HOUSE OF COMMONS

# Digital, Culture, Media and Sport Committee

## Oral evidence: Concussion in sport, HC 1177

Tuesday 23 March 2021

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Watch the meeting

Members present: Julian Knight (Chair); Kevin Brennan; Steve Brine; Alex Davies-Jones; Clive Efford; Julie Elliott; Damian Green; Damian Hinds; John Nicolson; Giles Watling; Mrs Heather Wheeler.

Questions 101 - 245

### Witnesses

I: Monica Petrosino, TeamGB ice hockey player; and Eleanor Furneaux, TeamGB skeleton bobsleigher.

II: Dawn Astle, Jeff Astle Foundation; Chris Sutton, Jeff Astle Foundation; Kyran Bracken MBE, Progressive Rugby; and Professor John Fairclough, Progressive Rugby.

III: Dr Charlotte Cowie, Chief Medical Officer, Football Association; Dr Éanna Falvey, Chief Medical Officer, World Rugby; Professor Mike Loosemore, Chief Medical Officer, TeamGB boxing and TeamGB snow sports; and Bill Sweeney, Chief Executive, Rugby Football Union.

# Examination of witnesses

Witnesses: Monica Petrosino and Eleanor Furneaux.

Q101 **Chair:** This is the Digital, Culture, Media and Sport Select Committee and this is our latest hearing into concussion in sports. We are joined today by three panels. For our witnesses and also for members of the public who may be watching us on television, we are going to take three standard adjournments today. Two of those are to change panels, but one will be to commemorate the national day of mourning of Covid-19, which will be at midday. We will be adjourning proceedings during that moment of silence.

I have been informed by Committee members that, very strangely, there are no interests to declare today, which is a refreshing change. I am going to crack on and introduce our first panel and then put our first questions. We are joined today by two athletes who have both had to retire due to concussive injury, Monica Petrosino, TeamGB ice hockey player, and Eleanor Furneaux, TeamGB skeleton bobsleigher. Monica and Eleanor, hello, good morning, and thank you for joining us.

***Monica Petrosino:*** Good morning.

***Eleanor Furneaux:*** Good morning.

**Chair:** In the introduction, I alluded to the fact that you both had to retire due to concussive injury. Monica, I will put the question to you first. What were the circumstances of that? What led up to it? How did you feel at the time? What was the abiding thing about the decision that you had to make?

***Monica Petrosino:*** In the end, it was my decision to retire. Obviously, there was no one in a position to say, "You have to retire." My initial injury was in 2015 and I initially had a couple of years off due to the injury—I obviously could not play contact. Then, in 2019, I thought to myself that I had rested for long enough and I was good to go back to the sport. I decided that I wanted to try to trial for TeamGB again, for which I was selected in 2019, unfortunately sustaining numerous other hits during that season and one in particular at the world championship. All of those concussion symptoms—things like the headache, the dizziness, not being able to speak properly—came flying back to me.

Probably about three months after the world championship, speaking to people like my coaches, the sports therapist and the medical team at the time for TeamGB women's, I was advised that they cannot put a number on the amount of head injuries you can have before it is your last one. Given the fact that I had had a grade 3 concussion in 2015 and the fact that I was getting these symptoms—symptoms were coming even from things like going to Thorpe Park during that year; my head rattling on the roller coaster was making me feel those symptoms—I was advised that it was not the best idea to keep playing.

In the end, I had to make that decision and that was also heavily influenced by my partner, who is a frontline NHS paramedic and obviously is aware of such things. I think that the most difficult thing was the fact that I had to make that choice because every part of me still wants to play. A big thing is that my teammates do not quite understand concussion and some coaches do not quite understand concussion. Some of them are still, "Do you want to keep playing?" and that is really difficult.

Yes, it was very difficult at the time and I would say that it is only probably now, two years later, that I really have put my kit away. It took me about 18 months to pack my kit away. Things like my last GB shirt that I played with, it is only this Christmas that my partner had it framed for me because I didn't want to look at it. That is how I feel now.

Q102 **Chair:** You retired at 24 so basically you had your first major injury at the age of 20, is that right?

***Monica Petrosino:*** That is correct, yes. I think that it was about two months before my 21st birthday, yes.

Q103 **Chair:** Had you encountered other injuries before that, as in head injuries, or was this a first?

***Monica Petrosino:*** Nothing substantial. Naturally, with ice hockey—I think there is a statistic like it is the fastest contact sport in the world or something—we all take knocks all the time. I am very short in stature, only about five foot, so normally if two players hit into each other, my head is normally hitting into people's abdomen area. My head over the years probably took a number of knocks but nothing like the hit that I had in 2015. That was very different and I felt very different. I knew that something was very wrong.

Q104 **Chair:** Was that in a match or was it in training?

***Monica Petrosino:*** It was in a match, yes.

Q105 **Chair:** Were you out? Did you lose consciousness?

***Monica Petrosino:*** The person who hit me, it was not a legal hit. I cannot remember exactly if they got a two-minute or a five-minute penalty, but they did get penalised for it because it was illegal.

I knew something had happened to my head because of, first, the fact that when I hit the ice, I think I blacked out for a minute as I cannot remember what happened. I remember getting back up off the ice with my coach helping me get off, and I can remember having this headache. It is a very specific headache. It feels like your head is crushing. I remember not being able to speak properly or anything. It was like my brain was not working right.

I didn't play the rest of that game, but unfortunately the thing that I was not aware of, and neither were my coaches or my parent, was that I

played a game the next day. It was in the game the next day I had been on the ice for about five minutes, maybe 10, and the puck was nowhere near me, I was up the other end of the ice. All of a sudden I just fell over and hit the deck on the ice. Obviously, at that point it was a bit more of a worry.

Q106 **Chair:** Monica, thank you very much for talking about this, and I am going to talk to Eleanor in one second about her experiences. I am just intrigued to know whether there was any protocol at all in place. Obviously, if someone is out or seriously dizzy and so on, it is pretty obvious that they need to go to the side lines. I do not understand why in 2015, which is not that long ago, you were allowed to play the next day.

***Monica Petrosino:*** I will be brutally honest with you. No, there was absolutely no protocol. I would not like to quote but I think at the time at a GB level, there probably was protocols. At the club level that I was playing at during those games, absolutely not, none at all on anyone's behalf—not mine, the coaching, nor my parent. I do not think that anyone—

Q107 **Chair:** Were your club games professional or were they amateur?

***Monica Petrosino:*** Amateur.

Q108 **Chair:** Okay, but the GB, would that be a more professional set-up?

***Monica Petrosino:*** Yes, GB would be semi-professional, because you do not get paid to play but you obviously get things like expenses and stuff.

Q109 **Chair:** Thank you, Monica. Eleanor, good morning. Thank you as well. I am afraid I am going to ask you the same sort of painful questions about your experience leading up to your retirement. I think that you were 25 when you retired?

***Eleanor Furneaux:*** Yes.

Q110 **Chair:** What were the circumstances?

***Eleanor Furneaux:*** My injury was January 2018. It was in the middle of a race. It transpires that I had had two knocks in three days. There was one knock where at the time it was not seen as anything particularly to worry about. I had cracked my helmet on my chin and I spent that evening sanding my helmet down to get the crack out.

Q111 **Chair:** Sorry? They did not replace your helmet?

***Eleanor Furneaux:*** No. We buy our own helmets and from my awareness I am not sure that they carry spares.

Q112 **Chair:** Okay. I am sorry to cut across you but I suddenly just thought that I used to play cricket rather badly, and in that, they have a protocol. It is very simple. If you are hit on the head and you are a professional, you are an elite athlete, your helmet is replaced.

***Eleanor Furneaux:*** That makes sense, yes. No, unfortunately, for skeleton that is not something that I am aware of being protocol. If we had a significant knock or a significant concussion in the year, we would be advised to buy a new helmet at the end of the season for the following season, but there was nothing in place to make that something that you had to do.

Q113 **Chair:** I am sorry to cut across you there, but please tell us your experience. You said that the helmet was cracked. I am really quite shocked to hear that there was not that protocol in place, but I suppose we are here to find things out, aren't we? You were saying that you sanded down the crack in your helmet before you went out the next day?

***Eleanor Furneaux:*** Yes. I sanded down the crack. I did not do a head injury assessment test that evening because I had spoken to my coaches, who obviously were aware of the knock but said they would give me the benefit of the doubt. I knew that I needed to train the next day in order to be in the best position possible for the race on the Friday, I think it was.

I think that I did the head injury assessment the next day, did the training, and then on the Friday it was the race. I felt absolutely fine, to be honest; I got halfway down and had quite a lot of speed behind me—probably the best half of the run I had ever done down the track. I had more speed than I was used to and I ended up skidding. Out of Kreisel, which is the big circular corner in this particular track, it gets quite hairy in the second half. I was skidding so I was out of control. There is not really a lot you can do in that situation. I ended up going into this particular corner very late, very badly, and I remember looking up very slightly, probably about this much, off the ice just to try to get my bearings and figure out what was going to happen. Then my head hit the ice and everything went black.

I cannot really remember the rest. I made it to the bottom somehow still on my sled. I was helped off my sled at the end. No one was really sure what had happened because although there are cameras that follow you down, obviously no one is actually there. You cannot really tell. These cameras might be from the back or from the side. You cannot necessarily tell. It is only the athlete who knows what has happened, and obviously, I was not really in a fit state to speak. I got off the ice and I was limping. I think it was my coach who was there, who was going, "Have you hurt your ankle? Have you hit your ankle? Are you okay?" There was nothing wrong with my ankle. It was that I had hit my head and the part of my brain that I had knocked and affected was affecting my leg and my ankle, I guess.

I was flown home the next day. I basically just spent the whole of that Friday—that was in the morning—asleep. I had had a phone call with our doctor from home. I had seen a track doctor. There was someone there, like a medic, who said, "She should probably go off to the hospital, she has clearly had a knock." They did not have an ambulance there because

they were just in an ambulance car or something—this was in Germany. They said, "We can call an ambulance but obviously that will take 10 minutes or so." They said, "Don't worry, we will speak to our team doctor back home in the UK so we'll be okay." He advised just to go back to the hotel and sleep. I went back and I slept for the rest of that day, that evening, and then I was flown home the next day. I cannot really remember the flight at all. Then that was it, really. I ended up getting home—

Q114 **Chair:** So you were concussed on the flight?

***Eleanor Furneaux:*** Yes. Weirdly, I remember being on the plane and I could barely keep my eyes open. For probably about three weeks in total I could not really stay awake for more than five minutes at a time. I was on this plane and I had someone accompanying me home, but he was not able to sit with me because of the seat allocations. He was sat somewhere else and I was on this plane. I fell asleep and then the plane took off. I didn't know where I was. I had completely forgotten that I was on an aeroplane and I remember opening my eyes and going, "Oh!" as you do when you wake up in a panic. I had no idea that this plane was taking off. It was quite terrifying.

Q115 **Chair:** Thank you. Was no particular reason given for why you were not taken to hospital, apart from the fact that an ambulance would take 10 minutes and the GB team doctor said, "Go and sleep and then we will fly you back tomorrow"? Apart from the track doctor, you did not see any medical attention on site as such in Germany, and then when you got home you called the local doctor?

***Eleanor Furneaux:*** I was flown home on the Saturday and told just to sleep and rest. On the Monday, I had an appointment booked in to see one of the sports doctors at the University of Bath, which is where the home of British skeleton is. That was on the Monday, and then he saw me and could barely speak to me because I was asleep. He called my partner in to say, "I need to speak to you," because I could not really understand what he was saying. He spoke to my partner. I think that they arranged for me to see a neurologist in London a few days later.

Q116 **Chair:** What speed do you get up to on a skeleton bob?

***Eleanor Furneaux:*** It is about 80 miles an hour. My max speed I went to is about 78 miles an hour.

Q117 **Chair:** Basically, it is a tin tray, isn't it?

***Eleanor Furneaux:*** Yes, essentially.

Q118 **Chair:** You are head first?

***Eleanor Furneaux:*** Yes, head first on a tray. It is shoulder height, drops down a little bit for your chin and then goes down to your knees.

Q119 **Chair:** It does sound fun but I have to say I probably would not think it is

a good idea to have gone there when you were actually concussed. You obviously had the head injury the day before. You could easily have died. We do read of people in bobsleigh and skeleton bob who do, unfortunately, die in accidents? It is not an uncommon occurrence, or to be very seriously injured.

***Eleanor Furneaux:*** Yes, it is extremely fun when it goes well and when it goes wrong it is extremely scary. You are completely out of control when you are skidding in certain situations.

Q120 **Chair:** I will turn again to Eleanor before I move on to our next questioner. More generally in terms of your perception of sportsmen and women suing national bodies, who do you think should be responsible for people when things go wrong? Should there be mandatory training in place for coaches?

***Eleanor Furneaux:*** That is a really difficult question. I am not sure who should be responsible as such. Obviously, as an athlete, you are aware of the dangers; you are aware that it is risky and that there is the potential for head injuries and the potential for certain other serious injuries. I think that there is a lack of education around concussion and head injuries particularly in skeleton and overall in all sports. That is a big thing for me.

I was not necessarily aware of the real dangers of concussion until after I had experienced it myself. I know that there are a lot of athletes that I speak to who are still in the skeleton programme in particular who think that all this awareness being raised of concussions and head injuries in sport and in skeleton is potentially damaging and going to ruin the sport, in their words. I don't see it as that, but had I not had the injury myself, I think I probably would have.

Q121 **Chair:** I suppose you would accept the fact that it is a highly dangerous sport, an exhilarating sport, as is ice hockey—as is most sport actually, apart from probably tiddlywinks—and you entered this with your eyes open in that respect. Is it really about the protocols, though? Basically, you know there is risk but it is about minimising that risk?

***Eleanor Furneaux:*** Yes, absolutely. You are completely right. You enter it with your eyes wide open. You know that you are putting yourself at risk every single time you go down on a run, but the danger is that as an athlete you want to do everything you can to be in the best position for a race so that you can compete. It does not even have to be for your country, for anything. If you are in a team sport, you want to be part of that team. You want to be—*[Interruption.]*

Q122 **Chair:** I think that you have frozen. All right. Monica, my final question in this part before I hand over to Alex is quite similar to what I just asked Eleanor. Do you think that coaches are properly trained at not just GB level but obviously the very good amateur level as well, which you were part of in your team? Who do you think ultimately is responsible for all this?

***Monica Petrosino:*** I can speak on the coaching behalf because I am now in a position that I am part of the GB women's coaching team. No, for me as a coach there is no formal training on head injury or concussion protocols. We all have to do our coaching courses, our safeguarding courses and our general first aid courses. There is absolutely no awareness of concussion. I believe that perhaps the sports therapy side of things is a bit more informative for head injuries.

Certainly, in my sport it is very disjointed. You may one year have a very good sports therapist who is very well informed on head injuries, but the issue is that if next year he does not continue, then obviously his information will not be carried over to the next year if you do not have as experienced a practitioner.

Q123 **Chair:** What you are saying there is that people come in, come out, everything else like that?

***Monica Petrosino:*** People come and go, yes. What I think would need to be done is that like you absolutely have to do a safeguarding course, so it should be that you absolutely have to do head injury awareness. I think that that should be at an amateur level and it should be at a GB level. I register with my governing body, the English Ice Hockey Association, for me to say I am a level 2 coach. I cannot do that unless I have that safeguarding tick box. The head injury and concussion awareness should be another tick box.

Q124 **Chair:** Yes, I see what you mean. You are almost relying just on your experience in that respect, aren't you?

***Monica Petrosino:*** Absolutely. The only reason I have any idea of anything is because of my own.

Q125 **Chair:** There is evidence as well to suggest that players of all sports who suffer concussion then suffer injuries following that in other parts of the body as well—they are much more likely to. You are nodding there. Is that your experience? Do you think that is something that means that as a sports therapist and as a coach you need to understand that being au fait with concussion means that you are doing your job in terms of looking after the whole body of the individual as well?

***Monica Petrosino:*** Yes, I agree. Certainly, for me, when I was in a position to come back to my sport—and it was two years I had off—the things that I definitely had were less co-ordination and also an absolute fear of going into the corners. Before, me as a player, I would go 100 miles an hour into the corner and I would see red and I would get that puck, whatever the case. I can 100% say that when I came back to it post-concussion, I was fearful of going into corners in case I took another hit. That hesitance of going into the corner can easily cause other injuries. It might be that someone hits me awkwardly because I am not up against those boards. I completely agree with what you are saying about sustaining other injuries because of it and I think it is important that they know that.

Q126 **Chair:** That is really interesting. You almost need counselling to a certain extent after something like that. You almost need basically to find some cognitive behaviour in order to cope with that.

***Monica Petrosino:*** In a way, yes.

Q127 **Chair:** I know this as well in terms of any sport. Basically, if you feel fearful about something in that sport, you are more likely to do yourself harm. It is like football. If you do not commit to a tackle in football, you are more likely to be injured as a result.

***Monica Petrosino:*** Yes, it is that hesitance, that split second, especially in ice hockey. When you do a check against the boards, if you are hesitant by even a split second, that can be the difference between you taking a clean hit and it being not a clean hit and you breaking bones.

For me, one thing that I felt was affected was my co-ordination. My peripheral, my ability to take in all of this information at once, was definitely affected. Whether that was due to the head injury directly or whether that is a confidence thing you cannot say, but it was affected. So, yes, absolutely, eligible for sustaining other injuries.

**Chair:** Thank you, Monica. We have Eleanor back, I think. I am now going to hand over to our next questioner, Alex Davies-Jones.

Q128 **Alex Davies-Jones:** Thank you both for being with us this morning. Have you experienced any differences between the professional and amateur, in both of your experiences, where your injuries have been concerned? Monica, do you want to go first?

***Monica Petrosino:*** Okay, yes. Yes, I definitely have. At a GB level, as I say, there are things like the sports therapy team and the medical team. They have started rolling out things like pre-head injury tests where they ask you all the questions, and obviously the testing afterwards if you sustain a head injury, the questions again. There are things like one of our sports therapists one year was studying special gum shields that could detect the level of impact that your head was having and whether it was rotational impact.

That is at a GB level, but then there is nothing in between. If you go to an amateur level, there have been many times, even after people knew that I had had this horrific injury—in 2019, when I was playing at a club-level game, I did take another knock to my head at an amateur level. My coach was of the impression, "Well, come on, we need you". Obviously, I am in a position that I am a GB player at the time so, yes, I am probably quite influential on the ice and they want to win and I want to win. As an athlete, you will do anything to get back on the ice.

Yes, there is a huge difference. At an amateur level, they do not even consider it. They are like, "Oh, she has a bit of a headache."

Q129 **Alex Davies-Jones:** I am so sorry to hear that. Eleanor, have you had anything similar? What have your experiences been between the amateur

and professional level of your sport?

***Eleanor Furneaux:*** To be honest, GB skeleton is quite different because it is so small. We do not really have amateur or professional, in a sense it is all professional. As soon as you are on the programme you are in the GB team. Yes, unfortunately for me, I cannot really say anything on that.

Q130 **Alex Davies-Jones:** Yes, I understand that. In your experience then, is there any difference between the men's sport and the women's sport in your profession?

***Eleanor Furneaux:*** It is only since I had my head injury and quite recently that I became aware of the stat that females are twice as likely to get head injuries or to sustain a head injury than a man. That is not something that I was aware of before. Obviously, you are going at very similar speeds. Even though the men push a bit faster and in general are a bit heavier, that is it, really. You are going at very similar speeds and there is not massive amounts of difference between the two.

Q131 **Alex Davies-Jones:** Monica, are you aware of any differences between the men's team and the women's team and the protocols that are adopted?

***Monica Petrosino:*** There is one major difference in women's ice hockey to men's and that is that we are not allowed to do what is called body checking. If you have seen an ice hockey game, that is where they sort of smash each other into the boards. That is nothing to do with head injury, that is to do with women having breasts and it is so that we do not hit each other directly body to chest. The rest of the game is absolutely the same. All the rules are exactly the same. That is the only difference, so no, there is no difference in terms of head injury awareness. As Eleanor pointed out, yes, we are more likely to sustain a concussion injury.

Q132 **Alex Davies-Jones:** Okay. Monica, you mentioned that you have been doing your training for your badges so you can train young athletes now. Is there a difference between how the protocol is adopted for young players in the game?

***Monica Petrosino:*** I am very new on the coaching scene. I have been in the position a year but obviously with Covid it has been a little bit sticky. At the minute, no, I haven't seen any difference. I am coaching at the under-16 women's GB level. I cannot at the minute see any difference between this and what I experienced at the senior women's level.

Q133 **Alex Davies-Jones:** In your experience, who should be making the decisions on these protocols? Should it be the individual sports or should it be the Government? Should it be a governing body? Who in your opinion should the responsibility lie with for adopting protocols?

***Monica Petrosino:*** I believe it should be a Government decision. My governing body is Ice Hockey UK. I mentioned before that to register I have to do a safeguarding course, and that is a tick box. I believe that that is a rule set out by the Government that anyone coaching has to do

safeguarding. I believe what should be in place from the Government is that everyone who wants to register as a coach should do a head injury and concussion awareness course.

In terms of who funds that, because I know that is always the next question—who pays for it—I am in a position as a coach that if I want to coach I have to do that safeguarding course so I am liable to pay for that course. Obviously, when you get to things like GB level, governing bodies might pay for it, but at the end of the day if you are wanting to be a coach and you are motivated to do that, then you should be aware of what is going to happen to your athletes. That is how I see it.

Q134 **Alex Davies-Jones:** Eleanor, I will come to you as well. In your opinion, where should the responsibility lie for implementing these protocols?

***Eleanor Furneaux:*** I think the same as Monica, really. I agree, it needs to be Government level, and if not Government then overall federation of the whole sport. For skeleton, that is the IBSF, which is the overall head of all of the nations. At the moment, there is too much onus on the athlete and then the coach. Realistically, as Monica mentioned earlier, an athlete is going to do everything possible to get back on that ice. You have a headache, you think, "It will be fine, I will just brush it off. I have to play, I have to get back, my team needs me," or, "I need to do this race for myself." It is difficult, but the coach is probably going to be on your side with that.

In my experience, if you feel okay to do it and if you pass the tests—and quite often I found that you are able to learn the tests off by heart—then yes, there is nothing stopping us. The question is asked often, "How do you feel? Are you okay?" You go, "Yes, I'm fine, let me get back, let me do it, I am okay." It should not be down to us and the coaches. I think that it needs to come from higher up, saying, "Okay, there has been some sort of impact. Right, you're off", like there is in rugby. You have a head injury and if you do not pass it first time or if there are symptoms at all, then you are off, aren't you?

Skeleton especially is much smaller, it is not as mainstream as the rugbies and the footballs of the world, but it needs something implementing because at the moment it is dangerous trusting the athletes, almost.

**Alex Davies-Jones:** Yes, absolutely. Thank you both.

Q135 **Giles Watling:** First of all, thank you both for being here today. I am incredibly impressed and I am in awe of anybody who can rush around on the ice like you both do.

I want to know about the transparency of the science of this. It would appear from all the evidence that most organisations that organise sport say there is nothing inherently dangerous in any particular sport, but there is a balance to be struck. We know that sport is good for you. It keeps your weight down. It keeps you healthy and reduces the risk of

injuries. Is there enough information for people, parents perhaps and participants considering taking up the sport? For instance, when you took up the sport. Do you regret taking up the sport? Can I go to Eleanor first with that?

***Eleanor Furneaux:*** First, I don't regret anything. The only thing I probably would regret is pushing and not stopping earlier after my head injury. I tried for a year to get back and I pushed and pushed and pushed. If I had stopped earlier, it would probably have been better for me.

When you take up the sport for GB skeleton, you can only trial from the age of 17 and above. It is known that it is quite dangerous if you are any younger, but there is nothing stating that you could have a head injury, you could do this, you could do that. You are not aware of that.

Q136 **Giles Watling:** The organisations want to promote the sport but, of course, they must have a duty of care to say to you as a potential participant, "These are the dangers and you have to look out for this." Did that happen?

***Eleanor Furneaux:*** I am not aware of that conversation ever actually happening, but I know that obviously it is down to the athlete. In a sense, you know what you are getting yourself into. You are sliding head first on a concrete track covered in ice at 70 or 80 miles an hour. It sounds as silly as it is.

**Giles Watling:** You do not have seatbelts on those things.

***Eleanor Furneaux:*** No, exactly. I think that if you play the "I wasn't aware that I could get a head injury" card, then that is on you because it is inevitable that something is going to happen. Some people go through their whole career and never end up having an issue, but a lot of athletes do. There are also vibrations in the track, which obviously causes headaches. If you keep going and pushing through more runs a day, then those vibrations turn into headaches.

Q137 **Giles Watling:** Does that lead to spinal injury, too?

***Eleanor Furneaux:*** Not that I am aware of, no, but then they are really looking into the effects that the vibrations can have on the body at the moment. That is a study that is being done.

Q138 **Giles Watling:** I will move on to Monica with this one. Monica, do you think you were informed? Were you told about the risks?

***Monica Petrosino:*** It is slightly different for me. I played ice hockey from when I was six years old. I watched "Mighty Ducks" when I was six years old and I said, "That's what I want to do". From the very beginning, I was very motivated in wanting to be in GB. I used to look up to them and that was what I wanted. I would have done anything to get there.

Because it has been part of my life and obviously I was a child when I started, no, there was no influence on what might happen to you. You are taught about good behaviour on the ice, like don't go hitting someone around the head with your stick or something, but no, there is no formal, "This is going to happen to you." I guess when you get to that GB level you realise at an international level, yes, you are going to take bigger hits, you are going to take bigger knocks, but there is no formative structure of teaching you about the awareness. As Eleanor said, I think it is on your back, really. You cannot stand there and say, "I did not know that I was ever going to get injured."

Q139 **Giles Watling:** No, quite. Can I ask you, though, do you think there should be? Do you think there should be some formalised information for people taking up the sport?

***Monica Petrosino:*** Obviously, because I was a child when I started, perhaps there should have been better information to my parent. My mother had absolutely no idea of concussion or head injury.

The big thing that I think is important, echoing what Eleanor said, is that there needs to be more information about what happens when you try to return to your sport. When you play at a GB level or at that elite level, the way we are motivated is we will do anything to get back into that GB shirt. I was very much similar to Eleanor in the fact that when I had my time off I wish I had taken longer. I wish I had not tried to get back, because now I am in a position where it might affect me for the rest of my life, those decisions I made. It is a horrible feeling because I now think to myself, "What if I didn't take that last hit? What if I didn't hit my head one more time? Might my life be different?" and that is really scary.

Q140 **Giles Watling:** Would you have preferred to have had better intervention, medical and psychological?

***Monica Petrosino:*** Yes, post-injury, definitely, and almost counselling to deal with the fact that you are having to retire and that it is the best thing for you, having to deal with that. I felt like I lost a bit of my identity, really, when I no longer was part of GB, when I finally said I have to retire. I felt like I had lost my thing.

Q141 **Giles Watling:** That was a big part of you, okay. Can I move on? What would your message be to people taking up a career or an occupation like yours? What would you say?

***Monica Petrosino:*** Yes, go for it. I do not regret anything. I would 100% do it all again. Depending on the age of the person taking it up, if they are an adult already, make sure you are aware of things like head injury and what to look out for. There apparently are some very common symptoms. Maybe it is not just a headache, maybe it is not just the fact that you have difficulties with your talking, so a bit of awareness, but yes, go for it. I would not stop anyone playing.

Q142 **Giles Watling:** I will ask the same question to Eleanor. What would your

message be to people considering sliding down a piece of ice on a tin tray?

***Eleanor Furneaux:*** Mine would be again absolutely go for it, sign up. It was the best five years I have ever had. I really enjoyed the experience and the opportunities that it gave me.

It would just be to be aware and don't push it. If there are any sort of symptoms, if you are starting to feel slightly foggy, if you are tired even—sliding on ice at 80 miles an hour head first when you are slightly tired or slightly fatigued is dangerous because you are so much more likely to get a head injury. You would prefer to sit that one run out than to have to retire or to be left with a serious concussion or head injury for the rest of your life.

Q143 **Giles Watling:** The final question, Eleanor: would you have preferred greater intervention, if somebody had come and helped you with those decisions, "You need to sit this out"? Would that have been something you would want?

***Eleanor Furneaux:*** Absolutely. In hindsight, yes, I wish I had that.

**Giles Watling:** Thank you very much.

Q144 **Chair:** I have a couple of final questions for you, Eleanor. Monica talked about basically the fear of long-term effects through your life as such. Obviously, we have seen a lot of very tragic tales in recent times and we are going to be seeing some of those in our second panel today. Do you fear for the future?

***Eleanor Furneaux:*** I do. I don't like to think about it because in my opinion the damage is already done. That sounds really tragic but the head injuries have happened and unfortunately I did sustain multiple head injuries. Apparently, certain people are more likely to get head injuries than others, and maybe I am one of those people. Yes, unfortunately for me the damage is done so I do not like to think about it too much. I do not like to dwell on it. With all of the recent information coming out about later on in life after having multiple head injuries, it does worry me.

***Monica Petrosino:*** Something I would like to add to that about long-term injuries is that very recently I was admitted into hospital due to some left-sided weakness that I had started having and loss of continence. This is very, very recently; we are talking the last few weeks. I have been referred to neurology because the thing that has been said to me a few times is that they are testing for MS, multiple sclerosis. The biggest shock of my life was when they said to me, "Have you ever hit your head at any point? Have you ever had a traumatic injury?" I obviously spoke about my concussion, and they told me that it is something like 22% more likely that you can have conditions like that. They have not confirmed it yet, but purely based on the fact that it is something that they said absolutely could influence it, I am now having

to, first, accept the fact. It might not be, it could have been that I was born with something like this, but for me it is a huge thing. That might have been the difference between me getting back on the ice and not getting back on the ice, so I wish someone had stopped me before it might have been too late. Yes, that would be the most important thing. It does affect you for the rest of your life.

**Chair:** Monica, words fail me. I am really sorry that you are having to go through that, and Eleanor as well. Your evidence has been incredibly compelling and really insightful. I want to thank you both today for being so brave to talk about this in public, particularly as you love the sports and that comes across as well so well. I want to thank you both. We are going to conclude the session there and I wish you all the best. Thank you once again.

We are now going to take a short adjournment before our next panel.

*Sitting suspended.*

*On resuming—*

## Examination of witnesses

Witnesses: Dawn Astle, Chris Sutton, Kyran Bracken MBE and Professor John Fairclough.

**Chair:** This is the Digital, Culture, Media and Sport Select Committee and this is a hearing into concussion in sport. This is our second panel. We have four witnesses as part of our second panel. They are Dawn Astle of the Jeff Astle Foundation, Chris Sutton, ex-professional footballer, of the Jeff Astle Foundation, Professor John Fairclough of Progressive Rugby, and Kyran Bracken, a former professional rugby player, also associated with Progressive Rugby. Dawn, Chris, John and Kyran, good morning and thank you for joining us. Our first question will come from Giles Watling.

Q145 **Giles Watling:** My questions are almost uniquely for Dawn. I have read some of the background, Dawn, of why you set the foundation up and why you got involved. It would be good to get that out in the open, so please tell us what happened. Tell us the history of the Jeff Astle Foundation.

***Dawn Astle:*** Following the death of my dad at the age of 59, we wanted to set up a lasting legacy for him for past, current and future players by establishing a charity in his name. We had three aims. The first was support for those in football and their families who had similar experiences to us, watching their husbands and dads die of dementia, and those who were still living with dementia. We had had so many calls from families of former footballers all in need of support, and because we

had lived through it ourselves we felt we were best placed to do that. We were not going to be dismissive and we were going to be honest with them.

The second aim was education. Head injury in sport and its associated immediate and long-term risks is a major public health issue and we wanted to see clear, consistent, robust information on all aspects of head injury management, including CTE, which is the disease that my dad died of, and see that this information was disseminated effectively.

The third was independent research. It is a very complex and fast-moving field but one where we felt there were national and international experts in research in brain injury positioned to lead. Sporting bodies like the FA and the PFA, my dad's union, had tried to take on this research on this highly complex organ in-house and it invariably failed to deliver its stated aims. We were always going to push for independent research.

We wanted acknowledgement from the game of what had happened to my dad, to be able to make a difference to those for whom, unlike him, it is not too late, those already suffering like he did, and those who are or may be a ticking time bomb of the future.

Q146 **Giles Watling:** Thank you very much. I absolutely understand and thank you for outlining it. There are many organisations and charities that deal in this area. What uniquely did you think your organisation could bring to this?

***Dawn Astle:*** We wanted to be the voice for all the families who were struggling, who were on their knees trying to look after players, football players, who were dying of dementia. It came about because 10 months after my dad died at the age of 59, we attended a coroner's court in Burton upon Trent where a leading pathologist stood and described how badly damaged my dad's brain was. He said that there was trauma all the way through the brain; every slice of my dad's brain had trauma in it and it looked like the brain of a boxer. He was not a boxer, he was a footballer. He believed that it was the repeated heading of footballs during my dad's career that had caused this. Then, of course, Her Majesty's Coroner Andrew Haigh actually said, "His type of dementia was entirely consistent with heading a ball. The occupational exposure has made at least a significant contribution to the disease" that killed him. The ruling was industrial disease.

We assumed, incorrectly, that the inquest ruling about it being a result of repeated heading of footballs would be a defining moment and that the sport would react with vigour to protect future generations of footballers and to help the footballers' past heroes who were dying, as I say, and the many families who are often facing collapse. We also assumed, incorrectly, that the research that they started in 2001, which was funded by the PFA and the FA, would address the two most obvious questions: how many former footballers have dementia and do we have a problem

with our former players and dementia and, just as importantly, is the game safe now? It did neither.

Q147 **Giles Watling:** What happened to that research?

***Dawn Astle:*** The research just tracked 30-odd footballers, so youngsters in the game. Some of them dropped out of football and those who remained have not been followed up beyond five years. It was supposed to be a 10-year longitudinal study. It collapsed in about 2006. At that time, it was not published. Nobody had the courtesy to tell me or my family. More importantly, this was 12 years after my dad had died and we were no further forward. The study was only published when we challenged the PFA and the FA as to where it was. I believe that that study was, in a nutshell, shoved in a drawer, that drawer was locked, and it only came out, as I say, because we challenged where it was. That is not good enough.

Q148 **Giles Watling:** I expect that we will probably hear some sort of defence on that further down the line, but it is a very moving tale. Thank you so much for being here.

I have a final question before moving quickly on. I think that one of your aims is to set up a care home and good luck with that. I hope that works. That is generally for sporting people, not just footballers, I understand. Is your focus on making sport safer now or advocating for those affected in the past? Which would you say is your primary focus?

***Dawn Astle:*** I cannot really split it, to be honest. It is both. I want to make sure that these players who are affected are looked after properly. I also want to make sure that the game is safe, safe for players now, players in the future, and children coming into the game. Sport just has not done enough and they should hang their heads in shame, in my opinion.

**Giles Watling:** Thank you very much.

Q149 **Damian Hinds:** Can I turn to Kyran to continue on the theme of research that Dawn was just speaking about a little earlier? To understand your perspective on the role of the Concussion in Sport Group, do you think it is too conservative perhaps in its assessment of the available scientific research or is there just an absence of important scientific research? Is there possibly even a conflict of interest, given that that group is ultimately, I suppose, funded by the sports industry itself?

***Kyran Bracken:*** I think that there is a massive conflict and there is a problem in rugby at the moment. I have joined the Progressive Rugby group of ex-players who feel that the pace of change is just so slow it is ridiculous.

You heard the very moving words of Monica and I relate that to my career when I was playing. Just thinking about this, in 1980 the head injury protocol came in that players would stand down for three weeks. I had about eight, 10, 12 concussions, knocked out on many occasions,

and the only time I took three weeks off was when I was knocked out on Sky and we thought it best to declare that. Every other time I played on, unable to see the ball out of one eye sometimes, sick at half-time in the changing rooms.

There was a massive feeling of denial from the players. There was no such thing as education either. No one came to tell us about what the damage could be. The culture was to stay on the pitch. Nobody left that pitch. You heard from Monica and Eleanor; the feeling has always been like that, and you can see it now, even though there are protocols in place.

This is the thing that really concerns me. The game of rugby, since it went professional, has changed hugely. First, the players are bigger and stronger. You are likely to see the likes of Jonah Lomu all over the place now in the backs. The rules in the game have changed so that the ball is in play 30% more than it ever used to be because of the rule of kicking it outside the 22. Effectively, that means there are more tackles and there are more head injuries. Every single team has a professional defence coach and their job is to basically cover any space on the pitch. Rugby has now become a game of collision and not evasion. I am not saying that is a bad thing but that is the truth of it. The third change in the laws allowing lots of substitutes to come on to the pitch and change the direction of the game means the impact and the intensity is huge. Recently, Italy said that it put its best front row on the bench so that they could come on to the pitch in the second half against a tired front row.

Think about it. We know that there are lots of head injuries. We know that there is more intensity, there are more tackles in a game, yet we go from a three-week mandatory break in 1980 and we bring it right down to six days in 2011. Where is the common sense in that? There is no common sense in that.

I don't really want to talk about the ex-players because some of the stories are very upsetting, like Monica said; some of them suicidal, some of them really struggling with day-to-day chores. But there is a problem in the sense that what is relevant for the professional game is really not relevant for the amateur game. We want to extend the return to play to at least 14 days so they do miss two matches. We want to limit contact in training, like the NFL, and we want to experiment with changing the laws. What is relevant for the professional game just is not relevant for the amateur game. I coach in the amateur game and I think there is a massive divide between the two. I see that as a problem.

Q150 **Damian Hinds:** Coming on to the amateur game, where is the most important area of focus? Is it awareness among GPs and A&E departments about dealing with concussion or is it in the clubs themselves, bearing in mind that obviously in a normal amateur game if there is a doctor present that will only be coincidence because it is someone's dad or a participant? How do we deal with that at scale in the

amateur game?

***Kyran Bracken:*** It is a real problem because not every team can afford to have that presence—for example, the university third teams or the vets teams are not going to have a doctor on the side of the pitch. Effectively, what happens in the amateur game—and I accept that my school at St Albans is slightly different and we would treat it very seriously and other clubs would—is that by and large it becomes a self-assessment, whereby the players themselves, with no doctor on the side, are self-assessing what is happening. The mode that they are in is exactly the same mode that you see in a Six Nations match, where the player will be knocked out and will stand up and say, "I'm not coming off, I'm absolutely fine." What you see on TV is what you see on every single rugby pitch up and down the country. If you are at university and you are in the third team, you are not going to go to A&E when someone says you should, you are going to go out with the boys and you are going to train on the following Wednesday, aren't you?

It needs a lot of education and I think it is the job of the ex-players like myself and other players who are struggling post-rugby to try to educate them. I feel that world rugby is just too slow to respond to it all.

Q151 **Damian Hinds:** Kyran, I do not want to put words in your mouth, but it sounds from what you have been saying about both the professional game and the amateur game that there are four levels that you need to address this at. First, there is what protocols there are for dealing with injury. Secondly, there is whether those protocols are actually implemented. Thirdly, there is the wider changes in the game. Fourthly, there is the thing about culture and people's willingness to challenge or to talk to teammates and say, "No, you really should not train this Wednesday." Is that a fair assessment that all four of those levels need to be addressed simultaneously?

***Kyran Bracken:*** Yes, they all need to be addressed simultaneously. We never had players come in to talk to us about what it could be like if we play on with head injuries. Now there is living proof of what it is like to live with early onset dementia. If someone came to me and told me that, on the eighth or tenth occasions I would certainly have left that pitch thinking I want to have a life after rugby. Education is a problem.

You also have to understand that a lot of the problem comes from the pressures to win. I see it all the time in amateur rugby, even at the age of under-12s, where a team would have their star player in the centre who is running through everyone and scoring the tries. He will get a knock in, say, the third or fourth minute and the coach and the parents and everyone are like, "Don't take him off, he has to stay on, he has to win us the game," and that is a real problem. You see it in international rugby and you are going to get it on every pitch up and down the country, and that is a problem.

Q152 **Damian Hinds:** Kyran, thank you very much. Can I turn to Chris for a

single question? We may get a chance later on to talk more about the sub-concussive injuries, but specifically on children playing football, now that under-11s are not meant to head the ball in training, isn't it a bit peculiar that they still can in matches?

***Chris Sutton:*** Is it peculiar that they still can in matches? I think the view on that is that there is not a lot of heading in matches. That is the view. Where we are across the whole board with these things—I have to say, and Dawn has already touched on this, this meeting we are having today should have happened 20 years ago. Dawn has shone a light on this whole football and dementia issue. The fact of the matter is the authorities, the FA and PFA, have not done anywhere near enough. They have ignored and have turned their back on what has been a massive issue. Hundreds of players have died, my father included. He was not a big household name. He died. We are not just talking about the professional game here. We do not even know what has happened in the amateur game. This is something we need to deal with and deal with now.

Even if you do not agree with any of the research that is out there, the Willie Stewart research, there are simple preventative measures that we can put in place now that can help generations to come. I do not know whether you are aware of the permanent concussion substitution issue in football at the moment, but this is one of the areas that must change and must change immediately. They should immediately ratify temporary concussion replacement rather than the permanent concussion replacement, because the permanent concussion replacements at this moment in time do not have the players' welfare and health at heart with that.

Secondly, clubs should limit heading at all levels, including professional, to a maximum of 20 headers per session in training and a minimum of 48 hours between sessions. Lessen the load. This is something through *The Daily Mail* charter that it has brought out that needs to happen. We do not need to keep having meetings about meetings about this. This needs to happen immediately. Hundreds if not thousands of players have died from dementia. If we do not get on top of this now, this is going to carry on and carry on and hundreds and thousands more will die from this. It will affect my generation as it has affected my father's generation. We have not done anywhere near enough.

It is really important that the Government take ownership of this because the FA and the PFA have not done anywhere near enough. They have not been interested in it because it does not benefit them in any way, shape or form. Gordon Taylor, who is stepping down now, has blood on his hands. We have to recognise this. We cannot keep talking about this. There are things we can do, preventative measures that we need to put in place and you need to take ownership and do it now.

Q153 **Julie Elliott:** Kyran, I would like to go back to the evidence you were giving a few moments ago about the pressures on players to win. You

think that is the same at professional level, senior level and grassroots. Somewhere somebody has to make a decision to say, "You need to leave the field if you have had a head injury." Clearly nobody said that to you or nobody made you do that in the majority of cases you had had injuries. Who do you think that person should be and how do they get the authority to do it, and not have these pressures you have talked about, to be able to have the welfare of the person who has had the head injury at heart and let nothing else affect them? How do we move forward on this?

***Kyran Bracken:*** Probably the most important thing is education. I would love the ex-players to go around every professional team around the world and explain what it is like to have early-onset dementia. We have never had that and we do now have living proof that that is happening.

Secondly, you are never going to get away from that ambitious coach who wants to win the league and you are never going to get away from the Johnny on the pitch who wants to win for his team and gets a head injury and thinks, "I'm not going to say anything." The pressures to win and the pressure for the coaches to do well is a real problem.

There are lots and lots and lots of exceptions. At St Albans School, whenever we have an injury they come off. We do not care. We sit them out and we extend them more than we should. But some schools and some clubs, unfortunately it is all about winning and you are never going to take away that mentality.

As Monica said, there should now be videos sent to all of these clubs to show what it is like to deal with and live with early-onset dementia. If they had that tool and if all the players understood and bought into it, and the coaches, over time we will get a chance to change the course of action. But the biggest thing that we need to do urgently in the professional game is to extend the return to play from six days to at least 14 days and limit contact training. Let's help these people. Also change the rules. Why not bring on fewer subs and make it less of an impact game?

At the same time, change the rules for school rugby. We do not like in school rugby where the opposition player is allowed to go over and try and nick the ball and his head is exposed to the opposition who can come in and clear them out. I think that what is relevant for professional rugby is not relevant for school rugby or vets' rugby and we need to have a fresh pair of eyes. I am so delighted that you are looking at it, because unfortunately there is so much pressure not to change and just to leave it as it is and hope it goes away, but this is just going to get worse and worse, as Chris has said.

Q154 **Julie Elliott:** One of the things you have said there is the professional game is very different than the grassroots game, particularly for children, but children do try to emulate what they see on the television. Whatever rules of the game are there, that is what children do, whether it is in

rugby, football, gymnastics, whatever, and often get nasty injuries trying to do that. Is there anything that we can do, particularly for young people—where their brains are still developing, their bodies are still developing—to point out that this is a different game, "It is not the game that you are playing. You might go on and play that game but this is a different game and different rules apply." What do you think we could do in that arena?

***Kyran Bracken:*** We could experiment with different ways of playing. One thing that has been mooted is in France there were a few head injuries and a few deaths and the French Rugby Union decided that in youth rugby all players would tackle below the waist. That happened in 2019. I am not sure where that has gone because of Covid and we have not returned to rugby. So there should be experimentations about the way the game is played. Rugby league defences that are in the rugby union game mean that there are a lot of double tackles. One goes low, one goes high and invariably hits the chest and the head.

There are lots of easy wins that we could do. We have noticed at St Albans that a lot of the injuries that we get and concussions that we get are in the first month of September when they come back to school, when the ground is hard. We do not have the 4G pitches and the nice pitches that the professionals do. A lot of the players have spent the whole summer doing what they want to do and suddenly they have a match on the first weekend with the hard grounds, and they are suddenly tackling. We think that for amateur rugby, grassroots rugby, there should be at least a three- to four-week return to play, a slow, gradual return to play. We should start the season a bit later when the grounds are a bit softer and we should experiment with the laws. Like you say, we do not want to emulate these double tackles and the high tackles that you see in professional rugby.

Q155 **Julie Elliott:** Chris, could you comment on the same thing in terms of football? Footballers do not leave the pitch when they have head injuries a lot of time, whether it is in a professional game or in grassroots football. What could be done to make that happen, to make players think, "I've had a knock here, I need to go off," at either level of the game?

***Chris Sutton:*** I am not a medical expert but I heard Willie Stewart on here last week. He called it a scandal, the fact that there are not temporary concussion replacements at this moment in time. Football is lagging behind. It is in the dark ages and that just needs to change, as simple as that.

It was interesting listening to Kyran talking about the need to experiment in rugby. I do not believe we need to experiment in football, or I know we should not be experimenting. We know that heading damages your health. I worked out that if I headed 100 balls a week, which is a low estimate, 40 weeks of the year, and my career was 18 years, that would be 72,000 blows to my head. That is not going to do me a lot of good.

The fact of the matter is all asking for the reduction of heading in training is going to do is lessen the load. This was not me who put together the 20 headers per session with 48 hours in between sessions; this is Willie Stewart, an expert. Twenty headers in a session, you have impaired brain and memory loss for the next 24 hours. This is a fact, it is out there. Why are we not dealing with this?

Q156 **Julie Elliott:** Can I interrupt you there? Do you think heading should not be in the game anymore?

***Chris Sutton:*** This is a debate for further down the line. All I am saying is at this moment in time there are people out there and people in high places in footballing authorities who are totally dismissive of the research. All I am saying is even if you are dismissing the research, why do we not put preventative measures in place? There is no downside. I have five sons and I used to take them out for heading drills when they were eight, nine, 10. I feel guilty about the fact that I have done that. Had I known what I know now 25 or 30 years ago when I was doing heading drills with 50 balls or 60 balls on a Tuesday afternoon and trying to head the ball back as far as I could, I would have had a choice to make and I certainly would have made a different choice now had that happened.

This has gone on for too long. This has gone on for far too long. Dawn has been the shining light with this campaign. John Stiles. Families have been affected. The way my father died, 10 years of slowly slipping away, it was a horrible, horrible death, the way he died, on his own on Boxing Day. We could not visit him, we could not go and see him. This was a strong man, a physical man, who could not walk in the end. He just lay on a bed weeing himself. It was awful.

The fact of the matter is we can do something about it now but this is why you need to take ownership of it, because the FA and the PFA quite frankly have not stepped up for the last 20 years. There are still people within the PFA who were part of the decision-making process with Gordon Taylor, who still seem to be part of this decision-making process. That should not be happening. There are simple things we can do. Why are we not doing them? That would be my question. You are all informed people. That would be my question to you. What is the downside of putting these things in place? There is not one.

**Julie Elliott:** We have heard what you are saying. Thank you very much, Chris and Kyran.

Q157 **Alex Davies-Jones:** Thank you to our witnesses for joining us this afternoon. Chris, if I could come to you first, do you think that today's players are sufficiently aware of the risks?

***Chris Sutton:*** It is a good question. I have to say when I played I was not aware of the risks. I think players, with the publicity over the last year, maybe are. I do not know if it hits home, though, with the players. I am not sure whether they are aware of the risks. Back when I played,

had there been more of a light shone on this subject, it is certainly something that I would have thought about. I am from a generation where the chances are the damage may already be done for my generation. It probably is, but what we do need to do now is protect the current generation and our children in the future.

This is not just about the professional game, this is across all levels. I will keep going back to it. There are simple things we can do that we need to do immediately that will help in the future. We have waited 20 years to get to this point, this meeting today. We cannot keep letting this slide and letting this go on when there are simple things that we can effect.

Q158 **Alex Davies-Jones:** You mentioned that you were not aware when you were a player. When did you become aware of the risks? What changed and what caused the awareness for you?

***Chris Sutton:*** I had to stop playing football because of a head injury. I am partially sighted in my right eye. I stopped playing when I was 34. I do not think the Aston Villa fans were too bothered that I stopped at that stage. But it was more because of the effect that it had on my dad, who was a former professional footballer. That is when it started to hit home. At first it was forgetting keys, forgetting names. He was brought up in Norfolk and he knew all the roads like the back of his hand. He got lost driving his car home one day and then things started to trigger.

It is just the nature of dementia and how it grabbed hold of him. There is not a cure for dementia so we need to get preventative measures in place so these things can stop happening in the future. We do not know what is going to happen in the next 20 years with the research, but why would we not just lessen the load with heading? I headed 72,000 balls; for children growing up, if you can reduce that by a sixth or an eighth, they are going to have far fewer blows to the head. It is not rocket science, this is common sense.

Q159 **Alex Davies-Jones:** Kyran, in your opinion, do you think that rugby players today are aware of the risks? Is this something that you think they know about?

***Kyran Bracken:*** I think they are more aware of the risks now with the HIA, head injury assessments, coming in but again you have to understand there is still that gladiatorial person inside that player.

Unfortunately there has never been living proof of what concussion can do to you. Now we have the living proof with the ex-players who really, really are struggling. I myself have been struggling since I retired. I had to approach the RPA because I was forgetting the codes to get into my house; I had lived there for four years. I sent money to people and have absolutely no recollection of doing it.

If these ex-players can sit down with the current players and say, "Okay, you are in gladiatorial mode but this is what could happen if you carry on playing. You might not be able to hold down a job, you might not be able

to drive properly, you might have an inability to converse with people and understand what is going on, forgetting words, forgetting people, forgetting names." When it hits home from ex-players, the current generation, in my view, will change their attitude.

The biggest problem is not just the players; it is above the players. The coaches are under pressure. The last thing you want to do as a coach is to lose your Johnny Wilkinson. Unfortunately that is the case. You are never going to get away from that but you need to take it away from their hands.

Above the players you have the unions and the World Rugby Union. It is scandalous that they can go from three weeks and the game becomes much more intense and it can go down to six days. It is not common sense. I feel you need to rattle the cage and you need to make changes because we are going to have a lot of young kids following what is happening on those pitches and we are going to have devastating early-onset dementia in the future.

By the way, for example, a very simple thing can be done. This is so simple. Why do we not make it law and limit the contact training, as Chris has said, limiting the training of these professional players? Josh Navidi said that he had four contact training sessions a day and a match at the weekend. Tom Curry, the flanker said, "I can't get out of bed some mornings, I am so sore." So we want to make it law that players of professional rugby only have a certain amount of contact in a year, just like they do in the NFL. But all that is going to happen is the RFU is going to drag its feet and it is going to take its time. All the evidence is there right now.

Q160 **Alex Davies-Jones:** In your experience as an ex-player, have things changed for the better since when you were paying until now? I know we still talk about the awareness and how things are currently, but have things improved from when you were playing?

***Kyran Bracken:*** In a professional game it has, because there are now independent medics on the pitch. If they can see on the video and video replay someone gets a hit, they come off. It is almost harder to cheat the system, I guess. As Monica and Eleanor were mentioning before, people can cheat the system and come back within seven days.

I do think it has got better but it there is so much further to go. I get really annoyed when I listen on the radio and I hear the football people talking about, "We need to look at rugby and see what they do." Rugby is miles behind the NFL and where it should be. It should be held to account. It needs to make changes now.

The other thing is I do not want to be like a cancel-culture type person. I do not want to remove the integrity of the sport and take away tackling and for all of us to play tag rugby. That is not what I want, but we can do very simple things to make it safer. That is all we can do. Two of my

eldest boys are in the Saracens Academy. If we can make it 1% safer in rugby, then we have done our job.

**Alex Davies-Jones:** Absolutely. Thank you, Chair, no more questions from me.

Q161 **Chair:** Dawn, you no doubt heard Chris's evidence before not just about Gordon Taylor but about football's attitude to the research around head trauma and its relationship to the sport. He described it as dismissive. Your father passed away 20 years ago. We have known that there was some connection since then, and possibly beforehand. Do you think football is dismissive about head trauma?

***Dawn Astle:*** Yes, I do. There were letters of concerns regarding players dying of dementia dismissed in the 1990s. Dr Mike Sadler, who is now clinical director at Southampton NHS Trust, who was a consultant in public health medicine at the time, raised the issue several times between 1993 and 1997 because he was concerned about noticing how many former players appeared to be developing premature neurological diseases. I know that Baroness Murphy warned the FA following the study about football and dementia in the medical journal that she was editing. She said that the FA were very short and refuted any such association could exist.

There is evidence through old newspaper articles, football magazines, football programme articles that football has always known that there was an issue with head injuries, whether through concussions, sub-concussions, heading a ball. Even 19 years ago there was the ruling at the coroner's court. The coroner said the ruling was an industrial disease and my dad had died because of his job. In any other industry an inquest finding like that would have had earthquake-like repercussions for that particular industry, but not football. My dad's death did not matter to them, it mattered to me. I believe that football's privileged status of self-governing is why. That is why I believe that the Government should take responsibility or have an overview of the dementia crisis in football, a Government group or a Government-appointed independent group, to look at brain injury in the sport, with someone else overseeing it.

For almost 20 years now football has failed to act and failed to protect its players—men, women, children, all at risk, potentially, with no restrictions, unprotected, uninformed. If the sport is left to its own devices as it is, it will just do what it wants to do. If there was a body overseeing the sport 20 years ago when my dad had died, it would have been saying to it, "You need to take these steps, you need to take these steps," and those steps would have been taken.

Q162 **Chair:** What do you think about the figure of £250,000, which is what Professor Willie Stewart said that his research had been given in terms of finances, and from that he had discovered what he had discovered in terms of the relationship between football and head trauma and concussion? Do you think that is in any way adequate?

***Dawn Astle:*** No. It is a drop in the ocean for the sport. It is nowhere near adequate. Football does not want to think that football can be a killer. I know it can be because it is on the bottom of my dad's death certificate, it is on the bottom of more footballers' death certificates now. It should be putting so much more money into it.

When Greg Dyke was chairman of the FA, when we started our campaign, when football was sweeping was my dad's death under a carpet, he apologised. Apologies are fine but we still did not get any answers. Why did it take them so long? It is two years in October since the field study was published, where we now know that footballers are three and a half times more likely to die of dementia. They are five times more likely to die of Alzheimer's than you and I. They are four times more likely to die of motor neurone disease than you and I. They are twice as likely to die of Parkinson's disease than you and I.

Why are there no restrictions now, like Chris has said, in heading? Why has it only just put out a call for further research? Should this not have been done immediately after the field results were made public? Why are they ignoring the advice of experts when it comes to temporary and permanent concussion substitutes? Where is the fund to help the former players? Where is the brain injury fund to help past players, present players, future players with treatments, rehabilitation costs, neurological support, full-time care costs?

This should not be the responsibility of the Government and it should not be the responsibility of British taxpayers to bail out football for its mishandling of the neurodegenerative disease crisis in the game. It is football's problem. Only people in your position as Members of Parliament have the power to hold football to account, because football will continue to kick the can down the road if it is enabled to. In the meantime players will keep being at risk and players continue to die.

Q163 **Chair:** Do you think it is a lack of compassion or do you think it is simply fear being sued?

***Dawn Astle:*** I think it is both. It is more money. It is terrified of the implications for the game.

**Chair:** Chris, you wanted to come in?

***Chris Sutton:*** Yes. To reiterate Dawn's point, make no mistake about this. The FA and the PFA really have only started to act because they have been embarrassed into acting because of campaigns, because of Dawn's work, John Stiles, because they have been exposed.

It is interesting the conversation about money. The last television deal for three years, Sky and BT were paying something like £4.4 billion, which the Premier League was getting. Why can there not be a fund set up from the Premier League, FA and the PFA to cover long-term care costs for professional footballers, people within the game, our ex-players? I do not

get it. It would be a tiny percentage of that amount of money. Football needs to take ownership of this. It is not doing so, which is where we need you to come in.

**Chair:** I understand. Another figure for you is that £250,000, which is Willie Stewart's entire budget for his research, is six weeks' salary for Gordon Taylor, the head of the PFA. That says an awful lot.

Q164 **Mrs Heather Wheeler:** Thank you very much indeed. Dawn, good to see you. Chris, thank you for your very emotive evidence that you are giving us today. I am quite conscious that we have not asked John any questions, so I am going to chuck a couple at you, John. Do not head them back; that would be appalling.

John, do you think, bearing in mind the experience that you have, that having limits on the number of games that players play in a year would be something that the authorities ought to look at? We have had a conversation already with Kyran about perhaps banning the number of impact training sessions during the playing season. John, do you have any thoughts on that?

***Professor Fairclough:*** There are two separate issues, the one we are looking at, the elite game, the international game, and the amateur game. There is no doubt, and we heard this from Professor Willie Stewart last week, that there is a dose-response situation, which is the more you impact your head, the greater the likelihood there is of damage. Therefore, we can stop the unnecessary trauma. Kyran alluded to it. If you are training, do you need to have contact? If we can reduce that, there will be a potential reduction in the deleterious impacts that the head injuries would have.

The difficulty we have and the reason we set up Progressive Rugby is that the information is quite diverse and difficult to get hold of. There are over 800 papers on concussion, just over 200 on sports-related concussion. I am sure your Committee has seen the widespread data that we have. What we did in Progressive Rugby is we started at the bottom upwards. We said we would look at specific things such as the amount of contact and we got a special group looking at that. It does appear that there is a direct relationship with the number of impacts. Therefore, we should be looking in the elite game and professional game at reducing those impacts.

When you look at the universities and schools, that is not as important in terms of number of training sessions because they do not train as often. But there are different factors that we have, which is do they need the contact, should they be tackling at school? They are different issues but they do need to be dealt with by a different view. It needs an overview of each individual area, be it schools, be it universities. Each individual area has its own problems.

**Mrs Heather Wheeler:** Thank you very much. I am going to finish now,

Chair, because I know we have other people to bring in. Dawn, Kyran and Chris, thank you for everything that you are doing on this. You have really shone a light on it today. I look back at my emails with Dawn and the family and we were talking about this in 2014. Thank goodness we are doing this today, but it has been too long.

Q165 **Kevin Brennan:** Like other members of the Committee, I am a huge rugby fan, rugby union and rugby league. Watching the Six Nations over the weekend, the so-called Super Saturday, which was an extraordinarily wonderful, exciting sporting occasion. Devastating, obviously, to people like me what happened in Paris, but nevertheless an extraordinary weekend. This is a game many of us have grown up with, played and love. How did you react to what you saw on the weekend, as an ex-player who played at the highest level with great distinction, watching the game and watching the impacts, watching the red card for Bundee Aki and watching what went on? What was your reaction to watching those games as an ex-player, knowing what you know now about the impact of the sport?

***Kyran Bracken:*** A great question. I thought it was an unbelievable weekend of rugby, and I am sorry for the result with Wales. But to lose it in the last minute, what a spectacle it was.

What I am struggling with, you are struggling with and everyone on the panel might be struggling with is when it comes to change, will that reduce the integrity of the game of rugby. Rugby does come with risks and at the weekend you saw the red card for Aki, but you have seen recently in the last World Cup quite a lot of red cards in relation to high tackles.

Also you are seeing, throughout the Six Nations and the World Cup, players who are knocked out, who are colliding with each other and professionals are going on and basically strapping them up, so to speak. You have some players who are refusing to come off. Unfortunately what you see there in international rugby, everyone is going to copy up and down the country.

At the same time I do not want to stop my kids playing rugby, and that is half your question, I just want to make it safer. That is my job as a guardian of the game and it is your job to see what is happening, what all the ex-players are talking about, the effect of so many head injuries and what it can be like in life after rugby. Trust me, there are horror stories. All of us felt very moved by Monica, and I felt moved as well myself. The stories I have heard from the players who I have spoken to about it, it would get to the depths of your soul to see what they are experiencing. The current players and the current hierarchy need to be educated to know how bad it can be.

Therefore, the request from us as ex-players is very simple. It is to extend the return to play so it is amenable, so they miss at least two games. Aussie Rules has just done that recently; they are now out for 12

days. The second thing we have talked about is making it law, limit the players and the contact in training, because that can have just as much of an effect as it does in matches.

Also let's not be scared of experimenting with things like having—let's say we go back to no subs coming on and it means all the 15 on the pitch now have to become fitter. They will reduce their weight, become fitter and last the whole match, like it was when I first started. That can be a good thing but that is not relevant for amateur rugby or university rugby, where you want subs coming on, you want these guys turning up, it is an inclusive sport. It is a very complex problem.

I would like to say as well that when you see these tackles in a game of rugby, you will see one guy being hit really hard and another guy going down. There could be two injuries. The guy who has made the tackle could have a brain injury, a bleed on the brain, and he could stand up and feel absolutely fine. The other person tackled could hit the deck, could hit his nose, break his jaw, break his eye, stitches across the face and have absolutely no brain injury. That is why it is a silent killer of this sport. You cannot tell unless you have a scan there and then, and I think we have to be safe.

Q166 **Kevin Brennan:** Very briefly, finally, have World Rugby and people like the RFU, the WRU and so on had an open door to you in Progressive Rugby?

***Kyran Bracken:*** All I have seen is a letter back from Bill Beaumont saying that they take player welfare very seriously. That is all I have had. Dan Scarbrough has recently spoken out—as a schoolteacher I played alongside him—and he is really struggling. I spoke to him last week. Again the words are the same, "We take player welfare seriously and we will look into it", but we cannot see any change.

**Chair:** That concludes our second panel. I want to thank Dawn, Chris, John and Kyran for your evidence today. We are going to take a short adjournment and then we will return with our third panel.

*Sitting suspended.*

*On resuming—*

## Examination of witnesses

Witnesses: Dr Charlotte Cowie, Dr Éanna Falvey, Professor Mike Loosemore and Bill Sweeney.

Q167 **Chair:** This is the Digital, Culture, Media and Sport Select Committee and this is our hearing into concussion in sport. This is our third and final

panel of the day. We are joined by Dr Charlotte Cowie, Chief Medical Officer at the Football Association, Professor Mike Loosemore, Chief Medical Officer, TeamGB boxing and snow sports, Dr Éanna Falvey, the Chief Medical Officer at World Rugby, and Bill Sweeney, the Chief Executive Officer at the Rugby Football Union. Charlotte, Mike, Éanna and Bill, thank you very much for joining us this morning.

**Damian Hinds:** May I start with Dr Falvey and Mr Sweeney? We heard earlier from Kyran Bracken about the different levels of concern about dealing with concussion in rugby and what the protocols are, how far those protocols are implemented and the culture questions that go with that, and finally the wider questions about how the game is played. The general narrative out there is that sports like rugby are slow-moving in dealing with concussion and resistant to change. How do you respond?

***Bill Sweeney:*** Perhaps I could take that initially and then pass it over to Dr Falvey. The issue of concussion is of great concern and is central to a lot of the work that we do. The head injury assessment protocols were initiated back in 2012. There was some evidence at the weekend in the England-Ireland match where the England captain was involved in quite a tough tackle and there was contact to the head observed. There was an independent medical observer watching that, and it is videoed from the sidelines. He was very reluctant to go off but under the head injury assessment protocols the decision as to whether or not you stay on the field of play is taken entirely out of the player's hands and the referee insisted he left the field to undergo the 12-minute head injury assessment protocol. At the end of that game he was subsequently found to be clear. He passed his head injury assessment.

The most important aspect there, I believe, is that in international rugby and also in community rugby the decision to stay on the field of play is not lying within the players' hands. I would like to pass it over to Dr Falvey as well, who has some more detail in terms of how that protocol works.

***Dr Falvey:*** Thank you, Bill, and thank you for inviting me here today. I would like to expand on that. This is a great opportunity to explain somewhat around the process. Listening to Kyran's testimony this morning has been extremely moving and it is fantastic for the sport that we have people who have excelled at the elite level coming forward and speaking and informing those who are playing the game right now about what they are expecting.

From my perspective, having worked as a team doctor in this sport before and after the onset of the head injury assessment and a graduated return to play, this was a significant process. Back prior to these events, the team doctor was often alone in terms of trying to explain the significance of this issue and dealing with it, but the head injury assessment gave us time to make an assessment off the pitch under controlled circumstances and to arrive at the correct diagnosis.

It is very important to clarify what that graduated return to play is, because this is an important addition to the head injury assessment process. The graduated return to play is not six days; it is a six-stage process that can only be commenced when the player is already asymptomatic and has been well. We saw from this morning's testimonies, which were harrowing, that in both those situations neither of the athletes had been symptom free when they went back into activity, which put them at risk down the line. We need to ensure that that is in place before the graduated return to play commences. We have data to show that two-thirds of players miss at least one game and many more miss two. Our process is around ensuring that that return to play is as safe as it possibly can be.

Finally on that point, it is important to outline that there has been significant change and progress in this area. As I said, rugby was the first field sport in the world to introduce an off-field assessment for concussion. Secondly, the process has evolved over time. We have added and subtracted the different subtests of the protocol to make it more specific so that the sensitivity of the test and specificity would be similar to using an MRI scan for the diagnosis of a shoulder injury—something as specific as that.

One other point would be that the process has evolved and we have developed a database based on our head injury assessment protocol, which allowed us to look at the risk factors for injury, which identified the tackler. As Kyran said, in any collision, there are two parties in that collision. That has led to what we saw before the last World Cup, which was the introduction of the high-tackle sanction framework. The high-tackle sanction framework was introduced at the World Cup and we saw a significant drop in the concussion rates during the World Cup.

In the Six Nations that has just gone by, we have seen the most recent iteration of that. We engaged with stakeholders, including referees, players and coaches, to improve the process and that became the head contact process that we saw in place during the Six Nations. Prevention is the most important way of securing the health of our players now and in the future. As Chris said a while ago, we need to prevent and that is our primary focus.

Q168 **Damian Hinds:** The title of this inquiry is concussion in sport, but of course we are also concerned about subconcussive injuries and we are concerned with the elite level of sport but also with all levels of sport, down to community and grassroots.

We had the NFL settlement some years ago. There is the 2018 Boston University study. A lot more is known about these matters now than was in the past. What is rugby doing about that, at all levels of the game, not just in competitive matches but in reducing contact training time as well?

***Dr Falvey:*** I might take that and then hand over to Bill with regard to measures around contact limitation in the game.

From our perspective, the idea of a subconcussive blow is a vexatious one. There is no agreed definition of what a subconcussive blow is, what is the level that defines a subconcussive blow and what level is required for that to be present. Unfortunately, a lot of the information around this area is driven on conjecture rather than on any kind of study.

Q169 **Damian Hinds:** Hang on, it might be difficult to define a precise point on a scale but you are not saying there is any query about the existence of it?

***Dr Falvey:*** No, but a subconcussive blow is an event where you bang your head. What we need to know are which ones are significant and to what extent they occur in the game. We have not had the technology to look at that to date but we now do. We have instrumented mouthguard technology that is now available to us. Using that, in addition to video of games and play, is a way for us to identify what it looks like across the game, not just at the elite level, which is already being done by a number of professional teams, but at the community level, both men and women, and underage levels. We are just about to undertake a huge-scale study in New Zealand across the community game looking at all levels of the sport, using instrumented mouthguard technology to measure exactly what the head impact events are, what exactly the level of impact is and to be able to compare that to other day-to-day activities and other sports, which allows us to know where rugby sits in terms of the risk. The important thing about that is that that technology is newly available. Two years ago the technology around instrumented mouthguards would not have been accurate enough to allow us to do that properly. It is now available so we are embracing the technology as soon as it is available.

Secondly, we want parents and players to be able to make an informed decision. Like Chris said, if he had known when he was doing his heading in the game, he would have made potentially different decisions. We want people to be able to make informed decisions around this based on evidence. As a scientist I always look to the evidence. I am trying to supply that in this situation.

Q170 **Damian Hinds:** I can understand you wanting to take more measurements and gather more evidence, but would you not normally do that in parallel with taking protective measures? It is not like there is no evidence that repeated banging of the head at subconcussive level harms people.

***Dr Falvey:*** No, and we are taking that. Prevention is where this is all starts. We started with prevention and we have been working on prevention for some time. For example, if I hand over to Bill he will be able to tell you what is being done in the game in the UK around prevention. Bill, would you like to talk on that?

***Bill Sweeney:*** Yes, there are a number of things there. You touched on the concept of player load and there were some very specific guidelines passed out before the 2019 World Cup in terms of the optimal player load

for players taking part in that and we saw some reductions there. But if you look at the elite playing squad, the England playing squad in a year, we now have maximum limits in place in terms of how many matches can be played in a year and how many full game equivalents, ie how many minutes are played by that player.

If you look at the shift from 2016 to 2019, there were 13 players in 2016 who played over 30 matches. In 2019 there was only one. In the Premiership itself, the number of players who have played over 30 matches was down to 1% last year, which is five players. The number of matches they play for their club has decreased from 11 down to 8.5 due to larger playing squads and rotations of players. So there is an awareness and a desire to measure and limit the amount of load a player can take over the course of a season.

The point you make about contact and load in training is a very valid one and it is something we are looking at currently. We are introducing next year a microchipped mouthguard into the Premiership for testing. We can apply that in the area of training as well to monitor that load that the player goes through, because you need to look at the consolidated load across competitive matches but also with the training aspect as well.

Q171 **Damian Hinds:** Below the elite level of the sport, what can you say about what is being done, what is being encouraged and what is being monitored in what is happening in community and grassroots rugby?

***Bill Sweeney:*** There is a tremendous amount happening and it goes all the way back to 2002 and the introduction of the professional rugby injury surveillance programme, but it did not just stop at professional. It was extended to schools in 2006 and extended to the community game in 2007.

There has been a high degree of awareness of the topic of concussion for a very long time now. When I stopped playing the game, which was a very long time ago, I was conscious of concussion even at that stage there. We introduced an initiative called HEADCASE in 2013, which has a dual objective. First it is to raise the awareness of concussion in the sport. Secondly, it is an e-learning tool for coaches and parents and volunteers to understand how to recognise and how to treat concussion and deal with it. That led to the four Rs, which is recognise, remove from play, recover and return. Éanna has talked about the protocols and the return to play protocols there.

To give you a sense of the prevalence of that, we have 25,000 coaches across the country. To be qualified as a level-one coach, you have to take HEADCASE—

**Chair:** We are going to take a short suspension to observe a moment's silence in memory of those who were lost to Covid-19.

*One minute's silence was observed.*

**Chair:** Our next question will come from Kevin Brennan.

***Bill Sweeney:*** Do you want me to finish off on that last point?

**Chair:** We are going to go to Kevin Brennan, but thank you, Bill.

Q172 **Kevin Brennan:** Bill, you were stopped mid-sentence, so if there was something further you felt you needed to say, I will let you say it and then ask a question a two.

***Bill Sweeney:*** Just very quickly, every year we have about 5,000 uptakes of HEADCASE for coach's qualification. We also have 15,000 uplifts of the HEADCASE programme by volunteers and parents in the community game. We are very fortunate in rugby in that the grassroots community game is comprised of a group of a very knowledgeable and very passionate people. When you go to a community club, it is the parents who are running it, it is the volunteers who are running it and they are very conscious about player welfare and making sure that player welfare is central to all that they do.

Q173 **Kevin Brennan:** We heard from Kyran Bracken, who played with great distinction for many years for the England national team. He did not seem to me to be very impressed with the RFU and other rugby unions and World Rugby in relation to the way that they engage with campaign groups like Progressive Rugby. Have you met them and had discussions with them, and how seriously do you engage with them?

***Bill Sweeney:*** The first thing I would say is that we welcome groups like this. We listened to Kyran speak. He has played at the highest level of the game, he coaches at St Albans and he has a very valid point of view. Our interest is to make the game as safe as it can possibly be. My job is to grow participation in rugby and support the game and you cannot do that if there is an issue like concussion there that is causing concern. We are very open to engaging with various different groups.

Q174 **Kevin Brennan:** Have you met them as a group?

***Bill Sweeney:*** I have spoken to three ex-England international players from Progressive Rugby. I do not know if it is necessary to name who they were but they contacted me after the letter had been sent in to World Rugby and asked for my point of view. I said I thought it was very progressive, very productive and very positive in terms of what they were saying. There were 15 proposals in there and most of them are either in process or being developed within next developments.

Q175 **Kevin Brennan:** Do you have any plans for a more formal meeting with them as an organisation?

***Bill Sweeney:*** I do not have any plans in place at the moment, as in a date and time, but that does not mean to say we would not do it.

**Kevin Brennan:** What happened there? Sorry, Bill, did you finish your answer?

***Bill Sweeney:*** Yes, I said that we do not have a specific date and time in the diary as yet but there is no reluctance to do so.

Q176 **Kevin Brennan:** Despite all of the positive measures that you have outlined that have been taken in rugby, do you think there is still, off the record and when people are not speaking in public, a cultural problem in the game of not accepting the necessity of some of the changes that have been made? What did you make of the French coach's comments on the weekend, after the Wales-France game, that he felt that the number of red cards that had been awarded in the Six Nations in games involving Wales this year had come about because Wales were milking these incidents in order to get players sent off? Is that the sort of culture we need and are you quite shocked at those sorts of comments when we are talking about a subject of this seriousness?

***Bill Sweeney:*** I cannot specifically comment on the French but I can assure you that there is not a negative culture as far as that is concerned. We have interactions with World Rugby's referees group and we are very keen that head impact protocols and the use of red cards are enforced.

Q177 **Kevin Brennan:** Do you feel that the red cards that have been enforced, a lot of them because of contact to the head and so on during the Six Nations this year, have all been justified?

***Bill Sweeney:*** I think so. There is not one that sticks in my mind. There was some controversy over the Fagerson one but I think the referees have applied the laws and have focused on minimising any possible head contact very effectively. There have been occasions before, the famous Sam Warburton tip tackle in 2011 against the French, where you very rarely now see a tip tackle where the player has landed on the ground on their head or neck. It happens but it is more of an outlier these days. It is because the players adapt and they know that they are going to be punished if they do so. Contact mid-air now is incredibly well policed. You occasionally see it when the timing is not carried out effectively. I think law changes for the benefit of the game and for the safety of players should be enforced and should be carried out.

Q178 **Kevin Brennan:** Thank you, Bill. Charlotte Cowie, can I ask you a question on the football side of things? When we had our session last week—I do not know if you managed to see or read the evidence that we took last week—Professor Willie Stewart, who is a world expert on this subject, was very, very, very critical of football and its slowness to adapt its procedures on this subject in relation to concussion in football, and in particular when we discussed temporary concussion substitutes. I am going to paraphrase slightly and put words in his mouth, but he basically said football is so arrogant and the football authorities are so arrogant that they will not take lessons from any other sport even where

procedures have been put in place successfully to try to reduce concussive injuries and so on. What is your reaction to that?

***Dr Cowie:*** In terms of where we are with our concussion substitutes, it is not something that I would recognise as characterising the discussions that we have had relating to concussion substitutes. We have an independently chaired research taskforce, on which Willie Stewart sits, including a number of people who specialise not just in concussion but who advise us with regards to dementia and with regard to epidemiology. Their recommendation from the back of the field study—which we took very seriously and, as we said earlier, which we funded—was that we should look to improve concussion pitch-side. We have had concussion guidelines in place since 2015 and they are mandated in the Premier League. In terms of a concussion substitute, that was a strong direction that we got from them.

We cannot unilaterally, obviously, change the rules of the games. The representatives that we have on IFAB—IFAB is the world body that sets the rules of the game—represented strongly to have a concussion substitute put in place.

Q179 **Kevin Brennan:** The UK has a very powerful position on that organisation, does it not, because of the origins of the game in the UK? The Football Association of Wales, the Football Association, the Scottish Football Association, the Irish and so on represent about half of that body, do they not? So is that not just an excuse? The UK is in an incredibly powerful position to influence the world game in this direction. Is that not correct?

***Dr Cowie:*** It is and that is why, when they discussed it, it went through. It set a protocol in December for a concussion substitute and we have rolled that out in the middle of the season in the Premier League and in the WSL and the FA Cup. I know that Willie does not agree with the permanent concussion substitute and I know that Chris is in that position as well. It is not that we have not consulted or had discussions both with people who are outside the sport, but when you are trying to implement something in a sport, you do have to also consult with people who are working in the sport.

The thing I would strongly like to get across is that the discussion on the permanent concussion substitute largely came from a discussion between doctors who work in the game and have a lot of experience working pitch-side in football. They felt it probably was not right simply to cut and paste what is working in another sport and put it into our sport and assume that that would work.

Q180 **Kevin Brennan:** In your opinion, is the permanent substitution protocol that is going to be introduced into football better for player welfare than a temporary concussion substitution protocol, similar to what happens in rugby, as we have just been talking about that? Do you think it is better for player welfare?

***Dr Cowie:*** The overwhelming view of the doctors who work in football was that that is would work best as our model in this sport. That does not mean that we will not assess that. This is a pilot. It is going for 18 months and we are collecting data as we go along.

Q181 **Kevin Brennan:** In fairness, that was not the question I asked. What I am asking is you have settled on this option and I am trying to understand what the reason was for settling on this option rather than the other option. What I want to understand is was player welfare the defining factor in taking that decision and, if so, can you explain why it was decided that, from the point of view of player welfare, this was a better option?

***Dr Cowie:*** From our point of view, if you take a player off and there is a possibility that they could be concussed what we are saying is, "If in doubt sit them out." That is the mantra that extends across all of these guidelines for concussion, whether you are in the professional game or the amateur game.

What we do know is that concussion symptoms might develop immediately. They might develop after 10 minutes, 20 minutes or they can develop after a couple of hours or after 24 hours and, overall, our view is that, if you take somebody off when there is a possibility that they could be concussed, there is always then a possibility, if you have a short assessment and then consider putting them back on again, that you may put somebody on again who is concussed but you haven't yet—

Q182 **Kevin Brennan:** Therefore, in your view, rugby has this completely wrong and is putting player welfare in danger by having a temporary substitution protocol. Is that fair?

***Dr Cowie:*** No, I don't think that. I think what everybody is trying to do is do the best that they can in terms of concussion substitute, and in our game we feel that that is the right step to take. The other—

Q183 **Kevin Brennan:** What is it about concussion in football and football players that is different from concussion in rugby that leads you to that conclusion?

***Dr Cowie:*** There is still the same message in terms of removing a concussed player or possibly concussed player, but if I could just say also that the IFAB specification was that this has to be something that can be rolled out throughout the whole of the game, including the grassroots game. Therefore, you have to have something that can be rolled out across the whole of football and, clearly, a temporary substitution with an assessment is only something that can be rolled out in a situation where you have medical staff who are able to deliver that head injury—

Q184 **Kevin Brennan:** This ideology in football that the game must be identical, whether it is played in a World Cup final or on a park pitch, is the reason why you have chosen to go down this particular route—because you could not otherwise guarantee you would have medical

people available in the park's pitch. That is basically what you have just said, isn't it?

***Dr Cowie:*** There is more than one reason why, after much discussion, we have decided that this would be the best option and that was something that IFAB took again to a number of independent experts who it discussed that with. IFAB had a separate advisory group that it brought back in again to discuss which would be the best solution and they also agreed that in our game this would be the best option.

**Kevin Brennan:** All right. I have taken a lot of time. I am going to pass back to the Chair. Thank you.

Q185 **Giles Watling:** I would like to put something to the two doctors and the professor on this panel because, apart from anything else, Mike Loosemore has not said anything just yet and I look forward to hearing from him. None of the organisations have said that there is anything inherently too dangerous in the sports as they are. However, the BMJ—the *British Medical Journal*—called for a ban on tackling and scrummaging in youth rugby and of course we know about the potential ban on football. I would just like to ask you, as medical people, can you say with your hand on your hearts that, given the evidence that we and others have collected, you are doing enough to push for changes to the rules to protect both professionals and amateurs? Charlotte, I will start with you.

***Dr Cowie:*** In terms of the rules, the two areas that our independent research taskforce have advised us to take, the decreasing in the exposure to heading is the first step. We are obviously putting guidelines in place for youth heading now.

To Chris's point about the number of headers, somebody in that youth group would now only head the ball a maximum of 10 times in a training session. That would be only once a week, so they are the most stringent heading guidelines that exist in a governing body in football in the world at the moment.

We are moving to heading guidelines in the professional game. That is contingent on a couple of things. One is a survey that we are doing at the moment to just understand how implementable and how effective those youth guidelines are with coaches at the moment. Also, a piece of information that we are looking for—speaking again towards Éanna's reference to the instrumented mouthguards—is to try to understand types of header as well, in that if you take 20 headers, for instance, if one of those is a small, short header from a short distance and one of those is a header from a long punted ball those forces might be quite different. It might be 10 but equivalent to 20 shorter ones, so we want a little bit more detail on that before we rule within the professional game but we fully intend to do that and also in the adults' grassroots games.

Q186 **Giles Watling:** I take your point absolutely about details. What I am really asking is: are we moving fast enough given the evidence we have already collected? I would like to move on to Professor Loosemore, if I

may.

***Professor Loosemore:*** Thank you, Giles. It is great to be here. Thank you very much for inviting me, and it has been good to hear from everybody. Dawn Astle and Chris Sutton were brilliant as ever.

What I would like to talk about is exactly what you have said: are we doing the right thing by banning tackling in youth rugby? The question in all these things is the attribution: what is the part of the sport that is causing the concussion? What is the part of the sport that is causing long-term brain damage? There has been talk about these instrumented mouthguards and that is one of the things that I am working on very closely. This is extremely exciting for the advancement of looking at head injury in sport, as not only do the instrumented mouthguards tell you how quickly the head has moved, in what direction the head has moved but by which force the head has moved.

We have now teamed up with a group at Penn State University who are world leading in brain modelling and with the information that we can get, which over even the last year has become incredibly sophisticated from these mouthguards, together with the brain modelling we can now look specifically at what part of the brain is being strained. That has given us some really interesting insights and the more work we do, and the more accurate this gets—because we are using artificial intelligence and machine learning—we will be able to tell in real time what part of the brain is being strained. What part of the brain is actually getting damaged with different aspects of the sport.

That is really key because it may be that heading is causing the problem in football. It may be the collisions with the ground, when people hit the ground. It may be when they get elbowed in the head. We do not really know and if we had this sort of information, with the brain modelling and the mouthguards, we would have that answer.

It is the same in rugby. They looked at changing the height of the tackle and they found that changing the height of the tackle in some circumstances gives you more concussions, in a study that was recently published in the BJSM. With the modelling, once we get sophisticated enough—we are not quite there yet—we could actually model rule changes and tell you what change that would make on your health. That is the sort of level that this can be at.

This is the future. This is going to tell us all the answers that Dawn wants to know and Kyran wants to know and Chris Sutton wants to know. This will give us all that.

Q187 **Giles Watling:** Right, I take that point. It means that you can then finesse exactly what sort of rules you need to change and how you need to change them to make it work. I understand that but Chris made the point very forcefully that we should have started this 10 years ago. Are we going far and fast enough? Éanna, do you have any comments on

that?

***Dr Falvey:*** Yes, thank you, and just to clarify, I wonder if the article you were speaking to by Dr Pollock and her colleagues is in fact an editorial in the BJSM, rather than a call from the journal itself about banning the tackle, clarifying that point.

Prevention is my number one priority. I am employed by World Rugby to commission science, to review it and to act upon it, and I do so on a daily basis and I will continue to do so. As far as I am concerned, my job is to make the sport an open door for anyone who can help us to push in, be it retired players, people like Progressive Rugby—anybody who has the interests of the game at heart. We will embrace what they can bring to the challenge. We have met with these groups already. I have spoken to Progressive Rugby. I have spoken to the love of the sport and, as I have outlined in some of my earlier answers, we have a lot of work ongoing around prevention and we recognise that we will need to continue to do that and that we need to continue to improve it.

I understand the frustrations of some groups where they feel the pace of this is not quite what it should be, but anyone who is involved with science knows that good science takes some time. It takes time to do it properly and we need to ensure that any science that is implemented does not have unintended consequences. That is not an excuse for acting on the information that we have, which we are doing and we will continue to do.

I think the involvement of a Committee such as this is fantastic for the sport. It gives this issue—and, indeed, the work that I and my colleagues around the world in rugby are doing our best to look after it—some impetus and it gives it some importance, and I would like to applaud the Committee for getting this to work. We would like to continue to work with the Committee and improve this area as much as possible.

Q188 **Giles Watling:** Thank you very much, Éanna. I would like to move on to Bill Sweeney, if I may. When it comes to changing the rules what are the biggest obstacles? What do you have to overcome?

***Bill Sweeney:*** I would not say there are major obstacles. We have probably had the best example recently—or not recently. We went to World Rugby and we wanted to have a change to the laws of the game in terms of how we implement the protocols from under-sevens through to under-18s, and we were able to do that. We work very closely together.

The way World Rugby is constructed, it is constructed on a number of sub-committees and committees on which we and the other unions have representation. As Éanna has said, we are continually looking to evolve as the science evolves, and if an element of that involves law change we will work with the relevant committees in World Rugby. We will make proposals. We will request them and we will have that discussion and debate and, more often than not, they are taken seriously.

Q189 **Giles Watling:** Do you think you get pushback from sports people on this—I mean rules that might restrict their ability to participate? Nobody wants to stop rugby. If you wanted to stop road accidents you would ban cars, so nobody wants to ban or stop but we want to refine so that we make the risks, first, known about and then coped with in a sensible and educated way. Do you think you are going to get pushback from the sports people?

***Bill Sweeney:*** When you say "sports people", sorry, who do you mean by sports people?

**Giles Watling:** The people who want to get involved, the participants.

***Bill Sweeney:*** No, I don't think so. As Éanna has said, we want to engage on this as much as we possibly can. Rugby is a physical contact sport and we know that. That is at the core of the game and the Progressive Rugby body also mentioned it. It wants to preserve the core physicality of the game. Éanna's job and my job is to represent the game and to make sure we are delivering the as safe as possible version of the game, given the fact you have physical contact. I do not think that will put participants off. I think they will look at it and see that we are engaged. They will see that we are transparent and they will see that we are working in the best interests to make sure the game prospers and continues to grow as new evidence and new learnings come through science and medical research.

***Dr Falvey:*** Perhaps I might echo just one of Bill's points there and to bring in what Chris mentioned earlier on. I think what I have seen in this role, having worked with teams and now working with World Rugby, is that players have a far greater understanding of what is involved now and, as their understanding increases, the caution that they exert and the actions that they undertake are different. We have seen the attitudes of the players' associations, of the people who are involved who represent players in the game, we have seen those attitudes change dramatically over the last few years with regard to safety measures implemented, which might affect how the game is played but which are ultimately for the benefit of players.

Our job has to be to continue that education piece and I would support Kyran's points about getting retired players to speak to the groups. We already do elements around this. We have a player welfare symposium at the end of the month. One of the small benefits of Covid is that we have now taken this entirely online, which means we can make this available to people who are out training with their teams and so on. Our job is to continue to bring that information out there. We make it available. This symposium is available to the public, so I would invite anyone on the Committee who is interested to tune in. They are welcome to attend. This is part of what we intend to push forward.

**Giles Watling:** Thank you. Thank you for coming. Thank you, Chair. Back to you.

Q190 **Chair:** While we have been questioning today some very sad news has come through that Frank Worthington, the brilliant Leicester and England forward, has sadly passed away after a long illness. He suffered from Alzheimer's. Dr Cowie, is heading the ball 72,000 times in a career safe, yes or no?

***Dr Cowie:*** I do not know that you can put a number on it. We have concerns and we wish to decrease the exposure that players have to heading. That has to be the direction that we go in. We have been advised that that should happen. As Professor Loosemore has already said, we do not know if there is a number what that would be and what is safe or not. That is not an excuse for not doing anything about it. We have to decrease the amount of heading that players are exposed to and that is where those heading guidelines come in. We have to also push for more information. We cannot leave it at that and say, "We don't know so we won't take it any further." That is why our call for research is out at the moment to look for a project that will give us more answers in terms of what the field study findings were. Is it about concussion? Is it about heading or more about—

Q191 **Chair:** You can always just look at Jeff Astle's death certificate, frankly. That is what would tell you that this is an industrial disease and he was famous for heading the ball. We have had the evidence from Chris Sutton earlier that he headed the ball, he reckons, 72,000 times during his career. Are you really telling me, as a doctor who has taken the Hippocratic oath, that that is safe? That that is doing no harm?

***Dr Cowie:*** No, I am not saying that. This is a really difficult subject. It is for me to try to look at what there is in terms of science, to try to make the changes that we need to do, but I do need to take advice and listen to what other people have to say. The recommendation that we have had from our research taskforce—and that is an independent group—is that we should reduce the amount of heading that there is in the game, so from that point of view I think we all agree on that.

There is no argument about decreasing the amount of exposure to heading within the game. The main exposure to heading is in training, from what we can see from video evidence and from people with experience, and so limiting that training, in terms of the number, possibly the type of heading as well, is definitely the direction that we need to go in. I don't have any dispute with that at all.

Q192 **Chair:** The direction we need to go in evidence, blah, blah, blah, it seems to be all just—

***Dr Cowie:*** It already has with of the youth game but, yes, of course, I do not want to be the person to say, "We have done enough. We can't do anymore." Of course we can.

Q193 **Chair:** No, we have to say it would be absolutely farcical if you did, so we won't go down that particular road.

Why is it that UK researchers into head trauma related to concussive sporting injuries have to rely on American money in order to fund their research?

***Dr Cowie:*** Are you referring to Dr Willie Stewart's evidence?

**Chair:** Yes. Dr Willie Stewart got £250,000 from football.

***Dr Cowie:*** Just to say that we did not put any financial limit on our call for research at all. We—

Q194 **Chair:** You haven't put any financial limit? Sorry?

***Dr Cowie:*** No. We put out a call for research with a specific research question and that was to understand whether dementia was more common in former professional footballers than in the normal population. Again, we had an expert panel to assess that call for research and we picked the research project that was unanimously regarded as the most effective research project in fulfilling that research question.

Q195 **Chair:** With respect, Dr Cowie, I know that this is a difficult one in many respects for yourselves because we know the FA very well here on this Committee, I can tell you. I can understand that often you feel as if you are ploughing through a field of custard backwards. I do get that. It is a very difficult ask, but my question is very simple: why is it that the leading British researchers in this country—and this can also be asked of rugby, frankly—have to rely on the NFL to fund their research? Why isn't football, which has a £4.4 billion TV deal at the top of the game, paying to do the research, and I mean proper research on a scale that we have seen in the United States? Why not?

***Dr Cowie:*** I can only speak for the research project that we put in place to answer our research question. The amount of money that Dr Stewart got from that was the amount that he asked for. We did not barter him down or anything like that. That was the cost of the study that was done and we fully accepted paying for that—

Q196 **Chair:** Correction: so, if he comes back and asks for £2.5 million, you will give him £2.5 million?

***Dr Cowie:*** Well, we have a current call for research out at the moment that is to look for the further delineation of the field study finding. We will go to our independent research taskforce and we will ask them to choose which is the most effective one in fulfilling that question. If it turns out that is an enormous amount of money but they feel that it is worth it in terms of getting the answer, we will go wherever we need to. Obviously, FA is a not-for-profit organisation, but there is money in football and we will go not just to English football but also outside it because it is a global game. It is not as though—

Q197 **Chair:** Frankly, considering it has taken 20 years to have done a study and to recognise the issue, I really do not think we have any time to wait for the global game in order to pitch in. As an organisation, how much

have you budgeted for research in the last year? How much precisely?

***Dr Cowie:*** I do not know what our research budget is, but I think we have definitely made a commitment that we will go for the research project that is the most effective.

Q198 **Chair:** You are the chief medical officer. How don't you know the research budget? How don't you know your research budget? You come in front of the Committee—

***Dr Cowie:*** I know the research budget. I know how much is written for this year for research.

Q199 **Chair:** Is it because you don't want to say? Is it because you don't want to say what the research budget is because I cannot believe that someone as eminent as yourself, someone obviously at the top of their tree so to speak, does not know how much the FA spends on this research in the year. I am almost speechless. Are you telling the truth?

***Dr Cowie:*** I know how much is committed for the funds that we are already paying, so we are continuing to fund the field study. We are continuing to fund another study at Nottingham University in the form of—

Q200 **Chair:** How much? How much are you spending? How much?

***Dr Cowie:*** We are spending exactly what we contracted with those people to spend. They asked for the money and we gave them the money. It is not that we have said, "No, we can't afford anything more than that," and, as I say, if we put this call for research out and the funds required are more, it is completely up to us to fund that, however big it is, and to seek the money for funding from within football. As things stand—

Q201 **Chair:** Excuse me, normally when we have witnesses who frankly should know a particular figure and we often suspect, frankly, that they know that figure but they are too embarrassed to say what that figure is—YouTube is a pretty good recent example of that—what we do is we let them off the hook and we say, "Will you write to us as a Committee?"

I will just put on record that I am staggered, and I think this Committee is staggered, that you have not come here today furnished with the information of how much you have spent on research in the last year. I think it is completely unacceptable. I am not blaming you as a person. I am sure you have a very great deal to deal with at the FA—I mean most people do, frankly—but the situation is that you are in front of a parliamentary Committee.

We have just been listening to people today, young athletes who talk about their continence, who talk about the fact that they are fearful for the future and they are worried that they are going to die as a result of their sport, and you are seriously telling this Committee that you do not know how much the FA spent on research into this topic in the last year.

That is not actually a question. That is just a statement, frankly, and I am absolutely appalled. So, yes, we will give you the 'off the hook' go and write to us, and everything else like that, and we will publish the letter precisely, but I do not believe that. I just think you are too embarrassed and I cannot blame you because I think I would be embarrassed.

***Dr Cowie:*** I am sorry, can I just say that in our current call for research there genuinely is no funding limit that we have set on this. We simply want it to be the study that answers our research question. I can genuinely put my hand on my heart and say we have agreed that there is not an amount of money that we will set for this. We just want to understand what is the best study for us to fund and we will take external advice from that and we will try, if we need to get money from the—

Q202 **Chair:** Thank you for that. I do appreciate that. I appreciate your good intentions. I do, genuinely. I don't wish to be unpleasant in that respect but I will give you the external opinion. You are going to have to spend a lot more. That is the external opinion.

Now, Mr Sweeney, can the RFU survive if they face NFL style litigation action? I am not asking you to respond in terms of individual cases but are you concerned for the future financial wellbeing of the game?

***Bill Sweeney:*** I am not sure if I am allowed to answer that one, am I, because of the ongoing legal case?

Q203 **Chair:** I am not mentioning a specific case. This is about the financial wherewithal that the game has in order to deal with such matters.

***Bill Sweeney:*** I am afraid I do not think I can answer that, though, because you are asking a question that is directly related to that legal case.

Q204 **Chair:** Well, no, not directly related to that legal issue, related to what may be legal cases in the future. Is it something that you concern yourself about? The idea that the game itself may change, may become financially unviable if this—not so much those particular cases but let's just say that down the line litigation actually takes place, can rugby survive this, basically?

***Bill Sweeney:*** Again, in relation to the specific case, I don't think I can answer that but I would say that, if we are talking about research and our ongoing investment into research, I would say that would continue and that we are looking to have the science evolving all the time and we are looking to make sure that the game is as safe as we can possibly make it.

Q205 **Chair:** Thank you. Professor Loosemore, you heard the evidence in the first session, yes?

***Professor Loosemore:*** Absolutely.

Q206 **Chair:** Why wasn't Eleanor's helmet replaced?

***Professor Loosemore:*** I don't know. That is a fairly standard thing that you would do if somebody has cracked a helmet, because the helmet becomes less effective once it has been cracked.

Q207 **Chair:** Is that it? Is that the entire responsibility, though? Is that a guidance? Are people told this?

***Professor Loosemore:*** I don't know whether that is specifically the guidance within skeleton, but certainly in most other sports once you get your helmet cracked then you would replace it.

Q208 **Chair:** Yes, I knew that, but you are chief medical officer for snow sports, aren't you?

***Professor Loosemore:*** I am.

Q209 **Chair:** Is skeleton bob a snow sport?

***Professor Loosemore:*** No.

Q210 **Chair:** Right, okay. That is the reason why I don't know. In terms of things like, for example, free style skiing, is that something that you would have your helmet replaced for?

***Professor Loosemore:*** Yes. Certainly, if you crashed and damaged your helmet, we would certainly expect you to replace your helmet.

Q211 **Chair:** Right. You are expected to replace your helmet. Do you replace the helmet? Are they told to? Are you basically told, "You can't go out there again unless you replace your helmet?"

***Professor Loosemore:*** That isn't a specific rule at the moment, no.

Q212 **Chair:** It is entirely down to the discretion of the individual athlete, yes?

***Professor Loosemore:*** That is correct. It is not part of the rule.

Q213 **Chair:** Should it be part of the rule?

***Professor Loosemore:*** Yes. It probably should be, yes.

**Chair:** Probably, okay.

***Professor Loosemore:*** Well, yes, it should.

Q214 **Chair:** Did you think of this before or is this something that you have just come across on the Select Committee? Why isn't it part of the rule?

***Professor Loosemore:*** It isn't part of the rule because it hasn't happened frequently enough for it to be within our consciousness to be part of the rule, but it is something that we would expect people to do. Maybe if you put it as a rule that would have more impact.

Q215 **Chair:** There doesn't seem to be a great deal of direction around what you perceive as protocol and what needs to happen and what should happen. Am I fair in saying that? It seems to me that you are almost

making it up as you go along to a certain extent.

***Professor Loosemore:*** I think snow sports has done a lot recently to improve the protocols around head injury. It has not been seen within the sport as a major problem, surprisingly, until recently. Certainly, recently, these things have become more to the fore and rules have increased around them. Things could definitely be improved from that point of view.

Q216 **Chair:** My final question, I know I have taken up quite a lot of the time: to a certain extent, listening to the evidence of you and also Dr Cowie earlier, is it a fair impression to say that you are not well resourced? That, effectively, it is a bit of a "We have to do this. Make it look as it should do and we will read that report when it comes in"? Snow sports and boxing—obviously boxing, which is obviously an entirely different matter—do you feel central to that?

***Professor Loosemore:*** I feel central to that in as far as changing rules and producing rules to protect the participants within the sports. We are always trying to make this sport safer and we are constantly trying to change the rules to do that. The important thing is to change the rules effectively so that you do not have unforeseen consequences of changing rules that make the sport more dangerous by mistake.

Q217 **Chair:** One of the reasons why I asked you that is because your title is boxing and snow sports.

***Professor Loosemore:*** Yes.

Q218 **Chair:** A bit like chessboxing. Why is it that you are doing two jobs? Is it because basically they cannot afford one for each sport?

***Professor Loosemore:*** They probably cannot afford one for each sport. Rugby and football are very different but in the sort of Olympic realm where I work there are hardly any—I cannot think of any—full-time chief medical officers. They are all very part-time jobs. For the boxing I get paid for half a day a week.

Q219 **Chair:** Right. To be chief medical officer of Team GB boxing you are paid for half a day?

***Professor Loosemore:*** Yes. That is because the sport does not have the finance to manage paying more than that.

Q220 **Chair:** What would be a better model more generally, do you think? You will have a lot of colleagues who are in different sports who may be double, triple jobbing, I do not know. What would be a better model, do you think in that respect?

***Professor Loosemore:*** It would be lovely to be in the position of being the CMO of one sport. The reality of that is that that is just unaffordable at the moment, particularly for some of the smaller, poorer sports.

**Chair:** Thank you. Heather Wheeler.

**Mrs Heather Wheeler:** Thank you, Chair. I am like you. I am almost lost for words with this panel and I do not think we should be in that position. A comment would be: we have had all the science, we have all this history, we have a death certificate from 20 years ago and we are now doing another survey after another survey because you do not want to change anything because of unforeseen consequences. Somebody somewhere needs to jump the shark here. Maybe make that your life's work, Charlotte, if I may call you that, forgive me. I do not know that I could do your job, love, I really don't. I am lost for words.

**Chair:** Is there a question, Heather? It is okay if not. We can always come back.

**Mrs Heather Wheeler:** No, I do not think I have a question.

**Chair:** That is fine. Julie Elliott.

Q221 **Julie Elliott:** I have to say that I share Heather's sentiments here. I am just agog listening to all of this. I have never heard such a defensive panel. We do not need another project, another study, another survey to tell us that there is a problem and that people are dying and becoming seriously ill because of head injuries in sport. That is clear. We have even got a death certificate—we heard in the last session—on which it was classed as an industrial injury.

In the workplace, when anything becomes apparent, things are stopped while the measures are decided as to what will make that workplace safe again. Somehow in sport we seem to be operating under different rules. Dr Cowie, you said earlier that you were not asked to fund projects. Apparently, we have heard that you were asked to help fund the SCORES project but you didn't help. What do you have to say about that?

***Dr Cowie:*** The issue with funding of research in this area is that it—

Q222 **Julie Elliott:** Were you asked to fund the SCORES project and did you not help?

***Dr Cowie:*** No.

Q223 **Julie Elliott:** You were not?

***Dr Cowie:*** No. The FA was not asked to fund the SCORES project. Michael Grey from the SCORES project did get in touch and, as with a lot of studies in this area, one of the big problems is not necessarily access to funds but it is access to former professional footballers and that is a very small or limited pool of subjects. We have tried really hard. We included the SCORES study, along with the two other studies that are going on at the moment in the UK in this area on former professional footballers, in a piece of publicity that we ran in January to try to increase participation.

The studies that are ongoing at the moment, having gained the funding, their biggest struggle is to get sufficient numbers of players because it is important that all of these studies are statistically significant. That was

the real value and the real power of Willie Stewart's field study. It was a really high quality study that gave us reliable information that we now know is something that we have to act on if we are—

Q224 **Julie Elliott:** I am just going to interrupt you there because I understand from Dr Grey that you were asked to help fund this study. I am sure Dr Grey will provide written evidence to this Committee and then we will see where we are.

You have also said, I understand, that youths head the ball 10 times in a once-a-week session. Is that right?

***Dr Cowie:*** Yes.

Q225 **Julie Elliott:** If we know hitting the ball with the head causes life changing illnesses and sometimes death, is it not sensible to stop that all together in training? We do not need another survey. Do you think it is safe to do that?

***Dr Cowie:*** There seems to be agreement among the experts that we have spoken to that it is—

Q226 **Julie Elliott:** No, I am asking you, as a doctor, do you think that is safe?

***Dr Cowie:*** It is important, if you are going to head the ball in a match—

Q227 **Julie Elliott:** Do you think it is safe?

***Dr Cowie:*** I cannot tell you what level is safe. I can only tell you that if we decrease the number from whatever it is above 10—it is important if you are going to encounter heading the ball in a match to prepare for that.

Q228 **Julie Elliott:** You are saying you cannot say how many times hitting the ball is safe, so you cannot tell me that it is safe, can you?

***Dr Cowie:*** We can say that we need to reduce the number and if people were previously doing more than that and now doing less that has to be less of a risk.

**Julie Elliott:** Lessening the risk is not what we want to do. We want to stop the known risk, particularly with young people where their heads are still developing, they are still forming, and you are sitting there saying, "We want to reduce the risk." You cannot tell me that what you are suggesting is safe.

***Dr Cowie:*** We—

Q229 **Julie Elliott:** I want to move on to Professor Mike Loosemore. You have said some things about instrumented mouthguards, about studying how a head moves, how it is hurt. Is there any disagreement before that study starts that head injuries happen? That all that the mouthguards studies are going to show is how it happens or have I misunderstood that?

***Professor Loosemore:*** I don't think you have misunderstood it but the point of—

Q230 **Julie Elliott:** I have not misunderstood that, so we know that head injuries are happening and all that we are doing by the instrumented mouthguards' study is that we are finding out how it happens, not that it does happen?

***Professor Loosemore:*** It is really important to know how it happens because if you know how it happens you can mitigate against the particular way it happens.

Q231 **Julie Elliott:** Do we not know that someone hitting their head, whether it is in football, rugby, boxing, whatever sport it is, it doesn't really matter, somebody hitting their head, is dangerous, is causing injuries?

***Professor Loosemore:*** It doesn't cause injuries all the time.

Q232 **Julie Elliott:** We are letting children hit heads in sport and, as a doctor, you think it is acceptable, because it does not cause injury all of the time, to allow children and young people to do that?

***Professor Loosemore:*** I think that sport has many, many things that are great about it and I think it is worth the risk of getting a head injury in sport for all the massive benefits that you get from it, yes.

Q233 **Julie Elliott:** You have a connection with boxing. Do you think it is correct to let children box? We heard in a previous session that the chief executive from Headway thinks boxing should be banned. Do you think it is an acceptable thing for children to box, to potentially get head injuries and that they can give informed consent to do that?

***Professor Loosemore:*** Like all sports that involve contact, children are involved in those sports. I think in boxing children do get head contact through sparring and competition in boxing, and this is acceptable because it is—

Q234 **Julie Elliott:** You think it is acceptable when that might cause a brain injury?

***Professor Loosemore:*** The overall risk of the sport and the good things that the sport does and the great things that it brings, not only to the individuals and to their families and to society, outweighs the very small risk of getting a head injury.

Q235 **Julie Elliott:** You think there is a very small risk of getting a head injury in boxing?

***Professor Loosemore:*** I do think there is a small risk of getting a head injury in amateur boxing, yes.

Q236 **Julie Elliott:** My goodness, I am astonished.

Bill, nice to see you again. Can I ask, will you commit to meeting with Progressive Rugby before the summer?

***Bill Sweeney:*** Will I commit to a meeting?

**Julie Elliott:** Yes.

***Bill Sweeney:*** Yes, absolutely.

Q237 **Julie Elliott:** Thank you. Can I ask about international things that have been done? We know in America in American football that there were lots of changes made within a 12-month period to try to mitigate some of the problems, American football being one of the more similar sports to rugby I would have said, a comparable sport anyway. Do you think that the RFU and the other rugby associations should act now and then look at the evidence and see how the game moves forward? Do you think they should be putting things in place now and then look to see what can be reintroduced or reintroduced differently as more evidence emerges and more studies are done?

***Bill Sweeney:*** That is exactly what we are doing and I know the NFL is an obvious comparison but there are some major differences between the sports—the wearing of helmets for a start—but I am not here to talk about other sports. If I just focus on rugby. We are continuing to look at further research. We have research recently started, the brain study, which is a two-year study looking at 146 players over the age of 50. We have just also finished a thing called a microRNA test, which detects concussion and the severity of concussion through biomarkers in saliva. That then allows you to monitor and measure pitch side much more accurately and quickly.

In response to the question, that is exactly what we are doing. You see law changes to the game on a regular basis when an area—

Q238 **Julie Elliott:** Finally, because we are almost out of time, Progressive Rugby and Kyran in the last session talked about some of the things that they would like to see straightaway that would make a difference. Can I ask whether you would be prepared to look at doing that for the next season, implementing those changes?

***Professor Loosemore:*** Absolutely. I said in the earlier part there are 15 proposals in there. An awful lot of them are already in process and we were—

Q239 **Julie Elliott:** There were three particularly that Kyran talked about. Can I ask that you commit to looking at those and perhaps coming back to the Committee with your views on them?

***Professor Loosemore:*** I think one of them was substitutes and that is already under consideration. Another one was player load and game time. We have already implemented certain measures on that in terms of putting limits on game time for players, but we are prepared to look at load on players in training not just in competition. Law changes, I think, was the other one that he mentioned, and you have seen that in the Six Nations this year: the greater emphasis on avoiding head contact and the

issuing of red cards. That is in direct response to some of the things that Kyran was saying.

I do believe that we are doing things in parallel to commissioning and working with other unions around the world and working with World Rugby to understand how the science is evolving, how we can keep up to speed with that, so I think we are actually doing what you are suggesting.

**Julie Elliott:** Thank you.

Q240 **Chair:** Dr Cowie, you just had your hand up.

***Dr Cowie:*** Yes, I am aware we are running out of time. One of the things that did come up in the earlier Select Committee meeting, one of the things I would hope would be we would be really enthusiastic coming to this, is what the Government can do to help us. There is a whole area of concussion management that sits across all of our national governing bodies and through into the NHS and into education as well. I would just like to bring up the idea, as in Scotland, that was suggested that there are concussion guidelines that overarch sport that would help those small sports to be able to manage concussion better and if there is a message of "in doubt sit it out" that we can get across more widely than our national governing bodies. That is something that is really important. I just wanted to try to get that in there before we finish. I am happy to answer anything else but I just wanted to make sure that we did not leave that point.

Q241 **Chair:** Thank you, Dr Cowie. That is very interesting. A final question, just to return to rugby, to Bill and Éanna. How much do you spend on research each year?

***Bill Sweeney:*** I will pass on to Éanna in a second in terms of World Rugby and obviously we dovetail together on certain things. On the various different rugby injury surveillance programmes that we run, which started in 2002, we spend about £350,000 a year on those. They have tended to lead on the monitoring, the assessment of the numbers of concussions across different aspects of the game. As I said, we started that in 2002. I just made reference to a number of studies, one being the microRNA study. One is the brain study and there is another one that is about imaging, so that is in the millions. I don't have the exact figure to hand. It is not in tens of millions but it is in the millions.

Q242 **Chair:** Thank you. Would you be able to write to the Committee?

***Bill Sweeney:*** Yes.

**Chair:** We really do appreciate you have at least one figure straight to hand. World Rugby?

***Dr Falvey:*** Yes, this is an area in which we have been investing heavily since the onset of the head injury assessment. That has been and will continue to be a research project. We employ scientists to analyse—

Q243 **Chair:** How much?

***Dr Falvey:*** The figure is about £5.5 million in the last 10 years.

Q244 **Chair:** Is that backloaded? Is it more recent?

***Dr Falvey:*** It is increasing as time goes on. If you were to look at player welfare in general that has been over £10 million in the last 10 years.

Q245 **Chair:** Player welfare includes lots of different things but £5.5 million—

***Dr Falvey:*** Yes, but we discussed many of those today so things like load, things like injury management, all those things tie into how well we manage concussion as well.

**Chair:** Great. Thank you for your evidence today and thank you to Bill Sweeney, Professor Mike Loosemore and Dr Charlotte Cowie. Thank you very much. That concludes our session.