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Debate on a motion on football and dementia

1 Sport-related neurodegenerative disease

1.1 What is neurodegenerative disease?

Neurodegenerative diseases (also known as degenerative nerve diseases) are conditions that damage and destroy nerve cells, especially in the brain.[1] Nerve cells (neurons) are not normally replaced or repaired by the body, which means that these conditions progressively worsen over time and cannot be cured.[2]

There are several different types of neurodegenerative diseases.[3]

- Dementia-type diseases like Alzheimer's disease and chronic traumatic encephalopathy, which is associated with repetitive head impacts, involve progressive damage to the brain. These conditions can cause a wide range of symptoms, including memory loss.[4] [5]
- Demyelinating diseases like multiple sclerosis involve the loss of myelin, the protective layer that surrounds nerve cells, affecting the messages they send to different parts of the body.[6]
- Parkinsonism-type diseases like Parkinson's disease occur when the parts of the brain that manage coordination and muscle movements are damaged.[7]
- Motor neurone disease (MND) affect the parts of the brain and nervous system that are responsible for muscle control, leading to progressive weakness and causing problems with movement, swallowing and breathing.[8]

1 EU Joint Programme – Neurodegenerative Disease Research (JPND), What is neurodegenerative disease? No date, accessed 7 September 2023
2 As above
3 Cleveland Clinic, Neurodegenerative Diseases, 10 May 2023
4 NHS, What is dementia? 20 July 2023
5 NHS, Chronic traumatic encephalopathy, 29 December 2022
6 WebMD, What Are Demyelinating Diseases? 6 September 2022
7 NHS, Overview Parkinson's disease, 3 November 2022
8 NHS, Motor neurone disease, 18 January 2021

1.2 Evidence on football and neurodegenerative disease

Multiple research studies have recently examined a potential link between playing contact sports and the development of neurodegenerative diseases, including dementia, later in life.

In this briefing, references to 'football' mean soccer.

The FIELD study

The FIELD study was jointly commissioned by the Football Association and Professional Footballers' Association to study the development of neurodegenerative conditions amongst retired footballers. The study compared health outcomes for former Scottish professional soccer players with the general population.[9]

In 2021, the results of the study were published in the journal JAMA Neurology. Over a follow up period of 18 years, the footballers were more than three-and-a-half times more likely to be diagnosed with a neurodegenerative condition.[10] The risk higher for players with longer careers. It was also higher for defenders and lower for goalkeepers, which may reflect differences in how often players in different positions are likely to head the ball.

The FOCUS study

This study examined the development of cognitive impairment and neurodegenerative diseases amongst former professional UK footballers. It also assessed potential risk factors associated with the development of these conditions, including the frequency of heading the ball.

The first set of study findings, published in June 2023, found that former professional footballers were almost three-and-a-half times more likely to report that they had been diagnosed with a neurodegenerative disease, compared with the general population.[11]

The second set of study findings, published in July 2023, found that footballers who recalled that they had frequently headed the ball during matches and

9 Glasgow Brain injury Research Group, Field Study Aims, no date, accessed 7 September 2023

10 Emma R Russell and others, Association of Field Position and Career Length With Risk of Neurodegenerative Disease in Male Former Professional Soccer Players, JAMA Neurology, Vol 78, No 9, 2 August 2021

11 Tara-Mei Povall Macnab and others, Cognitive Impairment and Self-Reported Dementia in UK Retired Professional Soccer Players: A Cross Sectional Comparative Study, Sports Medicine, 8 June 2023

training were more likely to be affected by cognitive impairment.[12] Concussion involving memory loss was also associated with an increased risk of cognitive impairment.

Other research studies

In 2023, a group of Swedish researchers published the results of a similar study of male footballers who had played in the Swedish top division. This study found that the footballers were one-and-a-half times more likely to be diagnosed with a neurodegenerative condition, compared to the general population.[13] In this study, dementia was more common amongst footballers, there were no significant differences in rates of MND, and Parkinson's disease was less common amongst footballers.[14]

Other studies have reported similar findings. A systematic review of published research studies examining the risk of neurodegenerative and neurocognitive disorders in athletes (including footballers) found that the risk of MND, dementia and Parkinson's disease was higher in former soccer players compared to the general population.[15]

However, some other research studies have found no statistically significant increased risk of neurodegenerative disease related to participation in contact sports.[16]

Charities focused on neurodegenerative diseases have drawn attention to the need for further research to improve understanding of the effects of participating in sports like football, and the development of these conditions.

Alzheimer's UK (a charity supporting dementia research) released a position statement on sport and dementia in December 2022.[17] It stated:

> Alzheimer's Research UK collaborated with the Health Policy Partnership (HPP) in 2022 to undertake a landscape review in the field to understand the current evidence base, as part of a project to identify research gaps in the area of sport as it relates to brain health and dementia risk reduction. This is an area where the research evidence is still emerging, and where data is incomplete or relies on self-reporting. This means that current findings are not always clear cut and can be open to a range of interpretations. While further research is

12 Shima Espahbodi and others, Heading Frequency and Risk of Cognitive Impairment in Retired Male Professional Soccer Players, JAMA Network Open, Vol 6 No 7, 17 July 2023

13 Peter Ueda and others, Neurodegenerative disease among male elite football (soccer) players in Sweden: a cohort study, The Lancet Public Health, Vol 8, No 4, 16 March 2023

14 As above

15 G Bellomo and others, A systematic review on the risk of neurodegenerative diseases and neurocognitive disorders in professional and varsity athletes, Neurological Sciences, Vol 43, 17 August 2022

16 MA Monsour and others, Is contact sport participation associated with chronic traumatic encephalopathy or neurodegenerative decline? A systematic review and meta-analysis, Journal of Neurological Sciences, 13 February 2023

17 Alzheimer's Research UK, Sport and dementia position statement, December 2022

> clearly needed, it is important that where there is evidence of risk, this is used constructively in relevant sports to minimise risk.[18]

The Motor Neurone Disease Association (a charity focused on improving care and research on MND) echoed these comments in a statement on MND and sport (PDF) from May 2023:

> While the studies carried out to date show a correlation between professional footballers and MND they don't demonstrate causation – so they recognise that professional footballers are more likely to develop MND but they don't suggest that playing football professionally, or any particular aspect of doing that, directly leads to a person developing MND. At present there is not yet enough evidence to pinpoint whether specific aspects of contact sport participation, such as heading the ball in football, are directly linked to an increased incidence of neurodegenerative disease…
>
> While there is a growing movement within sport to understand, recognise and, where necessary, mitigate against negative long-term effects, it is also clear that a lot more research is needed. We recognise this and are working with researchers and institutions to facilitate MND research.[19]

1.3 Ongoing research in the UK

The HEADING study

This study is examining links between a history of concussion, heading the ball and neurodegenerative disease amongst former male professional soccer players in England.[20]

The results of the study so far have been used to develop a model that can be used to measure footballers' exposure to repetitive sub-concussive head impacts (RHSIs).[21] The results of the researchers' investigation into the links between heading the ball and the development of a neurodegenerative disease are not yet published.

The SCORES project

This research study is investigating the rate of cognitive decline in former professional footballers, compared with average healthy individuals.[22] This project is still recruiting participants.

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18 Alzheimer's Research UK, Sport and dementia position statement, December 2022

19 Motor Neurone Disease Association, MND and sport, May 2023

20 London School of Hygiene and Tropical Medicine, HEADING study – About, no date, accessed 8 September 2023

21 Ioannis Basinas and others, Exposure assessment for repeated sub-concussive head impacts in soccer: The HEalth and Ageing Data IN the Game of football (HEADING) study, International Journal of Hygiene and Environmental Health, Vol 253, August 2023

22 Scores Project, About the project, no date, accessed 8 September 2023

2 Reducing the risk of dementia in football

2.1 Guidance from the English and Scottish Football Associations

The English Football Association (FA) and Scottish FA have taken steps in response to the emerging evidence of the potential increased risks of dementia, especially in relation to the risks involved in heading the ball.

In England, the FA introduced new guidance to apply across all levels of the professional and amateur game for heading ahead of the 2021-2022 football season. The guidance focused on reducing the number of higher force headers. For professional and amateur players, the guidance recommends a maximum number of 10 higher force headers per training week.[23]

The Scottish FA introduced its new adult game heading guidance in November 2022.[24] This guidance states that training exercises that involve repeated heading should be limited to once a week and should not take place on the day before or after a match. It also requires football clubs to plan and monitor heading activity with the aim of reducing the amount of heading overall.[25]

For younger players, the English FA recommends that heading is not introduced in training sessions for under-11s and is a low priority activity for training for all under-18s.[26] For under-12s, heading should be limited to one training session, and a maximum of five headers, each month. For under-13s, it should be limited to one session and a maximum of five headers each week. For older players, the maximum number of headers is increased to 10.[27]

The Scottish FA recommends no heading practice for primary school aged children, and a gradual introduction of heading in secondary school aged children.[28] The specific guidance for children of different ages is in line with that of the English FA.

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23 The FA, Adult amateur heading guidance, August 2021; The FA, Professional Football Heading in Training Guidance,July 2021.

24 Scottish FA, Scottish FA introduces new adult game heading guidance, 28 November 2022

25 Scottish FA, Scottish FA Heading Guidance: Adult Football (18+) (PDF), November 2022

26 The FA, Youth Heading Guidance, 18 July 2021

27 As above

28 Scottish FA, Scottish FA Heading Guidelines – Children's and youth football, no date, accessed 7 September 2023

2.2 Trial banning headers from under-12 matches

In July 2022, the English FA was granted approval from the International Football Association Board (IFAB) (the body that sets the rules for association football) to trial the removal of deliberate heading from matches for under-12s.[29] The English FA reported on the results of this trial at the 137th Annual General Meeting of the IFAB (PDF) held on 23 March 2023, but no decision has yet been taken about any permanent change to the rules.[30]

[29] The FA, The FA to trial the removal of heading in U12 matches and below in 2022-23 season, 18 July 2022

[30] IFAB, 137th Annual General Meeting of The International Football Association Board, Decisions, 23 March 2023

3 Industrial Injuries Advisory Council advice

The Industrial Injuries Advisory Council (IIAC) is an independent advisory body sponsored by the Department for Work and Pensions.[31] The IIAC makes recommendations in relation to the diseases for which Industrial Injuries Disablement Benefit can be paid.

In 2005, the IIAC considered a range of sporting injuries, including the risk of dementia in footballers. It concluded at the time that "current scientific evidence is insufficient to establish a causal link between dementia and heading footballs".[32] The Council reached a similar conclusion about neurodegenerative disease in professional sportspersons in an information note published in 2016.[33]

The IIAC is currently undertaking a new investigation into neurodegenerative brain disease in ex-footballers and in other contact sports.[34]

31 Industrial Injuries Advisory Council, About us, no date, accessed 7 September 2023
32 Industrial Injuries Advisory Council, Sporting injuries: IIAC position paper 15, 10 November 2005
33 Industrial Injuries Advisory Council, Neurodegenerative diseases in professional sportspersons,
34 Industrial Injuries Advisory Council, IIAC annual report: 2021-2022, 15 December 2022

4 Parliamentary material

4.1 Debates

UK Concussion Guidelines for Grassroots Sport

02 May 2023 | House of Commons | 732 cc22-9

UK Concussion Guidelines for Grass-roots Sport

03 May 2023 | House of Lords | 829 cc1582-7

Motor Neurone Disease

20 Oct 2022 | House of Commons | 720 cc922-940

Dementia Research in the UK

10 Feb 2022 | House of Commons | 708 cc1153-1185

Concussion in Sport

11 Mar 2021 | House of Commons | 690 cc1113-1121

4.2 PQs

Football: Injuries

Asked by: Blackford, Ian | **Party:** Scottish National Party

To ask the Secretary of State for Work and Pensions, what assessment he has made of implications for his policies of the second set of findings from the FOCUS study commissioned by the Football Association and the Professional Footballers' Association and undertaken by University of Nottingham, published on 17 July 2023.

Answering member: Tom Pursglove | **Party:** Conservative Party | **Department:** Department for Work and Pensions

The department is advised by the Industrial Injuries Advisory Council (IIAC), an independent scientific body, on changes to the list of occupational diseases for which Industrial Injuries Disablement Benefit (IIDB) can be paid.

IIAC is carefully considering any connection between neurodegenerative diseases and the possible effects of repeated head injuries or blows to the head sustained during a career as a professional sportsperson. The Council has begun exploring the scientific literature covering various neurodegenerative diseases, which may include chronic traumatic encephalopathy and dementia. IIAC will publish its findings when the investigation is complete.

It would be premature to speculate on how the Council's investigation will progress or whether there is enough evidence of a link between neurodegenerative diseases and professional sportspeople to meet the threshold for a new 'prescribed disease' to be recommended by IIAC for the purpose of IIDB entitlement.

A disease can only be recommended for prescription by IIAC if:

a) the risk to workers in a certain occupation is substantially greater than the risk to the general population, and

b) the link between the disease and the occupation can be established or presumed with reasonable certainty.

If recommendations are made by IIAC on this matter, they will be carefully considered by the department.

07 Sep 2023 | Written questions | Answered | House of Commons | 195201

Sports: Health Hazards

Asked by: Baroness Merron | **Party:** Labour Party

To ask His Majesty's Government what support they are providing for research into the potential long-term health impacts, including an increased risk of dementia, of contact sport.

Answering member: Lord Markham | **Party:** Conservative Party | **Department:** Department of Health and Social Care

The Department of Health and Social Care commissions research through the National Institute for Health and Care Research (NIHR). The NIHR is supporting research on the long-term effects of sport on brain health through the NIHR MedTech Co-operative. This includes a study on the detection of prodromal dementia symptoms in former professional footballers. The NIHR is also contributing to a £9.5 million research call to establish a United Kingdom Traumatic Brain Injury (TBI) platform. The platform will support new research on the health impacts of TBI and concussion occurring through different

contexts including sport. Additionally, the NIHR is supporting research into a potential link between concussion and dementia through the PROTECT study.

The NIHR welcomes funding applications for research into any aspect of human health, including the potential health impacts of contact sport. The Department for Culture, Media and Sport has established a new Concussion in Sport Research Forum led by the Medical Research Council and UK Research and Innovation. The aim of this group is to bring together key academic experts with experience of traumatic brain injury, concussion and related areas to identify priority research questions for the sporting sector.

The Government remains committed to working with sports stakeholders to build on the positive work that is already taking place to mitigate the causes and effects of concussion in sport.

27 Mar 2023 | Written questions | Answered | House of Lords | HL6577

Football: Concussion

Asked by: De Cordova, Marsha | **Party:** Labour Party

To ask the Secretary of State for Digital, Culture, Media and Sport, if she will hold discussions with the International Football Association Board on the potential merits of introducing temporary concussion substitution protocols.

Answering member: Stuart Andrew | **Party:** Conservative Party | **Department:** Department for Digital, Culture, Media and Sport

The laws of the game of football are a matter for The International Football Association Board (IFAB), as the independent body authorised to decide and agree changes to such laws within the sport. It is for the IFAB to consider the potential merits of introducing new laws for discussion in conjunction with The Football Association and other members of the IFAB as appropriate.

The safety and wellbeing of everyone taking part in sport is absolutely paramount and the Government expects sports to do all they can to protect their players. Our Command Paper on Concussion in Sport published in December 2021 outlines the steps the Government is taking to help reduce risks associated with head injuries by improving understanding, awareness, prevention and treatment of concussion in sport.

05 Dec 2022 | Written questions | Answered | House of Commons | 96646

Football: Chronic Traumatic Encephalopathy

Asked by: Shelbrooke, Alec | **Party:** Conservative Party

To ask the Secretary of State for Digital, Culture, Media and Sport, whether her Department has had discussions with representatives of the Professional Football Association on the support and care required by former footballers affected by Chronic Traumatic Encephalopathy.

Answering member: Nigel Huddleston | **Party:** Conservative Party | **Department:** Department for Digital, Culture, Media and Sport

My Department has discussed a range of issues with the Professional Footballers Association (PFA), including around instances of concussion and brain injury within football.

On 10 December 2021 we published our report on Concussion in Sport. It outlines the steps the government will be taking to help reduce risks associated with head injuries by improving understanding, awareness, prevention and treatment of concussion in sport.

We are now working to develop a single set of shared protocols across the UK on concussion, and convening a new sports concussion research forum to identify the research questions that need answering in this important area.

On 14 March 2022, the Department for Health and Social Care launched a Call for Evidence to inform the development of the government's Acquired Brain Injury Strategy. More information on the Call for Evidence can be found here.

The Government remains committed to working with sports stakeholders, including the PFA, to build on the positive work on concussion and brain injury that is already taking place to mitigate the causes and effects of concussion in sport.

21 Mar 2022 | Written questions | Answered | House of Commons | 140425

Football: Children

Asked by: Lord Taylor of Warwick | **Party:** Non-affiliated

To ask Her Majesty's Government what plans they have to work with the Football Association to ban children under the age of 18 from heading footballs during training, in order to mitigate the possible associated risk of developing brain disease in later life.

Answering member: Baroness Barran | **Party:** Conservative Party | **Department:** Department for Digital, Culture, Media and Sport

Guidance on training and coaching for grassroots sport is a matter for the sport's National Governing Body. However, we are encouraged to see the Football Associations of England, Scotland and Northern Ireland putting children's health and wellbeing at the heart of their provision.

It is important that all schools and sports clubs follow guidance on age-appropriate sport participation, and have appropriate measures in place to protect young people from harm, including serious injuries such as concussion.

09 Mar 2020 | Written questions | Answered | House of Lords | HL1805

4.3 House of Commons Digital, Culture, Media and Sport Committee

2021/2022 Inquiry on Concussion in Sport

HC 46 2021/2022

5 News items

BBC, 6 September 2023

Dementia in football: Brain health fund launched by PFA & Premier League - BBC Sport

Telegraph, 6 September 2023,

Premier League and PFA launch landmark £1m fund for footballers with dementia

BBC News, 9 June 2023

Dementia in football: Ex-players over three times more likely to be diagnosed, study finds - BBC Sport

Independent, 9 June 2023

FA and PFA study finds increased dementia risk in ex-footballers

The Herald, 9 June 2023

FA and PFA study finds increased dementia risk in ex-footballers

BBC News, 17 March 2023

Dementia risk higher for outfield players than goalkeepers - study

Lancet Public Health, 16 March 2023

Neurodegenerative disease among male elite football (soccer) players in Sweden: a cohort study

Guardian, 16 March 2023

Footballers 50% more likely to develop dementia, study finds

Herald 26 April 2022

Professor Willie Stewart says football dementia risk 'phenomenal'

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