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This Sporting Life

Injuries and Medical Provision

Introduction

In 1897 American college football was experiencing one of the earliest of its episodic crises due to a growing death toll of players. The whole issue was sensationalized in the newspapers as part of a circulation war. On 14 November one page of the *New York Journal and Advertiser* gave graphic details, including illustrations of the injuries – a broken backbone; concussion to the brain; and a fractured skull – sustained during games by three players who had died.¹ Over one hundred years later, following a game in 2002, Alex Ferguson, manager of Manchester United, announced that David Beckham, then the world's most famous player, had broken a 'metatarsal' bone in his foot. His place in that year's World Cup was immediately put into doubt. The word 'metatarsal' was at first met with bemusement by the television broadcaster. However, the word soon entered everyday language as the media hungrily dissected the injury, its anatomical location and its consequences for the player; 'doing a metatarsal' quickly became part of the sporting lexicon. Sporting injuries have permeated other areas of popular culture. In the 1980s, on the satire show *Spitting' Image*, a headless puppet of then England captain, Bryan Robson (his head was on his lap), was asked if he was injury prone. An episode of *Quincy* was set around college football and its impact on head injuries. An opening scene in *Six Feet Under* also featured the death of a high school footballer due to a heart attack. To a certain extent the relationship between sport and medicine has been a product of modern influences and values. In this sense the media has played an important role in shaping public perceptions. The reporting of injuries sustained by athletes has not only been portrayed as a distinct feature of their working lives but through the rise of the modern media the association between sport and medicine became embedded in the popular psyche.

This chapter is concerned with the occupational life of elite athletes. This includes not only the injuries they have experienced but also the provisions sporting authorities have made for injured athletes. It also seeks to understand how the bodies of athletes have been subject to an ever-present tension between the demands and values of sport and what was deemed to be fair and safe

within a sporting context, especially with regard to rules. An athlete's body is his or her only major resource. John Harding has argued that in the case of footballers – although this could apply to most if not all elite athletes – ‘It is a finite resource, subject to breakdown and inevitable decline.’ Footballers, Harding continues, go through a complete life-cycle before they reach early adulthood and by about thirty-five years old their bodies will no longer carry them through a season. This athletic ‘death’ also leads to the ‘eclipse of his professional identity’.²

To a certain extent the emergence of modern sport in the late nineteenth century shared similarities with modern work practices. Sturdy has argued industrial work was a defining experience of the twentieth century for much of the world's population because it was located within the social categories of class, wealth and status. This social experience was bound up with the bodily experiences associated with industrial work and physical labour. Not only did this include the exercise of manual skill and dexterity but also the associated ailments of bodily fatigue, injury and illness.³ The experiences of professional and elite athletes, therefore, not only mirrored those of industrial workers but within sport these experiences were also conditioned within a sporting environment that during the twentieth century became more competitive and the quest for sporting success put extra demands on the bodies of athletes.

‘The dangers of sport’

As we have seen in Chapter 1, exercise and physical recreation were generally seen positively in terms of a healthy mind in a healthy body. However, not everyone agreed that sport was good for you, both morally and physically and criticisms of elite sport can be placed alongside debates over ideas of rational recreation. Initially, sport was seen as part of a bourgeois idealism and would play a major part in the creation of a healthy, moral and orderly work force. The failure of early rational recreation schemes accompanied greater anxieties amongst the middle classes. By the late nineteenth century the extension of the franchise, the rise of ‘new unionism’ and militant strike action led to a more assertive working class culture.⁴ Growing class tensions saw the middle classes aim to exclude the working classes from their own spheres of influence. The subsequent emergence of amateurism in sport was partly designed to assist in this process.

Professional, competitive sport, because of its association with money and the working classes – and that it was not amateur – was regularly criticized by nineteenth century cultural commentators. Geoffrey Delamayn, the main character in the Wilkie Collins’ novel, *Man and Wife* (1870), was a professional pedestrian. He is represented as a ‘muscular ruffian’ ‘who lives for the adulation

of his friends, the savage enthusiasm of his fans, and above all the fascinated adoration of women'.⁵ Similar criticisms of professional sport and athletes have been part of the public discourse ever since. Many socialists – but not all – because of an atheist purist tradition, did not understand sport and were ill at ease with other working class leisure practices such as drinking. Indeed, socialist ideas about leisure had a direct link to cultural commentators like Matthew Arnold and rational recreationalists. Edward Carpenter, through his utopian ethical socialism, favoured an ascetic and 'simple life'. Fabians, like George Bernard Shaw, preferred a more active lifestyle that included mixed-sex Swedish Drill while the Clarion Cycling clubs took their name from Robert Blatchford's newspaper. However, all shared a frustration in what they believed was an apathy and selfishness that ran through the working classes who preferred 'trivial' commercial pleasures.⁶ Analogous socialist attitudes to sport and popular culture were evident within the Labour Party following the 1945 General Election.⁷

Physical culturalists were similarly critical of sport because its competitive nature was not compatible with the aims of bodily discipline and like amateurs they did not like the tendency towards specialization. I.P. Muller regarded 'Athletic Sports' as 'movements and exercises which are performed for pleasure or amusement in order to enable one to excel others in any special branch, or to win in competitions'. Physical culture on the other hand was about the improvement and the development of the individual. Although some sporting activities could be considered rational, Muller warned that they may prove irrational for the individual; team sports were not considered rational.⁸ Sandow was an admirer of sport but he also linked its popularity to the poor physical health of the mass of spectators and argued that it would only be medically safe for people to participate 'in these strenuous contests' if they built up their bodies. He warned that those who take up football or athletics 'must first have special muscles prepared for those feats by weeks or even months of training'. If not then many could 'damage and ruin their health for life'.⁹

It was against this background that doctors made similar criticisms over the nature and competitiveness of sport. These criticisms were linked to rising anxieties over the injuries and health of athletes, especially in all codes of football and on both sides of the Atlantic. There were especial concerns over the violent nature of football played at public schools. In 1870 *The Times* published a letter from 'A Surgeon' complaining about the number of football injuries he had dealt with at Rugby School, particularly due to the practice of 'hacking'. Later that year the school's medical officer, Dr Robert Farquarhson, admitted that a boy had been killed playing football.¹⁰

Deaths in all footballing codes were not uncommon. In 1880 the Mayor of Southampton banned football in the town following the death of a player.¹¹ Between 1886 and 1895 there were 13 Yorkshire rugby players killed¹² with at least another 12 fatalities in Northern Union matches between 1895 and 1910.

John Richardson, for example, sustained his fatal injuries when he ran into one of his own players when trying to catch a high ball.¹³ Fatalities and injuries in football were regularly noted in medical journals.¹⁴ In 1894 two articles appeared in the *Lancet* titled, 'The Perils of Football'.¹⁵ In the second it was stated that,

Football is a dangerous game; it is also an excellent game; but if the danger can in any way be modified without spoiling the sport surely something will be gained. And if the danger is increasing, with or without a corresponding increase in the position of the game as one of skill, it behoves serious people to consider what cause the increased danger is due.

These articles had partly been a consequence of a three-year campaign against the 'dangers of football' run by the editor of the *Pall Mall Gazette*, W.T. Stead.¹⁶

In November 1907 the *Lancet* returned to the same subject, recording the deaths of six players in the previous few weeks. Despite stating that 'No fault can be found with football *per se*' and that 'it is pre-eminently a manly, healthy game', the journal argued that, 'none the less its perils are excessive, and those who make the laws of the game and maintain discipline among the players should see to this'.¹⁷ The following year, after noting some reports of footballing injuries, the journal argued that football was dangerous 'due to the spirit of the game which encourages competition'.¹⁸ Although physicians recognized the medical values of exercise, some worried about the medical implications of competition. It reflected the idea that exercise should be done in moderation. Some doctors adopted the aphorism, 'Athletics for health is safe. Athletics for prowess and superiority may be dangerous'.¹⁹ At the 1903 annual meeting of Schools Medical Officers, R.H. Anglin Whitelocke, a Fellow of the Royal College of Surgeons, gave a paper on 'Football Injuries'.²⁰ In 1910 the British Medical Association's Council recommended that schoolboys participating in rowing, boxing, cross-country running and swimming should undergo medical examinations.²¹ Despite these protestations and calls to ban football there was little chance of such advice being heeded. In Britain the popularity of soccer and rugby crossed the class divide. Tony Collins has argued that, despite a growing trend of rough play among northern working-class rugby players, 'violence was [also] an integral part of the "manly" philosophy of the middle-class administrators of the sport. "Rough" sports were seen as healthy and character-building.' Moreover, the threat of danger was an accepted part of working class life due to the large number of men who worked in primary industries such as mining.²²

Sport in American educational establishments shared similar attitudes to its danger with the UK. Initially, sport replaced gymnastics as part of the American enthusiasm for maintaining health and became the preferred activities of the middle-class American male.²³ College football matches between the 'Big Three' – Harvard, Yale, Princeton – fostered intense rivalries that popularized the game.²⁴

Although the sport claimed to be amateur, it rapidly developed along commercial and professional lines. This model was copied throughout the entire US university system.²⁵ Like its transatlantic cousins American football suffered its own periodic 'crises', something that brought similar criticisms from US medical journals. In 1903 the American Medical Association had reported that in that year there had been 35 deaths as a result of playing football as well as 11 cases of paralysis due to spinal injuries and over 500 severe accidents. Nevertheless, the game continued to be regarded as a 'passage to manhood' and its supporters claimed that 'contest victory' was paramount even if personal sacrifice was necessary. As the game's popularity increased in American colleges and high schools, fatalities and injuries mounted, and there was particular concern that these included the nation's male elite from Ivy League universities. In 1905, following meeting between football and college officials and another with President Roosevelt, rule changes were made, including the forward pass, in an attempt to make the game safer.²⁶

The expansion of athletics in American universities in the inter-war years led to further criticism of college football in the shape of the Carnegie Foundation's Bulletin Number 23 (1929). While commissioned by the National College Athletic Association (NCAA) and written from the perspective of educationalists rather than doctors, the report was concerned with the health and welfare of students who played the game. The report was largely damning of football, particularly its recruitment system, which was described as 'demoralizing and corrupt' and that in all but name it was a professional game.²⁷ The Carnegie report found that football was the most hazardous sport within the university system, especially inter-collegiate football, with concussion injuries causing most concern.²⁸ This excessive incidence of injuries was put down to a number of factors. First, because of a coach's desire to win, it was suggested that his methods ignored the dangers to life and limb. This could include his tactics as well as the use of chemical substances. It was also argued that players played when not fit while there were inadequate medical examinations and supervision of athletes. Lastly, the playing schedule was found to be too rigorous.²⁹ These concerns – in all sports – would be echoed throughout the century. Criticism of the game extended to popular culture more widely. During the inter-war years there were a number of critical articles in women's magazines. One article in *Good Housekeeping* in 1936 warned parents that crippling injury and death constantly stalked the football field.³⁰ However, there was an ambivalent response to the Carnegie report. The tension between universities and their football team was deeply embedded with college pride put before the welfare of its students. Michael Oriard has argued that the corrupting 'professionalism' of college football in the 1920s formed the basis of the sport in 2000.³¹

Occupational hazards

A sporting life has offered marked distinctions with most other occupations, and living and dealing with injuries has been and continues to be one key aspect of this existence. One study has estimated that the overall level of injury to professional soccer players is 1,000 times higher than that found in other industrial occupations traditionally regarded as high risk.³² Another has estimated that two per cent of English professional soccer players retire each year as a consequence of an acute injury, a high figure when compared with most other jobs.³³ However, Roderick has argued that what constitutes both an injury and playing or competing with pain has been shaped by a wider socio-cultural context.³⁴ Ideas of masculinity, for example, have been important not only in shaping athletes' attitudes towards injuries but also their own identities. As a result, it is felt that 'real men' should conceal pain as well as ignore the pain and injuries of others.

Masculinity though – and, therefore, attitudes towards injuries – has had different meanings for different social groups. Whereas middle-class sports in the nineteenth century – in theory – represented, fair play and sportsmanship and were expressions of manliness, a soccer team came to symbolize the virtues of the men who supported it, mostly from the working classes, while rugby league shared a bond with coal mining the most masculine of occupations.³⁵ Attributes such as hardness, stamina, courage and loyalty came to be regarded as more important than skill.³⁶ This perceived need to play through pain has seen the lionization of some English footballers, including Terry Butcher (versus Sweden 1990) and Paul Ince (versus Italy 1997). After bravely scoring against Austria in 1952 and then sustaining an injury, Nat Lofthouse was given the sobriquet the 'Lion of Vienna'. In the 1965 FA Cup Final, before substitutes were allowed, Liverpool's Gerry Byrne played nearly all the game plus extra time with a broken collarbone.³⁷ This was a common occurrence in FA Cup finals but in most cases injured players would continue to play on the wing. Byrne though continued to play on as a defender.

Ian Adams, the doctor for Leeds United in the 1970s, and who also worked in other sports, has claimed that, in his experience, there was a different psychology between footballers and rugby league players. Footballers, he felt, tended to be more introspective and were 'always looking for little aches and pains, hamstring tweaks etc'. In comparison, there was a more macho culture associated with rugby league whose players he (improbably) claimed 'probably don't feel pain anyway to be honest'. Adams cited the example of an Australian player at Leeds who during one match had his cheekbone broken. He was told to take a week off but refused as he said if he did not play he would not get paid. The following week he suffered another cheekbone fracture on his

other side. Despite being a prop forward who had to scrum down, with all the pressure on his cheekbones that brought, he never missed a match when he should have been laid up for six to eight weeks.³⁸

The idea of playing or competing while injured has become an accepted part of the life of the modern sporting professional. Sociologists have argued that injuries have become normalized and from an early age athletes experience 'a process of defining even serious injuries in sport as routine and uneventful'.³⁹ A small survey of former professional footballers concerning the injuries and medical treatment they received elicited a mixed response to the question of playing with injuries. It could be argued that this was relative to their perceptions about injuries; something conditioned by the medical advice they received (for the treatment of injuries see Chapter 6). One player, for example, who played 700 league games between 1956 and 1976 claimed that he carried an injury into three-quarters of them while another (1940–59) claimed he never did. Other respondents differentiated between serious injuries and minor ones i.e., 'niggles', with most commenting that they played with niggles. One player (1968–83) stated, 'I tended to play on through minor injuries or niggles. For most of the games I was 100% fit or 95% of the time.' However, there were various reasons for playing with a niggle. First, it was partly a process of negotiation between the player and the medical staff. Because there were only five games of the season to go, one player (1966–76) who had pulled a muscle in his right leg had 'a jab' before each game. He said that he 'got through the games. The idea being that I had all close season to get over it.' On occasions some players would conceal injury from the club. Some did so because they thought they might lose their place in the team – and a potential win bonus.⁴⁰ Moreover, on some occasions pressure was placed on players to play from the manager and medical staff (see Chapter 6).

The main point here is that injuries within sport were institutionalized. Athletes not only sustained injuries they were aware of their consequences in terms of recovery and 'managing' them. It highlighted that sport, especially for the elite but also at recreational levels, carried different values compared to other types of physical culture. Whereas Sandow and Muller advocated total bodily health for the individual, elite sport generated notions of competition and placed an emphasis on character and courage: whereas physical culturalists and doctors generally promoted exercise in moderation, sport promoted an excessive bodily culture. This difference in attitude was illuminated by former British and Irish Lions' hooker, Brian Moore. In previewing the second rugby union test between South Africa and the Lions in 2009, he declared that for the Lions players to win, it would involve a 'fearless, even reckless disregard for their physical wellbeing'.⁴¹

While injuries have become an occupational hazard for elite athletes, there has been a long history of injuries associated with sport. In 1883, for example, a reader of the *Field* wrote in concerning his treatment for 'tennis elbow'.⁴²

In 1887 William Renshaw had been unable to defend his Wimbledon title due to tennis elbow.⁴³ In 1889 *The Times* reported that hard ground due to frost had caused two 'Football Accidents'. One player, Preston North End's Jack Graham, suffered a broken collarbone.⁴⁴ These 'sporting accidents' reflected a greater awareness of accidental injuries that emerged in the final quarter of the nineteenth century. Injuries sustained on streets and in the industrial workplace, such as the mines and the railways, became sensationalized in newspapers and were read by an increasingly literate working class.⁴⁵ Moreover, just as industrialization brought particular diseases, such as phossy jaw and grinder's lung, which were contracted by workers in the match and cutlery industries, athletes now suffered recognizable sport-specific injuries.⁴⁶ However, there was a 'culture of risk' in sport not evident in other areas of industry.⁴⁷

A greater knowledge of sports injuries had developed from the late nineteenth century. As well as 'tennis elbow' some players also suffered from 'tennis leg', which was a calf injury. 'Riders Strain' was due to a pulled thigh muscle. 'Scrum Pox', or 'Football Impetigo', was a contagious skin condition that rugby forwards contracted. Rugby scrum forwards also suffered from 'football ear' where blood collected and formed into a cyst. Meanwhile, rowers suffered from boils (probably on their backside) while boxers had 'cauliflower ears'. Following the *fin de siècle* fashion for cycling, there were initial worries that its prolonged use could result in 'bicycle face', 'bicycle hand', 'bicycle foot' or 'bicycle hump', which was an apparently painful condition caused by low handlebars. A combination of these afflictions was said to bring about the unlikely (and unknown) formation of 'cyclo-anthropos'.⁴⁸ For two years, 1907–09, the *Athletic News*, which was then considered *The Times* of football, ran a weekly doctor's column. Written by Chelsea's doctor, J. Ker Lindsay, he gave advice on subjects like treatment of injuries, the anatomy, exercise and diets. He also answered any queries from readers. In October 1907, for example, he wrote on displaced cartilages, while eleven months later the topics included bone setting and a 'study of the body'. In December 1909 he gave advice on bandaging and how to stop the bleeding.

Some sports were more dangerous than others. Boxers not only suffered black eyes, broken noses and the occasional broken jaw some also died in the ring. In 1900 Mike Riley died of an inter-cranial haemorrhage, for example, while Billy Smith died of laceration of the brain the following year.⁴⁹ As we have seen, the level of danger in American football could be judged on the levels of fatalities in the sport. In 1990 it was reported that, for the first time since 1931 'there was not a direct fatality' at any level of the game. Winter sporting accidents had their own dangers. In 1959 it was estimated that 3.5 million went skiing in the United States with injuries occurring at the rate of 5 per 1000 skiers per day. Winter sports injuries were also different in nature with some the result of striking ice or rock with head injuries common.⁵⁰

While association football did not carry this amount of risk it was not without its dangers for professionals. During the 1913–14 season it was estimated that by New Year's Eve only 169 of the 1,701 players who had played in the first eleven of teams in the Football League, the Southern League as well as the Scottish League, had not suffered any injury. The figure dropped to 61 by mid-April.⁵¹ Types of injuries could also be determined by how the game was played. Early football was played in rushes with an emphasis on individual play. There was also much heavy charging that could result in broken arms, legs and collarbones. As the rules of the game changed so did the nature of the injuries. In 1925 the offside law was modified and ushered in a more free-flowing game that placed a greater emphasis on athleticism. It led to more injuries as collisions between players became more violent.⁵² The invention of the sliding tackle and the tackle from behind were also blamed for contributing to an increase in injuries during this period. It was claimed that these types of tackles had led to a growth in cartilage operations.⁵³

The culture of football in Britain though, where the emphasis has been on the physical rather than the technical, has tended to be different compared to the rest of the world. In South America, for example, there was a dislike of the British style and the shoulder charge was particularly resented partly because of the harder grounds on which the game was played.⁵⁴ Goalkeepers were also treated differently. In Britain they could receive rough treatment and be charged (although this had radically changed by 2000). In the 1957 FA Cup Final the jaw of Manchester United's keeper Ray Wood was broken after he had been charged – fairly according to the referee – by Aston Villa's Peter McParland. By contrast, any contact with goalkeepers both in Europe and South America is deemed a foul. By the late twentieth century English football's dangers were still apparent. In 1997 it was found that over an eight-year period an average of 51 players and trainees per season (there were about 2,400 professional footballers at 92 league clubs) finished their careers prematurely as a result of injuries, accidents or sickness.⁵⁵ Footballers' injuries were also frequent. Between 1997 and 1999 it was found that approximately 75 per cent of players sustained at least one injury while 22 per cent of injuries were classified as severe and preventing the player from training or playing for at least four weeks.⁵⁶

Injuries were not confined to contact sports. Equestrian sports, for example, were inherently dangerous. For army officers 'sport provided an arena for the demonstration of tough masculinity'. In India polo and pig-sticking were dangerous activities but at the same time were deemed an important part of a British cavalry officer's career. Not only was sport a form of thrill seeking but officers also believed that it helped to cultivate certain qualities like pluck, courage, *esprit du corps*, as well as leadership. Officers proudly flaunted their injuries from pig-sticking although polo was a more dangerous sport; between 1880 and 1914 thirty-six officers died from polo accidents.⁵⁷ In equestrian

events serious sporting injuries could also cut across the gender divide. One of the most dangerous has been Three-Day Eventing where men and women compete on equal terms. In 1976 Virginia Holgate broke her arm in twenty-three places after a fall. The original diagnosis had been to amputate from just above the elbow but the arm was saved.⁵⁸ A show jumper, Nick Skelton, broke his neck in 2000 after falling off a horse and landing on his head. He was forced into retirement but made a comeback and was still riding in 2012.⁵⁹

Sporting injuries have not been restricted to those that can end careers. 'Burn-out', for example, has been one sporting condition associated with young athletes. The phrase 'burn-out' itself has been in use since at least the 1920s. In America, it was observed that some high school athletes were often 'burned-out' before entering college athletic competition.⁶⁰ In Britain the 'Victor Ludorum' athletics award for public schoolboys, where boys had to run at all distances consecutively, was described as 'pernicious'. It was noted that many a promising runner's standards had dipped due to over exertion at an early age.⁶¹ 'Burn-out' has been particularly linked with female tennis players. Martina Hingis, for example, started playing tennis at two, won Wimbledon at 16 and was forced to retire at 21. Others who followed a similar pattern included Andrea Jaeger and Tracey Austin, a US Open champion, who gave up through injury before she was 20.⁶² Jennifer Capriati turned professional aged 14 but shoulder injuries eventually forced her into retirement aged 31. She speculated that these problems had been brought on by training too hard and too long, competing in too many events and 'listening to tournament organizers, sponsors and Tour officials instead of to her body'.⁶³

In more recent years there has been a greater awareness that athlete's injuries are not just physical. Cricketers, because of the time they spend away from home and family, have been particularly susceptible to bouts of depression. It is also claimed (although there is little hard evidence) that the suicide rate is higher amongst former cricketers than for any other sport. In 2006 Marcus Trescothick, because of depression and homesickness, was forced to return home to England from tours of first, India and then Australia. Soon after he retired from international cricket but continued to play for his county team Somerset.⁶⁴ In addition, athletes are faced with a 'psychological barrier' after returning from injury. This could include making and experiencing a tackle in football (of all codes) or runners having to run at full stretch again following a lay-off. Moreover, in the background there is always the constant and on-going fear of an injury that may either force the athlete to miss an important event such as the Olympics or one that brings their career to a premature end. Yet a growing knowledge and acceptance about the importance of mental health in sport has contrasted with traditional notions of masculinity and of what being a professional – especially male – athlete means. These ideas have usually stressed the importance of 'character', the ability not to show any sign of weakness and when it comes to criticism from the crowd, team-mates and

coaches alike to be able to 'take it'. The footballer Stan Collymore, for example, believed that he was persecuted by his manager at Aston Villa, John Gregory, for suffering from depression because it was felt that it was not 'normal' for a top footballer to be depressed.⁶⁵

In addition to injuries, professional athletes have also had to cope with the daily grind of competing and training and the general wear and tear it inflicts on the body. There is perhaps no event that is more demanding than the Tour de France, which Christopher Thompson has shown, was 'the celebration of a distinctive Tour heroism based on suffering and survival' as much as the rider's skill.⁶⁶ In the 1920s the Tour's length exceeded 5,000 kilometres with the longest stages covering 480 kms. By 2002, however, it was 3,282 kms and the longest stage was 226 kms. While the distances had decreased, in essence, the cyclists were still riding for six hours a day virtually every day for three weeks (see also Chapter 5).

In horse-racing, in addition to the risk of falls, flat race jockeys have subjected themselves to severe regimes of wasting to make the weight, which shares characteristics similar to anorexia nervosa. Tolich and Bell have argued that while a jockey's professional skill is his/her ability to ride a horse, it is the ability to waste to make the required weight that is the fundamental skill. Wasting, therefore, is a 'work discipline and disciplinary social practice through which jockeys train and restrain their ability, their competitiveness and their psychological control'.⁶⁷ In 1850 the minimum weight for jockeys had been 4 stones and 5st 7lbs in 1875: today it is 7st 10lbs. Constant wasting weakened the constitutions of jockeys. This entailed having little to eat, long walks in heavy clothes, Turkish baths and doses of purgatives. Wasting contributed to the early deaths of Victorian jockeys, Tom French, John Charlton, Tom Chalenor and John Wells. This spartan regime was also attributed to the suicide of the most famous jockey of the nineteenth century, Fred Archer (1857–86). To lose twelve pounds in less than a week, he used 'Archer's Mixture', a very strong laxative made for him by a Newmarket physician, Dr J.R. Wright. One day he returned home ill and shot himself in a fit of delirium.⁶⁸ Bulimia has been a condition amongst top jockeys that continued into the late twentieth century. Lester Piggott's frame was relatively big for a jockey and so to keep his weight down he lived off a diet that included cigars and champagne.⁶⁹ It remains unclear though why the weights for jockeys have to be so small. In the early nineteenth century, prior to minimum weight legislation, racehorse owners sometimes resorted to child riders. This practice continued after the Second World War. Lester Piggott, for example, rode his first winner aged 12 in 1948. It was only in the 1960s that a minimum age of 15 was set (it is 16 today).⁷⁰

While cricket would not at first seem to be an overly physical and taxing sport, the season in England is long and can be demanding. To enable them to play day-in day-out, there has been widespread use amongst modern cricketers

of non-steroidal anti-inflammatory drugs to alleviate strains and bruises to get them through the game. However, this medication produces unpleasant side-effects on the stomach and the liver as well as causing dizzy spells. Ian Botham claimed that for the last ten years of his career he was taking these drugs like sweets. To counter the stomach irritation they produced, he used Gaviscon in larger and larger doses just to enable him to take the pills.⁷¹

The rise of sporting welfarism

Injuries and the risk of injury would nudge the sporting authorities into make greater provision for the welfare of athletes. To what extent employer welfare and its motivations were related to the productivity of workers as much as their health and safety has been a fruitful area for historians.⁷² Taylor has shown how between 1900 and 1939 welfarist initiatives in British football mirrored a bureaucratization of the labour market more generally.⁷³ Following the 1906 Workmen's Compensation Act professional sportsmen such as footballers, cricketers and jockeys came under its remit.⁷⁴ Football clubs also resembled paternalistic employers, especially in manufacturing consent in the workplace.⁷⁵ Occupational health and safety measures, however, were uneven across the British economy until the 1974 Health and Safety Act.⁷⁶ Services were better developed in state-owned industries as private companies generally made their own *ad hoc* welfare arrangements (which in many cases included the provision of sports facilities).⁷⁷

Almost from the outset, football clubs insured themselves against possible claims, including injured players who would lose time off work. In 1883, even before professionalism had been legalized, Aston Villa had taken out a policy against injuries with the Cyclists' Accident Assurance Corporation Ltd.⁷⁸ Insurance schemes were also common in rugby, especially in the north, where working class players predominated. In 1883 Salford rugby club set up their own insurance scheme for players, contributing 15 per cent of the gate takings from each home game to the insurance fund. In 1886 the Rugby Football Union sanctioned insurance payments at no more than 10 shillings a day.⁷⁹ The Gaelic Athletic Association, which governed strictly amateur sports, such as hurling and Gaelic football, initiated its first injury scheme in 1929.⁸⁰

Professional football clubs were becoming more aware of the consequences of players' injuries both from the perspective of their impact on performances on the pitch and the financial implications off it. As a result, it meant that doctors were required to act as medical officers in order to fulfil contractual requirements.⁸¹ In 1898 Middlesbrough's insurance policies stated that a player 'shall at once retire from the field and have the injuries immediately attended to and he shall not resume play without the permission of a duly qualified surgeon or medical man etc'.⁸² A doctor's certificate became a condition of

any compensation to footballers while Middlesbrough's players were awarded 20 shillings for injuries that rendered them unable to work for three months.⁸³

Before the First World War, however, football clubs did not actually have any legal medical obligations for their employees. At an inquest following the death of the Manchester City player, Di Jones, in 1902, the club resisted claims of liability. Instead, it sought to blame Jones's insistence on walking from the field to the ambulance as having 'caused more trouble than anything else'. The jury had 'wanted to impress upon football clubs that they should not allow a man to walk off the field in a case like that'. However, the Coroner disagreed. He stated, 'Are football clubs to supply a medical staff on their field? I don't think there is any obligation on them to do that'. There was no obligation on their part for many years after.⁸⁴

Contracts between clubs and players, however, became more complex with rule-books stipulating procedures regarding injuries and medical treatment. In 1914 any Wolves player unfit to play had to obtain a doctor's certificate from the club's own medical officer.⁸⁵ At Hull City and Wolves, players were later forbidden from riding motor-cycles; if they did and got injured they would forfeit any claims for wages. Moreover, at both clubs players had to first obtain permission from the trainer or manager before visiting the club doctor. It was also made clear that injured players now came under the control of the club. They were club assets and had to obey instructions from the club trainer.⁸⁶ As rugby league became more competitive, clubs also issued more intricate rules for their players. At Leeds this included one that stated that injuries had to be reported to the club within 48 hours otherwise the player would not receive insurance payments.⁸⁷

In horse-racing, reflecting the patrician nature of the sport, jockeys relied more on charity. It was not until the mid-twentieth century that an insurance scheme was established for professional jockeys. In the nineteenth century both the Bentinck Benevolent and Rous Memorial Funds had been set up. In 1923 the Jockey Club inaugurated the Jockeys' Accident Fund, although jockeys did not have the right to draw upon it. National Hunt jockeys relied on charity until the Rendlesham Benevolent Fund was established in 1902. It made some provision for jockeys killed or injured but payment was still discretionary. After the First World War a National Hunt Accident Fund was set up out of jockeys' licence fees and a levy from betting. By 1955 National Hunt riders were insured for a sum of £3,000 against permanent total disablement and in the event of temporary disablement they received £8 8s a week for one year. Their dependents received £2,000 if death occurred.⁸⁸ In 1971 the Injured National Hunt Jockeys' Fund (established in 1964) was renamed the Injured Jockeys' Fund to incorporate those from the flat.⁸⁹

The intervention of the law was a relatively rare event in sport and contributed to what Ken Foster has termed the 'myth of autonomy' regarding sport's relationship with the law; sport was seen as a voluntary activity,

a pursuit for pleasure not for profit and it also had its own organizational codes and constitutional arrangements i.e., sports governing associations were considered quasi-legal bodies. From the 1980s, however, there was a decline in this autonomy and a 'juridification of sport',⁹⁰ highlighted by a growing number of court cases brought by footballers against fellow professionals for alleged foul play that had caused their retirement (for legal actions against medical practitioners see Chapter 6). Legal precedent had been set by Jim Brown of Dunfermline in 1982 when he sued St. Johnstone's John Pelosi after suffering a compound fracture of the leg. The case though was settled out of court for £20,000. In 2004 Charlton's Matt Holmes was awarded £250,000 for what was claimed to be an illegal challenge that ended his career. For the first time a player successfully sued an opponent – in this case, Wolves' Kevin Muscat – following a claim of a deliberate foul, what was deemed an 'over the top' challenge. It was also contended that Muscat was a dirty player. In court his disciplinary record was produced as evidence and other players injured by Muscat gave evidence against him. As a consequence, the case potentially had repercussions for players who were ordered to deliberately foul opponents by managers.⁹¹

Sport's duty of care

Because of its voluntary roots, sport in Britain was self-regulating for much of the twentieth century. But within the context of a burgeoning welfarist ethos, there was a growing awareness amongst the sporting authorities that they held some responsibility for the health of athletes in their charge. The subsequent formation of dedicated committees and organization also placed the relationship between sport and medicine on a more formal basis. The safety procedures put in place though had a dual purpose: they were not only there to protect the health of athletes but also to protect the image of the sport. This development was linked to wider social trends such as the change in the nature of childhood. In the post-war period family life was centred more on children and accompanied by greater parental anxieties for their safety.⁹² To at least be seen to be making sports safer was also necessary if these sports were to survive by continuing to attract participants and athletes in the face of competition from an expanding leisure market. Moreover, there was a now greater and ever-present threat of legal action. At first many sporting competitions had no medical attendance. However, this gap was gradually filled by voluntary organizations such as the Red Cross and St. John Ambulance Brigade, which offered basic first aid. From the late nineteenth century greater interest had been taken in the supply and organization of accident provision. By 1879 the term 'first aid' had come into regular use due to the proliferation of first aid manuals, and especially after 1887 with the formation of the St John

Ambulance Brigade.⁹³ They have remained a familiar sight at sporting events, especially football matches, ever since.

The concerns of sporting bodies for the welfare of athletes have manifested itself in three main areas: the establishment of bodies or committees with responsibility for athlete's welfare; changes in the rules of the sport to make it safer; and the introduction of protective equipment. One of the first sports to establish a safety code was perhaps unsurprisingly American football, in light of criticism of the sport's growing injury count. In 1922 the American Football Coaches Association (AFCA) was founded with the task of promoting safety in the sport. In 1931 the AFCA initiated the 'Annual Survey of Football Fatalities' for research into the reduction of injuries and from 1980 it was continued as the Annual Survey of Football Injury Research.⁹⁴ In the post-war period British sports became aware of the need to monitor the health of athletes (for boxing see Chapter 8). In 1950 the Amateur Athletic Association (AAA) established an independent medical advisory body 'in view of the increasing number of medical questions affecting policy which have arisen in recent years'. Its recommendations included the establishment of a medical panel of doctors to advise on athletes' injuries; the availability of medical officers and medical equipment at all major athletic meetings.⁹⁵ The death of an athlete has usually signalled a point for the sporting authorities to re-assess their regulations. In cycling, for example, there had been no restrictions on the Tour de France's overall length, the number of stages or the length of stages until after Tom Simpson died on Mount Ventoux in 1967. Following his death the Union Cycliste Internationale (UCI) progressively introduced rules about maximum lengths, rest days and the number of long races in the calendar.⁹⁶

The medical provisions laid on at successive Olympics for the marathon have illustrated how major sporting events have not only become more aware of the health and safety of athletes but were also concerned about the image of their event. At early Olympics there was minimal medical provision. However, it was recognized by the organizers that the marathon required medical support due to the severity of the race and the hot weather it usually took place in, something that increased as the Games became more popular. For the 1896 marathon, medical men followed behind the runners in carts acting as ambulances.⁹⁷ At the Paris games of 1900, ambulances and first-aid stations staffed with physicians and nurses were set out along the marathon route. In 1904, due to the intense heat and high humidity, only 14 out of the 27 starters finished the race. The winner, an American, Tom Hicks suffered from severe heat exhaustion and required the services of four physicians.⁹⁸ The 1904 marathon was a turning point regarding the organization of medical provision for Olympic athletes. Before the 1908 marathon, runners had to send 'a medical certificate of fitness' with their entry form and prior to the start they had to undergo a medical examination by a medical officer of the British Olympic Council (BOC). With reference to the distressed state of the runners

in 1904, competitors had to retire if ordered to do so by a member of the BOC appointed medical staff. Runners were also allowed two attendants to assist him throughout the race.⁹⁹

At the 1912 Games, medical arrangements were more sophisticated. Not only did the marathon runners require examinations of the heart but so did cyclists for their road race. Doctors on the Swedish rowing team also carried out tests. As in London four years previously, runners had to send in a medical certificate of fitness and nor could they take any 'so-called' drugs (see Chapter 5).¹⁰⁰ For the marathon course, including members of the Stockholm Volunteer Aid Corps and the Red Cross, there were 11 doctors, 7 medical assistants, 30 sick-attendants and 2 sick-nurses on duty. Around the course, medical stations were arranged, which included ambulances and sick rooms, each manned by a physician. Refreshments were also laid on. Despite the arrangements, a runner, Francesco Lazaro from Portugal died from heat stroke.¹⁰¹

'Marathon medicine' became more sophisticated during the latter part of the twentieth century as a result of the jogging boom. At the first London marathon in 1981 there was a medical team comprising four doctors, two physiotherapists and podiatrists plus St. John Ambulance volunteers. By 2006 this team had increased to over 100, headed by Dr Dan Tunstall-Pedoe, the race's medical director since its inception. His appointment was due to criticism from some medical authorities about the dangers for 'fun runners' in this 'risky event'. As part of the service, each runner is sent medical, training and dietary advice. In addition, there is now a specialist team in cardiac resuscitation in attendance. From its beginning to 2006, 8 runners had died due to heart failure, although 35,000 people take part each year.¹⁰²

Some of the more dangerous sports, like horse racing,¹⁰³ began to make more provision for safety measures. In motor racing, danger – and thrill seeking – rather than safety had been inherent in the sport. There was also an attitude amongst traditionalists that the better drivers coped with this danger element better than the lesser drivers. Moreover, the cars themselves were built for speed with little concern for the welfare of the driver. Between 1963 and 2000, 17 Formula One drivers were killed with another 16 fatalities made up of officials and spectators. In addition, there were many deaths in other forms of motor racing such as the Le Mans 24-hour race. A number of the circuits, especially Spa Francorchamps in Belgium and Germany's Nürburgring, were notoriously dangerous. A move towards safety in Formula One had been instigated in the 1960s by the Grand Prix Drivers Association (formed in 1961). However, it was really pushed along by Jackie Stewart who in 1969 led a drivers' strike at Spa on the grounds that it was unsafe. In 1966 Stewart had crashed at Spa and due to the poor response of the authorities to the accident, Louis Stanley, the chairman of Stewart's team, British Racing Motors, established a mobile hospital that went to all the European Grand Prix circuits. However, many circuits boycotted its use. There had been some improvements

to the safety of Grand Prix racing from 1963. At the Nürburgring, for example, where once there were hedges all the way round the 28 kilometres circuit, under the initiative of Stewart these were replaced with guardrails. In 1978 medical responsibility for Formula 1 was placed in the hands of Sidney Watkins who was a professor of neurosurgery at the London Hospital. Three years afterwards the Fédération Internationale du Sport Automobile (FISA), the governing body for world motor racing, had formed its own Medical Commission.¹⁰⁴

Ironically, professional football in England did not establish a medical committee until 1980, which was indicative of the FA's attitude towards sports medicine; no audit of injuries within the English game was commissioned until 1997. Rugby Union's first injury and training audit was commissioned in 2001 and the results published in 2005. Some contact sports in other countries were more pro-active. An Australian Football League Medical Officers' Association had been established in 1972 and in 1983 it instituted an injury survey for that sport. In 1992 an annual sporting injury surveillance programme was initiated.¹⁰⁵

As we have seen, from the late Victorian period to the 1980s the law generally did not concern itself with the governance of sport, although the state had taken a regular interest in the regulation of leisure more generally on matters such as the licensing of music halls and public houses.¹⁰⁶ Despite the self-regulating *modus operandi* of sport and the myth of its autonomy from society,¹⁰⁷ there was an ever-present tension and balancing act between safety and the desire to retain aspects of certain particular sports that were deemed part of its essence and hence its attraction.

To a large extent, the regulation of violent play in association and rugby football had been ensured by amateurism. Although team games were about the giving and taking of hard knocks both the FA and the RFU deemed serious injuries from deliberate violent play unacceptable.¹⁰⁸ The FA had banned hacking in 1863 and in 1871 although regarded as the true mark of the 'manly' game, the practice was banned by the RFU. Hacking, basically shin-kicking, had come to be seen as unfair mainly because young men who played the game found that bruised shins acquired on a Saturday afternoon was not ideal preparation for a day's work in the office on Monday morning. Nevertheless, the mentality remained one of 'roughness within the rules', although there was still plenty of it outside them.¹⁰⁹

In the 1930s there were a number of high-profile deaths in football, in particular Glasgow Celtic's John Thomson and James Thorpe of Sunderland, both of whom were goalkeepers. Perhaps more interesting than what was said at both inquests was what was not said as little comment was passed on football's wider responsibilities during these cases. It did though highlight the creeping influence of the law on sport, which had been mainly absent partly due to sport's voluntary tradition.¹¹⁰ Following the death of Thorpe, the FA responded by setting up a commission. This was partly due to concerns over

the question of liability as well as its position as the sole governing body of the game and law-maker. Importantly, the FA, as befitting a quasi-legal body, was keen that it should be the sole arbiter in making any changes to its laws.¹¹¹ The commission, however, conscious of the FA's wider role,¹¹² recommended that Law 8 be changed. It now stated that, although a player could still charge the keeper when the latter was holding the ball, the player could not now attempt to kick the ball out of the goalkeeper's hands. This was now deemed as violent conduct.¹¹³

Rules could also be changed if it was felt that they would reduce injuries to athletes. In 2004 the Australian Football League changed its rule relating to ruck contests due to a proliferation of cruciate ligament injuries amongst players; 16 between 1997 and 2003. There had previously been a modification to the rules, which was aimed to make the game more attractive. This rule allowed for ruckmen to gain considerable momentum when challenging for a 'centre bounce', and thus, increasing the chances of injury. The Australian Football League Medical Officers Association (AFLMOA) identified the main cause of the injury when the knee of one player made forcible contact with an opponent's shin and recommended a reduced run-up. This it was argued would still retain 'this attractive part of the game'.¹¹⁴

Innovations in equipment and their regulation have had an important impact on the safety of some sports, although this was not universally welcomed. In 1898 it was noted that with the introduction of 'safety', cycling lost much of its danger, excitement and its manliness.¹¹⁵ In some sports the drive towards health and safety has changed its nature. The high jump was revolutionized due to Dick Fosbury's victory at the 1968 Olympics with his 'flop' but it had only been possible due to the invention of 'crash mats'. Another American, Clinton Larson, had attempted to use a flop-like technique in the 1920s but because of the lack of a cushion to the fall it was thought too dangerous. Instead, jumpers continued to use the straddle and western roll techniques because they landed safely in a sandpit.¹¹⁶

Safety has been the main factor behind most innovations. In 1923 the wearing of crash helmets for National Hunt jockeys was made compulsory following the death of Captain Bennett at Wolverhampton. However, this was only for racing and was not enforced for training gallops until the 1970s.¹¹⁷ Their opposite numbers on the flat continued to scorn helmets until 1939. The football authorities in England became concerned over the safety of players' boots and allowed referees to inspect boots before games for any protruding metal objections on boots or shin pads.¹¹⁸ Improvements in winter sports equipment also reduced the incidence of certain injuries. Better designed ski boots provided more stability to the ankles but the incidences of fractures of the tibia and fibula increased while that of ankle fractures decreased.¹¹⁹

Protective equipment has been particularly important in cricket. While gloves and pads had been used in the nineteenth century, it could be argued that moves

to protect a cricketer's most vulnerable parts were relatively slow in coming. It was claimed that Johnny Tyldesley, in around 1900, had invented the first abdominal protector, i.e., a 'box', when he had been out injured for six weeks after been struck in the groin. Before then batsmen stuffed towels inside their flannels.¹²⁰ However, wearing a box was not compulsory. Fred Trueman's cricket career nearly came to a premature end when as a schoolboy in the 1940s he was struck in the groin by a ball when he wasn't wearing a protector. He was rushed to hospital, underwent emergency surgery and was unable to play for two years.¹²¹ The 1970s saw the introduction of the helmet. Batsmen now sought greater protection from fast bowlers, particularly from the West Indies and Australia, who adopted intimidatory tactics and bowled more bouncers at the head. At first wearing a helmet was voluntary. Some early prototypes only protected the temples and the batsman looked as though he was wearing a sanitary towel on his head. When helmets became standardized, for reasons of insurance it has been compulsory for international players to wear one.

Similar to changing the laws of sports, the introduction of protective equipment and its use has created tensions between doctors, rule-makers and especially coaches regarding debates over safety and maintaining sporting traditions. One illuminating example of these tensions has been the helmet in American football, both in the professional game and at college and school levels. Helmets had been worn since at least the early 1900s but it wasn't until 1939 that the modern prototype – the hard-shell helmet – was first used. To begin with it gave players more courage but coaches soon discovered it made an effective weapon. The helmet, which by the 1970s weighed three pounds, became the game's principal instrument of intimidation due to techniques such as 'butt-blocking' and 'butt-tackling'. These techniques have had long-term concerns for players. In 1968 alone there had been 36 deaths and 30 cases of permanent paralysis.¹²² It was found that these cases had been as a direct result of coaches instructing players to use a tackling and blocking technique that required the use of the head. Since 1960 80 per cent of direct fatalities have been caused by head and neck injuries.¹²³ One doctor, Donald Cooper, then team physician at Oklahoma State, blamed the coaches for resisting safety measures, such as a padded helmet, who in turn accused doctors of meddling. Cooper claimed that coaches resisted change to helmet design because they wanted to hear noise i.e., the big whack of a hit, which was a part of the game they had been brought up with. One consequence of the increase in injuries was a growth in litigation in the 1970s with some cases brought against coaches, especially by the parents of schoolboys, because, it was alleged, they had not taught the players the dangers of tackling. Helmet manufacturers were also sued with a number forced out of business. In 1977 there had been fourteen manufacturers but after facing \$150 million in negligence suits a year later there were eight. Commercial imperatives also meant that there was a lack of standardization regarding helmet design.¹²⁴

Like American football, ice hockey has had a reputation for violent play. Drawn up in 1917, the original rules of the National Hockey League (NHL) allowed fist fights and clubs hired 'enforcers' (or 'goons') for this purpose¹²⁵ (an aspect of ice-hockey that was parodied in the film, *Slap Shot* (1977)). As a fast sport the risk of injury has also been regarded as an integral part of the game. To combat this threat the sport has constantly developed and invented protective equipment since the 1920s when concerns over injuries increased. Not unlike American football, protective equipment did not necessarily lead to a safer sport; instead it made the game more dangerous. Padding in ice hockey was initially minimal with some players wearing soccer shin pads. In 1929 the first facemask for a goaltender was used in North America while shoulder and elbow pads were first worn in the 1930s. The need for further protection increased when the game moved indoors after the Second World War as play was faster, more constricted and led to greater contact. The innovation of the slap shot in the 1950s also changed the nature of the game with high-flying pucks and sticks resulting in a higher risk of injuries to the eyes, face and head. Hockey helmets were first used in Sweden in the 1950s, becoming mandatory in 1963. In 1975 the wearing of a helmet with a full facemask was made compulsory in the National Hockey League. However, this had unforeseen consequences as it encouraged a more aggressive playing style because it was believed that the head, face and throat were less at risk. The greater padding also generated a feeling of invincibility amongst players and the elbow pad, now a hard shell, became a weapon in itself. In addition, there was also an increasing incidence of minor traumatic brain injuries.¹²⁶

In Formula One helmets were only made compulsory in 1951 when up to then many drivers had favoured a linen cap. The death of Lorenzo Bandini due to burns at Monaco in 1967 led to changes in the design of drivers' suits. Now through scientific developments a Dupont nylon material 'Nomex' was worn over a similar layer of long sleeved pants and vests and Nomex socks and gloves. The material was designed not to burn or support combustion and it was estimated that it would give the driver twenty seconds before his body was burned. Drivers also now wore a Nomex face-mask and an all-in-one crash helmet to prevent flames reaching the face.¹²⁷

Case study: rugby union

In recent years the changing relationship between sport and medicine has perhaps been most evident in rugby union. After turning professional in 1995, the sport's rapid commercialization has had a significant impact not only on how the game itself has changed but also injuries to players. The aim here is to use rugby union to illuminate some of the issues that have been covered above in terms of injuries sustained and the attitudes of the sport's authorities to these developments.

Of course, rugby (both union and league) has always had a reputation as a rough game. Early in its amateur days, rugby footballers could be 'collared', and it was regarded by some as 'part of the game' for them to be stamped on during rucks and mauls. As Collins has pointed out, masculinity through physicality was the essence of the sport. It was exemplified by the violence in the match between England and New Zealand in 1925 but the giving and taking of it was common at all levels and this continued deep into the twentieth century.¹²⁸ Unsurprisingly, at recreational level the injuries sustained in rugby have usually been more serious and their incidence has generally been higher than in other British sports.¹²⁹ In 1970–71, in a survey of recreational sport, it had been found that the accident rate in soccer (36.5 per 10,000 man hours of play) was actually higher than that of rugby (30.5). However, rugby players' injuries were more serious with fractures and dislocations twice as common.¹³⁰ By 1991 a Sports Council survey had found that rugby (both union and league) was more dangerous: 59.3 per cent of rugby players experienced an injury every 4 playing weeks while for soccer players it was 39.3 per cent. For martial arts, hockey and cricket the figures were 36.3 per cent, 24.8 per cent and 20.2 per cent respectively. In New Zealand it was calculated that rugby injuries contributed to 49–58 per cent of all sport-related hospital visits.¹³¹ By 2005 it was claimed that rugby union was the most 'risk-laden team sport' with professional players on average spending almost a fifth of each season on the sidelines.¹³²

What changes to rugby union have taken place since 1995? First, there has been a change in the shape of players' bodies. Professionalism not only brought better paid players; they were also bigger, fitter, more skilful and more powerful. In 1991 England international forwards weighed on average 100 kilograms while backs were 83 kg; in 2003 these figures were 109 kg and 90 kg respectively. A greater proportion of this weight was also leaner body mass, allowing more force to be generated in collisions.¹³³ In this sense, as in American football, a player's body could act as a weapon. In addition, rule alterations altered the nature of the game as the rugby authorities attempted to make the sport more free-flowing and more attractive to television, sponsors and spectators alike. New rules were designed to reduce the proportion of static formations such as the scrum, the lineout and ruck and maul, and with more open play there has been a greater chance of high impact collisions. There was a 30 per cent increase in the ball-in-play time between 1995 and 2003, significantly increasing potential contact time and hence potential injuries per match. The introduction of tactical substitutions also allowed for fresher 'impact' players – selected for their ability to 'break' the tackles of tiring opponents – to come on late in the game; it has been these tiring players who have become more susceptible to injury.¹³⁴ In addition, it was found that there was a higher risk of injury the better the standard of rugby.¹³⁵ This greater intensity in play has been complemented with an expanding fixture list since

1995, which, due to less time for rest and recuperation, has increased the strain on players' bodies.

One outcome of these changes has been the gradual acceptance of the wearing of protective equipment for players who wished to prevent injuries. In 1996 the RFU sanctioned the use of approved head protection and in 1998 upper body equipment, i.e., shoulder pads made of soft and thin material, was incorporated into an undergarment; at first padding had only been allowed to protect an injury.¹³⁶ While scrum caps and mouth guards had been used for many years, these post-1995 developments were in contrast to rugby's traditional ethos that took pride in resisting the introduction of American football style body armour.

Attitudes towards violence also began to change, partly due to a greater media awareness of sporting injuries. One such injury was sustained by the Welsh full-back, J.P.R. Williams. Playing for his club Bridgend against New Zealand in 1978, he had his face severely raked by the studs of the All Blacks prop forward, John Ashworth whilst at the bottom of a ruck. It was claimed that Williams was lucky not to have been blinded and the subsequent damning television footage of Ashworth's foul play turned the incident into a media cause celebre. The Director of Public Prosecutions contacted Williams and asked him if he wished to press charges. Although seething over the manner of how he sustained the injury, Williams, declined because he felt as an amateur player this would not be appropriate.¹³⁷

Despite Williams' stance, from the 1970s the medical profession was drawn to the study of rugby injuries, especially those to the spinal cord that resulted in tetraplegia.¹³⁸ These types of injuries had originally been described as 'acts of God' (it was actually the tackle that caused more paralysing injuries than the scrum). These findings as well as the growing threat of legal action from parents and also the potential damage to the image of the game had resulted in changes in the laws of the game from 1985. To protect the head and neck, scrums were to be prevented from collapsing and rucks and mauls were to be stopped from carrying on for too long, although it was not certain how effective these changes had been.¹³⁹ In 2005, following a severe neck injury to Leicester Tigers' prop forward, Matt Hampson, which had paralysed him from the waist down, there was further concern amongst the game's administrators over the safety of the scrum. The following year, James Bourke, a consultant general surgeon at the Queen's Medical Centre in Nottingham and former doctor for Nottingham RFC questioned whether the scrum was actually legal under the Health and Safety at Work Act.¹⁴⁰

As a consequence of these concerns and injuries, the International Rugby Board (IRB), at the behest of its medical committee – highlighting the importance of medicine within the sport – decided to make further changes to the scrummaging laws. Law 20 had previously stated that 'Before the two front rows come together, they must be standing no more than an arm's length apart'

to prevent the front rows charging at each other in forming a scrum. Instead, a scrum would now begin with the two front rows standing close enough so that the props could touch one another's shoulder before impact. It was designed to ensure that neither side had any forward momentum before the ball was put in to the scrum.¹⁴¹

Scrum had become increasingly uncontested at the lower levels of the game. Thus, there was another motive for the change. Fears over scrummaging had led to a decline in the numbers playing in that position; making it safer would encourage more to play as a prop as well as defuse the concerns of parents. Perhaps of more concern, however, was a fear that any proliferation of these types of injuries and the cost of insuring against them as well as providing care for injured players could bankrupt the game. It was estimated that the potential costs of catastrophic injuries plus lifetime care for a paralysed player was £6–8 million. Hampson had been awarded £1.125 million in compensation under the RFU's insurance policy but he also required the attention of 10 carers at an annual cost to his local health authority of £250,000 a year.¹⁴²

Reservations were expressed, however, over these rule changes. Jason Leonard, the former England prop forward commenting on the possibility of uncontested scrums, said that 'there's a danger that we'll end up with a world-wide game of tag rugby'.¹⁴³ This comment was understandable in light of the culture of rugby union. The scrum is basically a way to restart the game. However, it carries great symbolism for rugby union aficionados. The scrum is a test of strength and as such is part of the manly essence of rugby union and at the heart of the game's identity which places an emphasis on the struggle for possession. Thus, it is what makes union distinctive and, in particular, different from rugby league. There was a fear if the scrum was taken out of union it would look like league. In addition, teams also abused the new laws. For a brief period scrums in international games were uncontested if there were not enough specialist prop forwards available on both teams. As a consequence, some teams used this law change to their advantage, especially if they were being out pushed in the scrum. Overall, however, these debates, reflected on-going tensions between how sport, particularly those like rugby union, had a culture of risk and growing safety concerns based on medical evidence.

Conclusion

The ever-present threat of injury and danger has not only been something that most elite athletes have had to deal with but it has also come to occupy the minds of the sporting authorities. As a consequence, these concerns have brought together the relationship between sport and medicine on a more formal level due to the growing regulations that governing bodies have put in place. However, these regulations have also been a product of cultural and social

mores. At the outset many sports were about excess and thrill-seeking and this created the ever-present danger. Attitudes to injuries, therefore, were built on notions of masculinity and manliness and any moves to regulate sport were met with resistance and the saying cum cliché that 'it's a man's game'. However, the increasing media attention given to sport throughout the twentieth century also highlighted the injuries sustained by athletes. A greater sense of duty of care was a combination of a wider welfare ethos that began to permeate sport and practical concerns, in particular, protecting the image of sport.

While the demands of competition and the changing commercial nature of sport have been the most significant elements in shaping the bodies of athletes, the framing of sporting regulations has also been important. Of course, this has not always meant that the safety of the sport has been improved. To a certain extent, the danger in some sports has shifted in emphasis. Whereas in the football codes, there was a culture of general 'roughness' there has now been a gradual erasing of the violence that takes place. Instead, violence has become more concentrated at particular times and potentially more dangerous. In rugby union, for example, more focus is given to the technique of scrummaging rather than what the commentator Bill McLaren might have said, any 'jiggery-pokery' in the scrum. Moreover, as rugby union players have got bigger the game at the professional level has become more dangerous due to the nature and force of the collisions in tackles. In American football the adoption of 'two platoon' football in 1950 reflected the nation's more scientific and rational outlook as it created defensive and offensive specialists. In a game that was inherently violent, it meant that some players were now honing skills that were specific to one function, thus increasing the risk of danger.