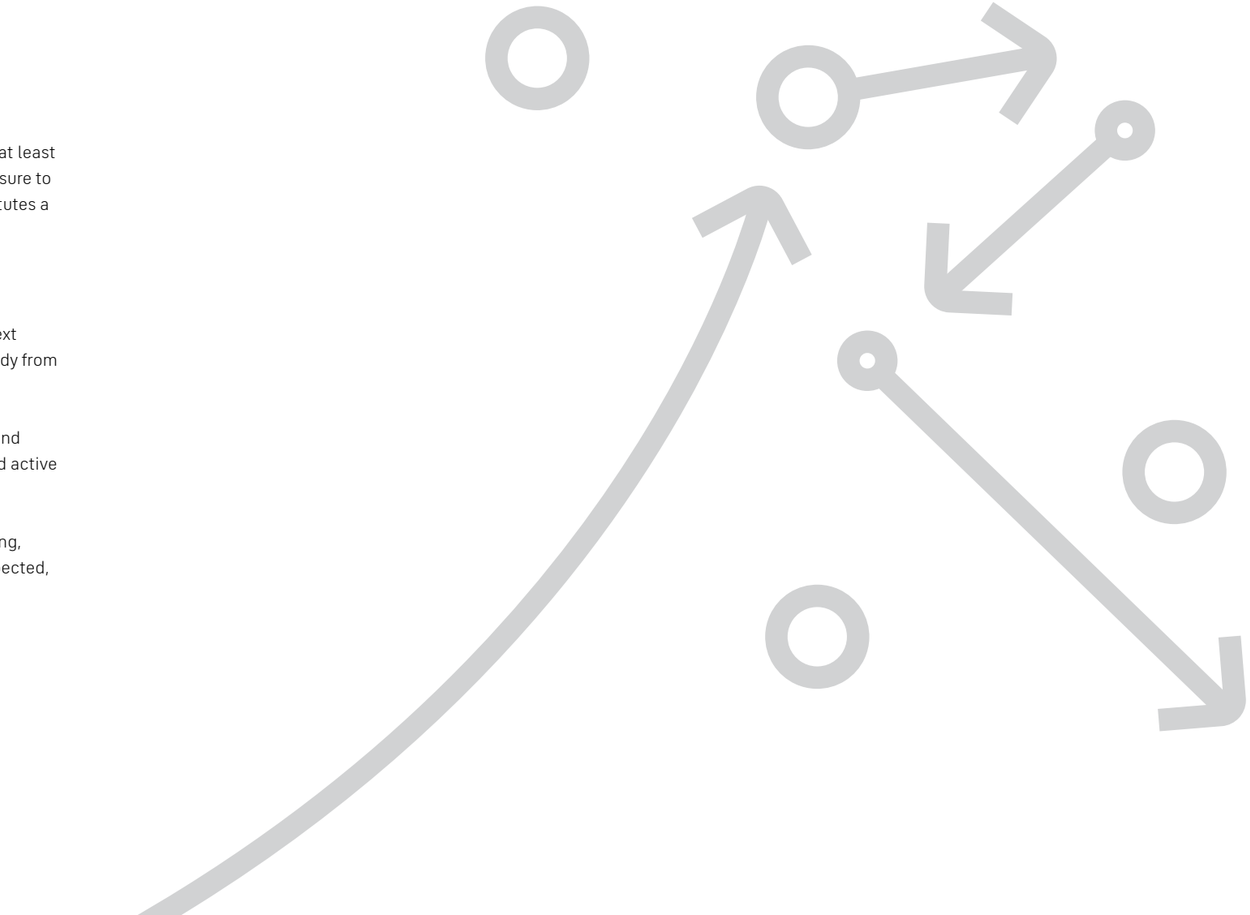
BACK-TO-BACK MATCH – an appearance is considered as a "back-to-back" appearance if the player did not have at least 5 days of rest and recovery time since their last appearance. It is important to note that it is the cumulative exposure to back-to-back matches, together with travel demands, and shortened off-season or in-season breaks, that constitutes a danger to player health, performance, and career longevity.

REST & RECOVERY

REST TIME – the period (in hours and days) between the end of a player's previous match and the start of their next match. This is generally the time allocated to rest & recovery and training. According to FIFPRO's 'At the Limit' study from 2019, players need at least 120 hours (5 days) between games to perform at their best and manage injury risk.

OFF-SEASON BREAK – the period given to players between two seasons, without training or matches, to recover and regenerate. Off-season breaks are mandatory, should last at least 28 days (combination of physically inactive and active weeks) and must take place outside the club and national team environment.

IN-SEASON BREAK – the rest period (in calendar days) that a player is permitted to take without matches or training, during a season. In-season breaks are mandatory and should last 14 days. However, they are not always fully respected, given the demanding requirements of the match calendar.



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