Expert Views

Protecting the Beautiful Game:
Understanding professional football in life underwriting

Extreme Sports
An Underwriting series

SCOR
The Art & Science of Risk

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Contents

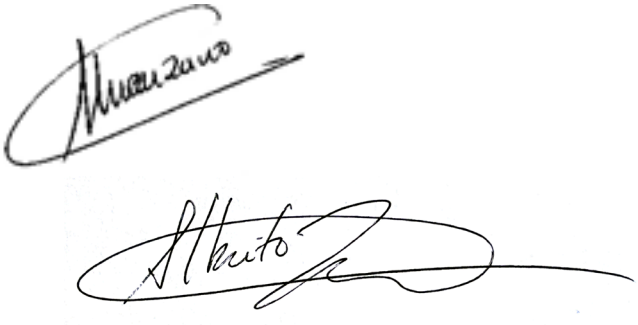
Executive summary

Football, also known as soccer, is the most popular sport in the world, attracting 50 million players and 3.5 billion fans worldwide. Professional players can earn a tremendous amount of money and fame. But people often forget that they also face significantly high health and life risks - injuries, chronic pains, concussions, mental health, cardiovascular risks, accidents, etc. To mitigate such risks, football clubs and players seek insurance protection. What risk factors should insurers consider when underwriting these athletes?

In this report, we will focus on health and life risks associated with professional footballers. Through our analysis, we provide underwriters and insurance professionals with a deeper understanding of how complex and increasing risks should be considered during the insurance application process. In addition, we feature two mock underwriting cases from different markets to give readers a glimpse of how SCOR's professional underwriters assess cases. We conclude by highlighting what factors to consider in underwriting high-profile professional footballers.

Authors' introduction

Football is the national sport in Spain, deeply rooted in our country's culture. Practically every Spaniard has a favorite team and is a loyal supporter of its colors. This passion is transmitted from generation to generation and in recent years especially to young girls, which has encouraged their amateur and professional practice of this sport. Moreover, the feeling for the national team is very strong, especially after the golden age (2008-2012) that Spanish football experienced when our national team won two consecutive European Championships and one World Cup, becoming an example of effort and values not only for the youngest but also for many people of adult age. As underwriters, we feel privileged to play a vital role in the protection of these footballers, who have given so much joy to our country. We also know that our work contributes to assessing and quantifying the risks they face every time they play a game. In this report, we would like to share with you our professional knowledge, in the hope that it will provide you with new perspectives and a deeper understanding of this sport, undoubtedly one of the most exciting and popular sports around the world.



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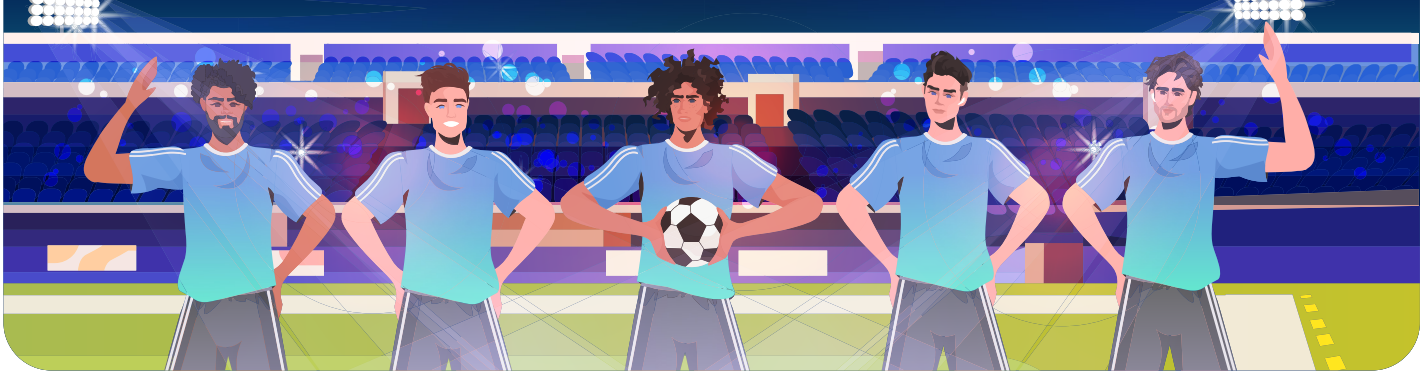


In a village near Göttingen in Lower Saxony all children played street soccer. Besides soccer, I was also actively involved in athletics, especially long jump, high jump as well as sprint disciplines. I started playing basketball at 16 years and moved all the way up to playing in the second Bundesliga for four years. The only sports medical examination carried out at that time was a lactate test. I had no serious injuries with a break of more than four weeks, but I'll never forget the bang I heard when another player tore his Achilles tendon. Even though everything was going great in my sport career, I started to rethink it when a team member got cancer in his early 30s. At the age of 26, I reduced playing basketball because of my family and job. Due to refined examination techniques and extensive sports medicine examinations nowadays, professional athletes, be it basketball or football players, are more frequently diagnosed with pre-existing diseases or abnormalities, e.g., of the heart. But under close monitoring, sports ability is often certified even in the case of special medical conditions. For me, as a former semi-professional athlete, these cases are of particular interest in medical underwriting as well as product development.

Thomas Bornemann, Head of Underwriting
SCOR Germany

As a child, I spent almost every weekend next to the football pitch, as both my older brother and father played football. For many years now, I have been a member and active fan of my local football team, Fortuna Düsseldorf. This club, founded in 1895, currently plays in the 2nd German Bundesliga. "If you're a Fortuna fan, you don't need to fear life" is a well-known saying among us fans. The club is our "moody diva"; you never know what surprises it has in store. Very successful in the 70s, followed by several relegations in the next decades, hitting the lowest point in 2003 when it slipped down to Oberliga Nordrhein. It bounced back after that, but the memory of touring through the small villages during the club's lowest period remains unforgettable for every fan who was there back then. Before the Covid-19, I also traveled to attend their away games, trainings, camps, and U23 (youth) team events. I slowed down a bit during the pandemic, but my passion for football remains unbroken. That is why it is great that I am also entrusted with the processing of sports risks as an underwriter at SCOR.

Tanja Andres, Senior Underwriter
SCOR Germany

Introduction to Professional Football

Football, also called soccer in some countries, is the most popular sport in the world, attracting 50 million players and 3.5 billion fans worldwide. It is a relatively simple sport, played between two teams of eleven players with a small round ball. But as French philosopher and novelist Jean-Paul Sartre once said, "in football everything is complicated by the presence of the opposite team."[1] Nicknamed "the Beautiful Game" by a legendary Brazilian footballer Pelé, no other sport has more power to ignite passion and bring so many people together.

Football is also the biggest sports business in the world, generating more than $20 billion in revenue just for the top five major leagues in the world, easily surpassing other mega sports such as American football and basketball. Elite professional players (called "footballers" in this report) earn a significant amount of money and fame. But such perks also come with high risks. Injuries, sicknesses, poor performance and other unexpected challenges could end players' careers abruptly. To mitigate such risks, football clubs and players seek insurance protection. What particular risks should insurers consider when underwriting these athletes?

Imagine that you are a life insurance underwriter and receive the following applications:

Case 1:

Lucas, a 28-year-old professional footballer, plays as a center-forward for one of Spain's top clubs. His current team requests for his insurance coverage of €4,000,000 for death and total and permanent disability (TPD) (professional disability). He started his career at age 17 and has played with his national team nearly 30 times. His current market value is €4,300,000, up from €3,800,000 when he transferred from the previous team a year ago. He is in good health condition, but has had a number of surgeries due to a ruptured ligament in his left knee and a fractured shoulder blade. He made a complete recovery from both.

Case 2:

Max Mustermann, a 27-year-old mid-fielder, is a German professional footballer with market value of €20 million. He has been playing football since childhood and, trains 13 - 16 hours every week. His club is requesting a cover in the amount of €10 million. His internal medical history includes Covid-19 infection six months ago with a mild course, which caused him to miss one match. In addition, he suffered from muscle injury on his right thigh two years ago and took a sick leave of 14 days.

How should we assess these applicants' risk? We will return to these cases in the *Implications and Recommendations for Underwriting* section at the end of this report.

Overview of Professional Soccer/Football

History of football

The origin of football traces back over 5000 years ago in China, where the first known team game took place[2]. Similar games have been played throughout history and around the world since then, including Aztecs, the Ancient Greek and Roman Empire[3].

In England, ball games resembling football were played since the era of Romans Britain. In 12th century England, games that resembled football transformed meadows into immense playing field, as town people thronged from all around to participate as there were no limits on the number of players. The modern form of football was born when the Cambridge Football Rule was created in 1848. In 1857, the world's oldest football club was created in Sheffield. In 1871, the first Football Association (FA) national championship game was played, followed by the first international championship game.

In 1904, the Federation Internationale de Football Association (FIFA) was created to provide universal rules and unity among national football associations. Four years later, football became the official Olympic sport. Football's popularity kept growing exponentially in Europe and other regions[4]. In 1930, the first FIFA World Cup took place. Today, football has become the world's most popular sport, with five billion fans around the world[5].

Soccer or football?

Football is also called "soccer' in some parts of the world, including the USA, Australia, New Zealand, Ireland, Japan, Korea, South Africa and many Southeast Asian nations. The word "soccer", however, is British in origin. The sport was once called "assoccer," when students at the University of Oxford distinguished it from other types of football - "rugger" ("rugby") in the 1880s. It was then further shortened to "soccer." Meanwhile, a distinct sport developed in the US, which was locally referred to as "football" and has become globally known as "American football"[6].

In this report, we will use the term "football", not "soccer" to address this sport.

Today's professional leagues, governance, and championships

FIFA, the world's most powerful sports organization with $5.5 billion in assets and $766 million in revenues around the world[7], acts as the governing body. It is composed of both men's and women's clubs and is made up of 205 member associations with over 300,000 clubs and 240 million players. FIFA also has regional confederations, including UEFA (Europe), AFC (Asia), CAF (Africa), CONCACAF (North, Central America, and Caribbean), CONMEBOL (South America), and others.

There are also private organizations, such as English Premier League, that run their own competition, rule book and media rights, and leagues that are owned by multiple clubs, such as Bundesliga, or leagues partially sponsored by private institutions such as La Liga[8]. Under those premier elite leagues, there are countless other professional leagues.

Today's football players

Professional footballers' labor conditions and salaries vary.[9] Many earn millions of dollars, but top players earn significantly more, exceeding $100 million per year[10]. Furthermore, many top players in European Leagues also receive additional revenues from multiple sources, including bonuses, transfers, national team payments, endorsements, advertisements, publications, and others.[11] This makes soccer/football players the world's highest-paid athletes[12].

But these high revenues do not come without sacrifices. Football is one of the most demanding sports for athletes. Elite football players in European soccer teams have in excess of 60 competitive matches in a 45 week season[13]. In addition, those players often play games for their national teams at league championships such as European Championship, Copa America, or the

FIFA World Cup. As a result, matches are often played within a short period of time (<48 hours), adding stress to already training-packed football players' daily workload.

Since the 1970s, the number of matches of typical European Cup champion teams has increased from 40 to 70. The length of time spent traveling has also significantly increased, adding more stress to already exhausted footballers[14]. Standard contracts of major football leagues states players are entitled to certain amount of paid holidays[15]. But footballers often do not take adequate breaks for various reasons, exposing them to a higher risk of injuries[16].

Types of insurance coverage for football players

Professional football clubs provide various types of insurance to cover their players' mortality and morbidity risks. Here are major types of insurance coverage:

1. Group life and health insurance

Insurance policies often cover players throughout the year. The policy, owned by the club, may insure all or selected players proportionally or unproportionally. Structure of the coverage is determined by multiple factors such as the team or each player's value including recent transfer fees, sporting merchandise sales, commercial value to the club, etc. Team coverage usually includes matches played by the national team, so insurers cover not only league games but also international matches such as World Cup games as well. Types of typical group insurance include:

- Accident or sickness which prevents a player from playing as a footballer
- Medical expenses
- Disability – Total and permanent disability (TPD)/career-ending insurance, permanent partial disability or temporary total disablement or partial disability/wage protection
- Death - Accidental death or any cause, funeral expense, etc.
- No rehabilitation clause (specifies no set period over which a player is deemed to have made a recovery)
- Proportionate benefit clause (claims are covered if degeneration plays a part but is not the root cause of disablement)[17]

How do insurers determine the condition of the coverage for each player? In this type of insurance, insurers often receive the entire list of football players on the team, each one with his/her corresponding sum insured. That sum for each player is calculated by the club depending on criteria, often taking into account player's current market value, his career projection, and the transfer fee paid by the club.

Underwriters follow the criteria set out in their company's professional athlete underwriting guidelines. When the face amount of a club's policy is lower than a certain amount, underwriters require minimal information such as a standard medical report for player. But if the amount exceeds the face amount limit, the underwriter likely will request more comprehensive medical information including full blood and urine tests as well as an informed cardiovascular examination including EKG, stress test, echocardiogram questionnaire, etc. In case of previous injuries of athletes, additional medical reports may be requested.

2. Individual insurance for players

In addition to the group policy footballers are automatically covered through their club's insurance program, they also often apply for individual insurance separately, mainly to cover other risks such as mortgage loans or their assets. In these cases, insurers assess them in the same manner as other professional athletes. Underwriters will conduct a thorough analysis, including the athlete's financial information, in-depth health analysis, lifestyle, litigation history, and other factors. The usual medical and financial underwriting practices will follow depending on level of the cover applied for and age of the player.

Types of typical individual insurance include:

Life insurance: Insurers sell life insurance policies to professional footballers. In most cases, it is treated as a high-net-worth athlete case like other athletes.

Personal accident and health: Insurers provide individual athletes with medical insurance, accidental death, or death by natural causes insurance. Some also provide mental health benefit that covers mental health counseling[18].

Disability insurance: Individual players can obtain disability insurance, including total and permanent disability (TPD), permanent partial disability, temporary total disablement, and temporary partial disability.

Specific body part insurance: Some high-profile footballers have insured specific parts of their bodies. For example, Lionel Messi reportedly has $750 million insurance coverage for his left foot.

Property and liability insurance: Insurers provide protection for personal assets such as households, cars, yachts, valuables, fine arts, etc. Some home and motor insurers, however, do not offer policies, or at least demand higher premiums for high-profile professional athletes due to their celebrity-like lifestyle[19]. There are specialist insurers that specifically cover those and offer policies for ultra-high-net-worth individuals.

Risks Associated with Professional Football

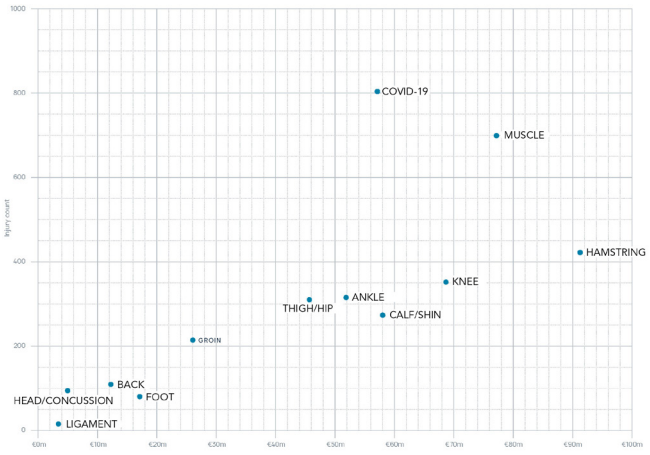
Professional footballers are exposed to various serious health risks. To make it even more complicated, those risks and symptoms are often interrelated, either simultaneously or in sequence. Understanding these risks and taking proactive actions such as early detection, self-awareness, proper management, and systemic support by coaches, clubs, and government bodies is highly critical for preventing or mitigating them.
Below are the major health risks footballers face throughout their careers:

1. Injuries

Football is a high-speed and close-contact sport with minimal protective gear; this nature of the sport leads to a high risk of injuries. Since footballers are not allowed to use their arms at most times during the game (except goalkeepers), the most common football-associated injuries affect the lower body, including hips, groin, thighs, hamstrings, knees, ankles, feet, calves, and shins. Foot/leg/knee/muscle injuries and surgeries (known as ligamentoplasties) are the most frequent issues footballers face.

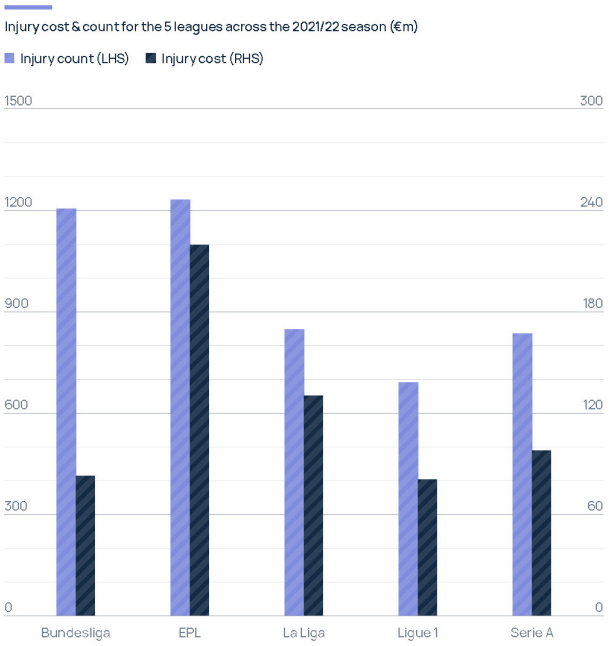
Howden's 2021/2022 European Football Injury Index report found that muscle injury recorded the highest injury count while hamstring injury cost the most (EUR 90 million), as shown in Figure 1[20]. A recent UK report also found that knee injuries, particularly cruciate ligament and meniscus injuries, accounted for 59% of all injuries[21].

Figure 1: Injury cost by body part, Source: Howden



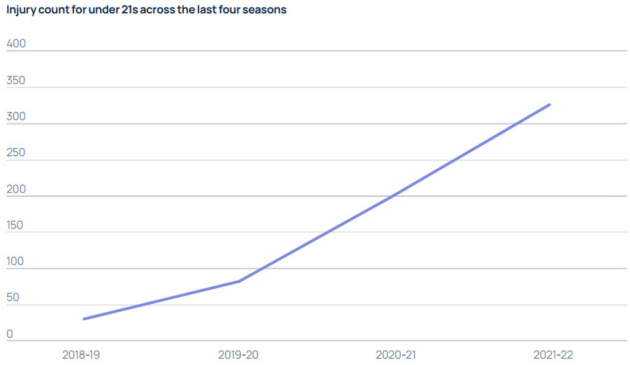
In recent years, footballers' injury cases have been on the rise. There are many possible contributing factors, such as extremely tight schedules due to the Covid disruption, the World Cup season, overworked players, insufficient pre-season break, etc.[22] According to the Howden European football injury index, the 2021/22 season experienced the record-high injury cost for nearly 100 clubs across the top five European clubs, totaling EUR 611 million, a 29% increase. According to a study of eleven top clubs in five European countries throughout the season of 2001-2002, the risk of injuries during the match was much higher in the English and Dutch teams than in France, Italy, and Spain[23]. English Premier Leagues suffered the most, both in terms of count and cost (Figure 2). Fixture congestion due to the Covid-19 disruption can be a possible cause[24].

Figure 2: Injury cost & count for the Top 5 European Leagues, Source: Howden



There is also a concerning trend that the injury rate of younger (under age 21) players has increased exponentially among top leagues, indicating clubs' increasing usage and reliance on younger players (Figure 3).

Figure 3: Injury count for under age 21 for Top 5 European League clubs, Source: Howden



2. Chronic pain and medicine/drug overuse

Frequent and recurring injuries can expose footballers to chronic pain sometimes requiring strong pain medications that can lead to drug addiction.

Since the 1990s, cortisone injections have become a common treatment to temporarily reduce pain. It is still used in some countries as a way to mask an athlete's pain, but some sources suggest it could cause an increased risk of additional injuries as well as depression[25]. Long-term and excessive use of opioids, heroin, cocaine, performance-enhancing drugs and prescription medications can lead to serious addiction issues, ending or shortening the players' careers, or even, their lives.

The accurate number of footballers who are suffering from drug addiction issues is unknown. According to a study on English professional footballers, many players said they use supplements and/or even occasional recreational drugs. Performance-enhancing drugs, however, appear to be rare[26].

3. Concussion, Traumatic Brain Injuries (TBIs), Dementia, and Alzheimer's Disease

Concussions and other types of traumatic brain injuries (TBI) are common among athletes. In football, this most often occurs during collisions with other players or when heading balls. Left untreated, TBIs may cause chronic traumatic encephalopathy (CTE), leading to a footballer's premature retirement, behavioral disorders, and/or even suicide.

Some players are taking legal actions against their clubs and confederations for not providing adequate measures for preventing and managing athletes' brain injuries[27]. A study in Scotland found that the overall risk of neurodegenerative disease was around 3.5 times higher in former professional football players than in the matched general population control individuals[28].

Studies also show an increased risk of developing dementia and Alzheimer's disease in older adults with a history of moderate and severe TBIs[29]. Premature mortality is a potential risk for moderate and severe TBI survivors as the risk of mortality from external causes (suicide, assault, etc.) and substance abuse increases.

Women footballers are particularly exposed to higher concussion risk. This could be because fewer women play other high-concussion-risk sports such as boxing, ice hockey, and rugby. Studies also suggest that female athletes are at greater risk of a TBI than male athletes, due to many possible factors, including female's physical structure, brain cell composition, etc.[30].

According to FIFA, one head injury occurs on average every third match in high-level international tournaments[31]. FIFA released its Medical Concussion Protocol in 2022, which provides a standardized approach to support team physicians in their decisions to allow footballers to play after a head injury.

During the latest FIFA World Cup held in Qatar, an independent Concussion Assessment and Rehabilitation Service was offered to provide an evidence-based assessment of any player who has suffered a brain injury, including recommendations from concussion experts regarding the player's return to play. FIFA also released a protocol allowing teams to use a maximum of one concussion substitute in a match without it counting towards their substitution limit[32]. Several regional leagues such as English Premier League and American MLS have implemented this FIFA protocol, but this has not always been applied in actual matches, as witnessed in the recent World Cup games[33].

4. Cardiovascular risk and sudden death

The intense physical demands of professional football expose players to high cardiovascular risk, sometimes leading to sudden death, which is defined as a natural, unexpected fatal event occurring within one hour of the onset of symptoms, in an apparently healthy individual, or in one whose disease is not so severe as to predict such an abrupt outcome, according to Cardiovascular Pathology.[34]

The number of sudden deaths among footballers is on the rise, with more than 20 cases reported in 2021[35]. Awareness of this risk is growing, especially after Christian Eriksen's near-sudden death during the Euro Championship match in 2021. Eriksen suffered a heart attack and collapsed on the pitch, but was revived thanks to immediate medical attention. He has recovered and returned to play now, becoming the first top-level footballer fitted with an Implantable Cardioverter Defibrillator, which can reset the heart in the case of a future cardiac arrest[36].

SUD was observed more frequently in Europe than in South America and North America, where cardiomyopathy and coronary artery anomaly are the major cause of footballers' sudden cardiac death. But perhaps even more concerning is the notable number of the younger generation (22% of <age 35) who also suffered sudden unexplained death (SUD) with a structurally normal heart at autopsy.

FIFA implemented several initiatives to help raise awareness about SCA in football players after the highly-publicized death of Marc Vivien Foé, a 28-year-old Cameroonian professional footballer who suffered an SCA on the pitch during the FIFA Confederations Cup 2003. Many football clubs and confederations are now implementing regular heart condition screenings. England's Football Association, for example, perform echocardiograms every two years and would not allow players to compete if they have not passed ECG tests.

5. Overtraining syndrome

Overtraining syndrome (OTS) is a pathological condition in which an athlete feels acute fatigue and experiences a drop in performance despite continuous and increased training. This could lead to serious health issues, including chronic fatigue, mood swings, mental illness, reduced motivation, weakened immunity and other injuries. There are several stages of this syndrome, starting with training fatigue and progressing to full-fledged overtraining syndrome if not treated properly[37]. Prevention measures include incorporating rest into a training program, managing stress adequately and raising awareness of this syndrome by both players and coaches.

6. Mental health

Modern professional footballers regularly face enormous pressure and stress, which could lead to a serious mental health crisis. Mental health risk is increasing in the modern football world due to overpacked schedules, extremely competitive culture, social media and other factors. A survey by FIFPRO (The Fédération Internationale des Associations de Footballeurs Professionnels) revealed that 38% of footballers had experienced depression with no adequate support[38]. There is a long list of footballers who have suffered anxiety, depression, alcoholism and other mental illness, some of them ending their careers or their lives[39]. As society is becoming more open about mental health, more elite footballers are publicly discussing their mental health issues.

7. Accidents

Professional footballers travel extensively all year, between playing and training at home to away-games for league matches and international competitions. Their tight schedules continue for nine months of the year or longer. They also often fly by private jets for privacy and convenience[40], exposing themselves to a higher risk of airplane accidents[41]. In 2016, for example, a Brazilian soccer team was on board a charter plane that crashed in Colombia, killing 71 people[42]. Professional footballers are also exposed to a higher risk of traffic accidents, often leading motor or car insurers to demand higher premiums[43].

8. Covid-19

Covid-19 affected almost everybody on the earth. Footballers were no exception. Howden's survey found that among the Top 5 European League players, there were 800 cases reported costing upward of EUR 60 million for the 2021/2022 season[44]. Little is known about the long-term effect of Covid-19 infection among footballers, but there are signs that some players were negatively affected severely even after recovering from Covid-19.

According to a survey by *The Economist*, Covid-19 shortened players' time on the pitch, and their pass performance was lower than those who did not suffer from Covid[45]. A study on Belgian male professional footballers also found that Covid-19 negatively affected players' overall well-being, stress levels and mood[46]. The longer-term effects of Covid-19 are yet to be revealed, but it is clear that the pandemic had a negative effect on many footballers' mental and physical health.

9. Risks by playing positions

Every footballer is assigned a specific position which requires a specific skillset and brings with it its own physical and mental challenges. A study evaluating the physical demands of English Premier League soccer of three different positions found significant differences exist among them. Defenders spend less time running and sprinting while midfielders perform significantly fewer turns than strikers and defenders[47]. Also, a study in Scotland found that outfield positions, especially defenders, have a higher risk of neurodegenerative disease than goalkeepers[48]. In insurance underwriting, however, medical differences among positions are not large enough among footballer positions so that underwriters generally assess each case without regard to player position.

Implications and Recommendations for Underwriting

Case Study 1:

Lucas, a 28-year-old professional footballer, plays as a center-forward for one of Spain's top clubs. His current team is requesting his insurance coverage of €4,000,000 for Death and TPD own (professional disability). Lucas started his career at age 17 and has played with his national team nearly 30 times. His current market value, as of December 2022, is €4,300,000, up from €3,800,000, which his current club paid his former team in 2020 to acquire his services as a result of a transfer agreement.
The player´s health declaration says he is in good condition. His medical history only includes surgery due to a ruptured anterior cruciate ligament in his left knee at age 26 and a fractured shoulder blade in 2019, which he overcame without sequelae. He has also suffered some concussions in the past, but fully recovered without complications.

Current medical tests enclosed with the insurance policy, including EKG and effort test, are within normal limits. The echocardiogram shows minimal mitral regurgitation, with the rest of the cardiological parameters unaltered. At the analytical level, he had a negative test for SARS Cov2, and the rest of the analytical values are also within normal limits.

How should we assess Lucas' risk?

For Lucas' case, we apply the standard criteria for group policies, with particular considerations to the following three aspects:

1. Complete identification of each player of the club under this group policy, including age, seniority, position, and the total amount of requested coverage.
2. Complete and current medical evidence within the 12 months
3. Financial data including the "transfer fee" paid by the club in combination with the current market value of the player.

Additional parameters such as the player's age, position on the field, or expected future professional projection must also be considered. All this information, which the club should provide, must be checked in parallel with an independent source. We recommend using specialized sites such as transfer markt (https://www.transfermarkt.com) to verify the information.

Underwriters also need to consider the capital accumulation issue and check whether the player has other policies in force (individual and / or group). Due to the international aspect of this profession, the player's application could have already been presented in other insurance markets, which have different limitations applicable to this type of risk. Specific claim exclusions as shown below also apply to underwriting footballers:

- Exclusion of any claim arising from the use of any doping substance or any substance prohibited by the competent sports authority. If the player were sanctioned for doping, the guarantees included in the insurance contract would be automatically suspended.
- Exclusion of any claim arising from the practice of risky activities or sports not expressly authorized in the employment contract signed between the club and the player.
- Exclusion of any pathology, injury and/or its sequelae and complications, originating prior to the entry into force of the policy.
- Suicide in the first year
- The consequences of alcoholism

It is not uncommon to underwrite players, especially those older than 30, with a history of injuries such as ligamentoplasties for ruptured knee ligaments. In such cases, and if TPD own cover is considered, it would be advisable to apply an exclusion such as "any disease or disorder of the knee (right or left) including complications and treatments."

In the case of sprains, fractures and/or arthroscopies without complications or sequelae, the risk can usually be accepted at standard rates, as the medical resources available to sports teams are assumed to be sufficiently advanced and reliable enough to treat such injuries successfully. For head injuries and/or concussions, it would be ideal to have a specific medical report that can determine when the episode(s) took place and, especially if there are any sequelae or limitations resulting from them.

In conclusion, considering this general approach and the specific characteristics of the case described at the beginning, our assessment on Lucas' case would be as follows:

- Given that TPD own cover is being requested, and because of the relatively recent history of his knee ligamentoplasty (only two years ago, at the player's age of 26), we would suggest an application of the following disability exclusion clause: "any disease or disorder of the left knee including complications and treatments."
- Considering his history of concussions (without determining the exact number of incidents), it would be advisable to obtain a recent CT scan result or a current medical report confirming that there are no sequelae or limitations derived from this clinical history.

Upon completing the analysis of all the other factors such as other medical tests, the amount requested, the transfer fee paid, his current market value, and other already-mentioned parameters such as age, position, professional projection, etc., we can conclude that this would be an acceptable and justified case.

Case Study 2:

Max Mustermann, a 27-year old mid-fielder, is a German professional footballer with market value of €20 million. He has been playing football since childhood and, trains 13 - 16 hours every week. His club is requesting a cover in the amount of €10 million. His internal medical history includes Covid-19 infection 6 months ago with a mild course, which caused him to miss one match. In addition, he suffered from muscle injury on his right thigh 2 years ago with a sick leave of 14 days.

How should we assess Max's risk?
Due to the high amount of the sum insured, underwriters require his complete medical evidence such as health declaration and sports medical examination containing laboratory, urinalysis, resting ECG, exercise ECG and echocardiography. Furthermore, his sick leave and injuries records will be evaluated using publicly available entries on the internet.

His complete laboratory test results, including blood picture count, lipid status, fasting blood sugar, liver enzymes and viral serologies, suggested no concerns. The urinalysis also showed no abnormalities. His BMI, systolic and diastolic blood pressure were all within normal range.

His resting ECG showed sinus rhythm, indifference type; here were no pathological ST-changes. The ergometry/stress-echocardiography has been performed with no complaints up to 200 Watt. His oxygen saturation, blood pressure, and heart frequency were all normal.

In the echocardiography a non-dilated left ventricle was described with mild - especially septal - hypertrophy with good function. The thickness of the interventricular septum was 14 mm and that of the posterior wall 13 mm. The heart valves were without pathology. At a preliminary examination, the corresponding wall thicknesses were about 1 mm thicker than at the current examination.

The question in this case is whether his hypertrophy is normal for a professional athlete or he may have hypertrophic cardiomyopathy (HCM). In such cases, we recommend a cardioMRI to either confirm or exclude HCM.

Cardio MRI was not available, but as the values in his echocardiography improved in the course and all other examinations were perfectly fine, including left-ventricular end diastolic diameter (LVEDD), we would accept Max's risk with a small loading for life cover, as the measured values are in the "gray zone" between athlete's heart and HCM.

"In France, we offer both group and individual policies to many professional footballers. Underwriting such risks can be challenging as it is difficult to judge many health risks players face, such as chronicle pain, concussion and mental health. A bright spot is that cardiovascular health monitoring for professional players has improved significantly over the years – there is even a national commission with cardiologists to decide whether the player should continue the career."

Serge Habasque, Senior Life Underwriter, SCOR France

"In the UK, insurers provide both group and individual policies covering professional footballers. There is also a market for special insurance, underwritten by specialized brokers or the Lloyds market. A famous case was in 2006 when David Beckham had a £100,000,000 policy issued for his legs. Recently, a lot of discussions are taking place relating to CTE, resulting in a number of initiatives being launched by the FA and clubs to highlight the risks of concussions including attempts to limit repetitive heading of the ball. Currently there is no formal refinement of the underwriting stance on CTE, but this is an area that needs to be monitored as evidence and data matures which may highlight an increased risk for insurance products."

Ben de Kock, Senior Medical Underwriter and Andy Styles, Technical Underwriter, SCOR UK

In general, the result of an echocardiogram depends on the device on the one hand and on the examiner on the other hand. It is therefore not unusual to receive slight divergent examination results for medical underwriting.

While the medically diagnosed athlete's heart with a wall thickness < 15mm is usually insurable at standard rates, we must be more careful when a hypertrophic cardiomyopathy is suspected, as HCM is a high-risk factor for sudden cardiac death in athletes.

There are several other parameters to differentiate an athlete's heart from hypertrophic cardiomyopathy. For example, diastolic function is always normal in an athlete's heart. This parameter is also mentioned in an echocardiography and can be evaluated by the medical underwriter accordingly. Other parameters can only be determined by special examinations such as Cardio MRI, CPET (cardio-pulmonary exercise test), and are thus not routinely available. It is important to note that some norm values may differ among different ethnic groups. Family history can also provide valuable information in countries where it is allowed to be used. We recommend discussing any unclear findings with the Chief Medical Officer.

Conclusion

As we have explored throughout this article, football is an extremely demanding sport. Players are constantly under threat of serious and increasingly complex health risks. To adequately underwrite professional footballer cases, underwriters must develop specialized knowledge of their unique risks and remain constantly updated with medical development and industry trends.

The need for insurance coverage for footballers is likely to increase as the sport's popularity is expected to remain extremely strong. The recent FIFA World Cup held in Qatar, which brought 26 million enthusiastic viewers worldwide, proves that. It is up to insurance companies to seize this opportunity. To write a profitable business in this field, securing strong underwriting capabilities backed by highly specialized and experienced underwriting professionals is critical. So next time you watch a football game on the screen, we hope you spare some time to think of the insurers behind the scenes, protecting players and playing a part in the Beautiful Game.

For further information or underwriting guidance, contact your local SCOR underwriting contact.

We invite you to follow this ongoing series as we tour the world of extreme sports, tapping into SCOR's network of expert insurance professionals – and amateur athletes – whose passion and knowledge allow SCOR to break through common misconceptions and offer a better understanding of the true risks surrounding extreme sports for amateurs, professionals, and – occasionally – even spectators. We also explore the most recent trends and implications of new medical developments, predict how a changing climate and other evolving factors might impact these sports, and highlight hidden links between Life and Health and Property and Casualty coverage in the world of extreme sports.

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