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A survey of chartered physiotherapists' knowledge and current clinical practice regarding concussion in sport.

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A survey of chartered physiotherapists' knowledge and current clinical practice regarding concussion in sport

Abstract

Background: There is currently much discussion in the sports medicine literature and mainstream media regarding diagnosing and managing concussion and the appropriate criteria to guide return-to-play decisions. In amateur sport, the chartered physiotherapist is often the primary healthcare professional present at sporting events. At present, there is no research to guide management of the concussed player by physiotherapists, which negatively impacts the consensus of concussion management.

Objective: To identify current knowledge and clinical practice patterns (assessment and management) regarding concussion in sport among Irish chartered physiotherapists.

Methods: Members of Chartered Physiotherapists in Sports and Exercise Medicine with active email addresses (n=370) were invited to participate in an online cross-sectional survey consisting of four sections: demographics; knowledge; assessment; and, management of concussion.

Results: A 26% (n=95) response rate was achieved. Of the participants, 35.8% (n=34) were aware of the current Concussion in Sport consensus statement. The mean score for knowledge about concussion was 61.6% ($\sigma=11.1\%$) and mean score for management of concussion was 81.2% ($\sigma=13.0\%$). There was no correlation between years of experience and knowledge scores ($p=0.45$) or management scores ($p=0.86$). Similarly, years of sports physiotherapy experience did not correlate with knowledge scores ($p=0.91$) or management scores ($p=0.82$).

Conclusion: Respondents have a high level of knowledge regarding the assessment and management of concussion. It is important that sporting bodies regularly update their guidelines and that chartered physiotherapists look for future Concussion in Sport consensus statements as research in concussion continues to evolve.

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Introduction

In recent years, concussion has become a focus of sports medicine literature and sporting organisations due to its adverse effect on brain function and the potential long-term complications of injury.^{1,2} Concussion is a complex pathophysiological process induced by traumatic biomechanical forces.³

The incidence of concussion in sports, especially collision sports, is well documented.^{4,5} The last decade has witnessed the production of a number of national and international consensus statements and guidelines.^{3,6} Since 2001, the Concussion in Sport (CIS) Group has led the way in creating an internationally recognised consensus statement for the assessment and management of sport-related concussion.^{3,6-8} Other sporting organisations have

subscribed to the CIS consensus statements, or have made modifications to the recommendations to suit a particular sport.^{3,8-13} These modifications have led to a difference of opinion among organisations, clinicians and researchers. The clinical implementation of any consensus statement is important. If an athlete is concussed, these guidelines determine if he/she needs to be removed from play to prevent further injury and provide the management protocol for a safe return to play.¹⁴ One study demonstrated that two-thirds of athletic trainers (ATs) (n=336) working in the USA were unfamiliar with the current CIS statement.¹⁵ The proposed reason for this was poor dissemination of the statement in AT educational programmes. It is clear that even with the recent

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focus on concussion in sport, the dissemination and implementation of current consensus statements is not reaching all relevant groups. To date, there has been no study about the knowledge and management of the concussed athlete by physiotherapists. As such, the impact of consensus statements in this group of professionals is unknown. The aim of this study is to determine the extent of Irish chartered physiotherapists' current knowledge and clinical practice patterns (assessment and management) regarding concussion in sport.

Methodology

Study design

A cross-sectional survey, distributed online, was conducted using a self-administered original questionnaire.

Subjects

Members of the Chartered Physiotherapists in Sports and Exercise Medicine (CPSEM), a clinical interest group of the Irish Society of Chartered Physiotherapists (ISCP), were surveyed, as they are involved in the frontline management of players.

Research instrument

An original questionnaire (see **Appendix**) was created, as an established tool could not be found in the published literature. Guidelines from international medical and sporting organisations were reviewed with the 2008 Consensus Statement on Concussion in Sport used as the gold standard.³ There were four sections in the survey: demographic information; knowledge of concussion; assessment of concussion; and, management of concussion.

In the knowledge section, scores were calculated and compared with each respondent's years of experience. Identification of a correct answer (agree or strongly agree) scored one point and incorrect answers or 'I don't know's' scored zero, yielding a potential maximum score of 19 and a minimum of zero. In the management section, five questions were used to assess management of concussion, giving a maximum score of 10 and a minimum of zero. Respondents were asked to rank a list of signs and symptoms of concussion from most common to least common (1=most common, 12=least common). Signs and symptoms not related to concussion were included in the list to identify respondents' ability to distinguish unrelated signs and symptoms from those associated with concussion.

The survey was anonymous and the participants could not be identified at any stage of the process. During the study, all electronic data were stored securely, password-protected on the RCSI server and on a password-protected computer. After the project, all data were stored in a locked filing cabinet in the office of the project supervisor, Louise Keating, in the School of Physiotherapy, RCSI, and will be kept for five years. It will then be destroyed in compliance with Data Protection Guidelines.¹⁶

Procedure

Ethical approval for this study was granted by the Research Ethics Committee of the Royal College of Surgeons in Ireland. Permission was granted by the chairperson of the CPSEM to access their membership

database (2010/2011) through the CPSEM secretary. Once ethical approval was granted, an email was sent to each CPSEM member with an active email address (n=370). Consent was implied by completing the questionnaire. Participants were informed that data collected would remain anonymous. Two reminder emails were sent. All participants were offered a copy of the study results upon completion.

Statistical methods

The data was analysed using Statistical Package for Social Science version 18.0 for Microsoft Windows. Descriptive statistics and Pearson's test were used.

Results

A response rate of 34% (n=124) was achieved over a four-week period. Of the 124 responses received, 95 respondents had completed all four sections, giving a valid response rate of 26%. Data from the 29 respondents with incomplete questionnaires were excluded.

Demographics of the respondents

More than twice as many females (67.6%; n=64) than males (32.6%, n=31) responded, and 61.2% (n=60) of respondents had at least three years of experience in sports physiotherapy (**Table 1**). Most respondents worked in more than one sport (n=90), with the greatest numbers in: Gaelic football (53.7%; n=51); rugby (33.7%; n=32); and, hurling/camogie (32.6%; n=31) (**Table 2**). During competitive sporting events, 47.7% (n=41) of respondents reported always being present field side.

Knowledge of concussions

Nine questions were used to assess respondents' knowledge of concussion and clinical guidelines. Of the respondents, 55.8% (n=53) agreed that use of 'simple' and 'complex' terminology to describe concussion is correct. Another 51% (n= 48) answered that depression should not affect concussion management, while 22.1% (n=21) did not know the answer.

Of the respondents, 46.3% (n=44) were aware of the 2011 International Rugby Board (IRB) guidelines, while 37.9% (n=36) were aware of the 2007 Gaelic Athletics Association (GAA) guidelines and 35.8% (n=34) of the 2008 CIS statement. Respondents ranked dizziness/balance instability as the most common sign or symptom of concussion and stomach pain as the least common (**Table 3**). The mean score for the knowledge section was 11.7 out of 19 ($\sigma=2.1$).

Assessment of concussions

Orientation questions were the most widely used sideline tool for the assessment of concussion (82.1%; n=78). Only 15.8% (n=15) used the Standardised Assessment of Concussion (SAC). During play, 90.5% (n=86) of respondents reported not always having sufficient time for appropriate assessment.

Management of concussions

The mean score achieved on questions regarding the management of concussion was 8.1 out of 10 ($\sigma=1.3$). Physiotherapists led the

Table 1: Demographic characteristics of respondents (n=95).

Gender	n (%)
Male	31 (32.6)
Female	64 (67.6)
Experience working in physiotherapy	n (%)
<1yr	5 (5.3)
1-3yrs	23 (24.2)
3-6yrs	23 (24.2)
7-10yrs	11 (11.6)
>10yrs	32 (33.7)
Experience working in sports physiotherapy	n (%)
<1yr	9 (9.5)
1-3yrs	26 (27.4)
3-6yrs	24 (25.3)
7-10yrs	16 (16.8)
>10yrs	20 (21.1)
Postgraduate education	n (%)
MSc in Sports and Exercise Medicine	17 (18.3)
MSc in Sports Physiotherapy	13 (13.7)
Other	12 (12.6)

Table 2: Most common sports and levels in which physiotherapists currently work.

	Club n (%)	County n (%)	Provincial n (%)	National n (%)	Total n (%)
Gaelic football	47 (92.2)	13 (25.5)	2 (3.9)	1 (2.0)	51
Hurling/camogie	27 (87.1)	7 (22.6)	1 (3.2)	0 (0.0)	31
Rugby	28 (87.5)	2 (6.3)	3 (9.4)	2 (6.3)	32
Football	17 (68.0)	1 (4.0)	4 (16.0)	7 (28.0)	25

At the time of the survey, the majority of respondents worked in more than one sport or level (n=90).

implementation of treatment protocol for a concussed player in nine out of the 12 sporting categories.

The role of experience in the knowledge and management of concussion

No correlation was found between years of experience and knowledge scores ($r = -0.078$, $p = 0.45$), and years of experience and management scores ($r = -0.019$, $p = 0.86$). Similarly, no correlation was found between years of sports physiotherapy experience and knowledge scores ($r = -0.012$, $p = 0.91$), and between years of sports physiotherapy experience and management scores ($r = -0.024$, $p = 0.82$).

Discussion

Of the Irish physiotherapists surveyed, 35.8% (n=34) of respondents knew of the current CIS consensus statement, compared with 33.6%

Table 3: Signs and symptoms of concussion ranked by frequency.

Category	Respondent ranking (ranking mean)
Dizziness/balance instability	1 (2.8)
Attention/concentration deficit	2 (3.3)
Headache	3 (3.4)
Blurred vision	4 (4.3)
Feeling of nausea	5 (4.9)
Drowsiness	6 (5.4)
Amnesia	7 (5.6)
Loss of consciousness	8 (6.0)
Irritability	9 (6.7)
Low pulse rate*	10 (8.3)
Feeling of euphoria	11 (9.1)
Stomach pain*	12 (9.5)

*Signs and symptoms that are not related to concussion.

(n=336) of ATs in the United States and 44.4% of medical officers in the English football league.^{3,10} Two sports that respondents worked in, Gaelic football and hurling/camogie, had constructed their guidelines directly from the 2006 CIS statement.^{8,11} Other sports, such as rugby and soccer, updated their guidelines directly from the current CIS statement.^{3,12} In this survey, respondents reported being more aware of other sporting body guidelines – 37.9% (n=36) for GAA guidelines and 46.3% (n=44) for IRB guidelines – than of the current CIS statement.^{11,12} This exemplifies the negative impact that a delay in the dissemination of guidelines by sporting bodies could have on the management of a concussed player in that sport. The mean score for knowledge of concussion achieved by respondents was 11.7 (61.6%, $\sigma = 11.1\%$), and for management of concussion was 8.1 (81.2%, $\sigma = 13.0\%$). The high management score achieved by respondents could reflect the fact that the respondents were the primary lead in concussion treatment in nine out of 12 sports. The lower knowledge score may reflect the use of the current CIS statement to construct the survey.³ Changes and additions were made to the 2006 CIS statement in generating the current CIS statement, including: abandonment of the description of concussion as simple or complex; introduction of the Sports Concussion Assessment Tool 2 (SCAT 2) test; modifying factors for return-to-play management; and, consideration of special populations.^{3,8} The 2007 GAA guidelines, modified from the 2006 CIS statement, pre-dated the current CIS statement and do not include these elements.⁸ The correct answers for some of the questions – particularly whether it was appropriate to define a concussion as ‘simple’ or ‘complex’ (56.0% incorrectly responded) and whether depression was a modifying factor in management (51% incorrectly answered; 22.1% did not know the answer) – required knowledge of the current CIS statement.³ Therefore, incorrect answers from respondents may have simply been due to a lack of updated information. This finding has important implications, as the GAA Medical, Scientific and Welfare Committee will be updating its guidelines again this year, according

to GAA senior physiotherapist R. Carolan (personal communication, August 2011).

Standard orientation questions were the most widely used tool by respondents to assess concussion in players (82.1%, n=78). However, according to the CIS statement, orientation questions have been shown to be unreliable in sporting situations compared with memory questions.³ The vast majority of respondents reported not always having sufficient time for appropriate assessment during play. In the future, sporting organisations may need to ensure that adequate time is provided for effective sideline examination.

It was originally hypothesised that knowledge and management scores would correlate with experience in physiotherapy and sports physiotherapy. However, no correlation between knowledge and experience was found, suggesting that CPSEM members are generally consistent in their knowledge and application of consensus-based clinical practice irrespective of experience.

The low response rate encountered in this study may be due to the timing of survey dissemination, which may have coincided with holidays or the changing of membership. It may also be that recipients not currently involved in 'pitch-side' physiotherapy may have thought that they were not meant to be included in the study group. Non-response bias is a methodological problem in cross-sectional surveys, which adversely affects the reliability and validity of results.¹⁷ This study limitation might have been overcome by a random survey of non-respondents.

A second study limitation was that the original questionnaire used has not been demonstrably validated. The survey might have been

improved by the addition of more questions to assess knowledge of concussion. In this study, the questionnaire was piloted by three chartered physiotherapists. No major issues were identified, but one respondent found the pitch-side management question to be difficult due to lack of field experience. In order to be used in future research, a more comprehensive questionnaire should be developed and verified as an accurate gauge of participants' knowledge.

Conclusion

Physiotherapists work in a number of contact and non-contact sports. They often lead the treatment of concussion on the sidelines and are thus tasked with consistently providing best evidence-based practice for injured players.

This study found that there is little awareness of the current consensus statement within the physiotherapy community (35.8%, n=34), as more therapists are accessing sporting body guidelines rather than the CIS statement directly.³ No correlation was found between years of experience in physiotherapy or sports physiotherapy and knowledge or management of concussion, suggesting that a standard of care is maintained among chartered physiotherapists. A survey should be undertaken to identify the extent to which the dissemination of concussion guidelines occurs at the undergraduate level. Results of this survey indicate that physiotherapists preferentially consult specific sporting body guidelines for the management of concussion rather than the CIS consensus statement. This puts an important responsibility on the regulating bodies to regularly disseminate changes to concussion guidelines.

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Appendix: original questionnaire used to survey Irish chartered physiotherapists.

Section 1 – Demography

1. Gender: male female

2. How many years' experience do you have working in sports physiotherapy?

<1yr 1-3yrs 3-6yrs 7-10yrs >10yrs

3. Have you undertaken or are you currently undertaking formal postgraduate education? (Tick all that apply.)

- MSc Sports and Exercise Medicine
 MSc Sports Physiotherapy
 Other _____
 No

For each degree, please indicate year(s) of past/prospective graduation

4. Which of these less formal CPD courses have you undertaken, where management of the player with concussion was covered? (Tick all that apply.)

- Introduction to Sports Injury Management – Module B
 CPSEM: Sports Traumatology Course
 First aid qualification
 Other _____
 No

5. From the list below, please tick the sport(s) and level(s) you have worked in:

	Club	County	Provincial	National
Gaelic football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurling/camogie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rugby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Martial arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

6. From the list below, please tick the sport(s) and level(s) you are currently working in:

	Club	County	Provincial	National
Gaelic football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurling/camogie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rugby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Martial arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

7. Please indicate which healthcare providers are present at competitive events you attend:

	Never	Rarely	Sometimes	Often	Always
Physiotherapist	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Doctor	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
First aid service	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Section 2 – Knowledge of concussion

8. What current guidelines are you aware of for the treatment of concussion?

- 3rd Consensus Statement on Concussion in Sport – Zurich – 2008
 National Collegiate Athletic Association Guidelines – 2010
 The American Academy of Neurology Recommendations – 2010
 Position Statement on Concussion in Gaelic Games, GAA – 2007
 The IRB Concussion Guidelines – 2011
 FIFA recommendations – 2008
 The IOC recommendations – 2008
 ThinkFirst-SportSmart Concussion Education and Awareness Committee. Canadian Academy of Sports Medicine – 2005
 Other _____

9. It is correct to divide a concussion injury into 'simple' and 'complex' to help direct the treatment pathway?

- Strongly agree Agree Disagree
 Strongly disagree I don't know

10. Concussion can be caused by a directed blow anywhere on the body with an impulsive force transmitted to the head.

- Strongly agree Agree Disagree
 Strongly disagree I don't know

11. Concussion results in the rapid onset of short-lived impairment of neurologic function that resolves spontaneously.

- Strongly agree Agree Disagree
 Strongly disagree I don't know

12. 90% of adult concussions resolve in:

- 3-6 days 7-10 days 11-14 days
 >14 days I don't know

13. A player can suffer from concussion without loss of consciousness.

- Strongly agree Agree Disagree
 Strongly disagree I don't know

14. Which of the following do you feel are the most common signs and symptoms of concussion?

(Please rank from 1 to 12, 1 being the most common.)

- Dizziness/balance instability Attention/concentration deficit
 Loss of consciousness Low pulse rate
 Feeling of nausea Feeling of euphoria
 Drowsiness Blurred vision
 Irritability Stomach pain
 Amnesia Headache

15. A player with concussion can be allowed to return to play on the same day of injury if their symptoms have resolved.

- Strongly agree Agree Disagree
 Strongly disagree I don't know

16. A player has just been involved in a collision with an opponent.

When you get to the player he/she tells you they are fine.

What information would you need if you suspect they are concussed? (Tick all that apply.)

- Player's symptoms Respiration rate
 Pulse rate Short-term memory test
 Balance test – tandem standing with eyes closed

17. Which factors involved at the time of concussion do you feel would affect how the player's treatment is managed or require further assessment of the player?

	Strongly disagree	Disagree	Agree	Strongly agree	I don't know
LOC <1min	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
LOC >1min	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Female player	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Convulsive movement	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Player suffers from depression	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Symptoms >10 days	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Player between ages of 10 and 18 years	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Player <10yrs old	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Player has had a concussion in the last two months	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

18. There are no abnormalities seen on standard structural neuroimaging (MRI/CT) studies post concussion.

- Strongly agree Agree Disagree
 Strongly disagree I don't know

Section 3 – Assessment of concussion

19. Do you carry out pre-season cognitive evaluation testing?

- Always Often Sometimes Rarely Never
 If never, why? _____

20. What pre-season cognitive evaluation test(s) do you carry out? (Tick all that apply.)

- ImPACT computerised test
 Standardised Assessment of Concussion (SAC)
 None
 Other (please specify) _____

21. Do you have the player(s) sign a pre-season statement in which they accept the responsibility of reporting any illnesses or injuries to you?

- Always Often Sometimes Rarely Never

22. What test do you carry out on the sideline to evaluate cognitive function, if concussion is suspected? (Tick all that apply.)

- Maddock's Questions
 Sports Concussion Assessment Test 2 (SCAT 2)
 Standardised Assessment of Concussion (SAC)
 Orientation questions, i.e., time, place, person
 Balance test – tandem standing with eyes closed
 None Other _____

23. Do you feel you have sufficient time for appropriate assessment on the field for an injured player?

- Always Often Sometimes Rarely Never

24. Why does the third Consensus Statement on Concussion in Sport – Zurich 2008 – recommend that you reassess a player after an initial negative assessment for concussion?

- To make sure that the initial test was carried out correctly
 Because the appearance of symptoms can be delayed by several hours
 To make sure the player can return to play immediately
 To make sure the player was not hiding their symptoms

Section 4 – Management of concussion

25. Do you think all players, regardless of level, should be managed the same way?

- Strongly agree Agree Disagree
 Strongly disagree I don't know

26. A player has sustained a concussion but did not lose consciousness.

They report feeling like they are 'seeing stars'. Do you:

- Assess the player, allow them a few minutes to recover and send them back to play when they are subjectively ready
 Tell the player to get showered, changed and go home to relax
 Assess the player, remove them from play and continue to monitor them over the next few hours
 Tell them to go to their GP when they get a chance

27. A young player (<18yrs) has collided with an opponent. He/she says they feel a bit dizzy and nauseous. Do you:

- Check with the coach/manager about what he/she wants to do
 Send the player straight to hospital
 Contact the player's family. Inform them of the incident, advise regarding symptoms and recommend A&E if condition deteriorates
 Let the player rest on the sidelines and then see if they feel ready to continue play

28. You are unable to attend a competitive event. From the list below, what advice would you give the coach/manager if he/she suspects a player has suffered a concussion?

- The coach/manager should send the player to hospital/GP immediately for assessment
 The coach/manager should use his/her own judgment as to whether the player can continue
 The coach/manager should send the player home to recover
 The coach/manager should let the player decide if they can continue or not

29. Please indicate your views with regard to the management of an athlete with concussion:

	Strongly disagree	Disagree	Agree	Strongly agree	I don't know
Players can return to play immediately once asymptomatic	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
It is important to emphasise cognitive as well as physical rest	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
A graduated return to play is the safest protocol	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Generally, each of the seven steps to full recovery should take 24 hours per step	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Female players should have different treatment plans from male players	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
The players should carry out a cognitive function test before return to play	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

30. In your sport, who leads the treatment protocol for a player with concussion?

	You	The coach	The team doctor /local GP	The player	Other
Gaelic football	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hurling/camogie	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Soccer	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Golf	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Hockey	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Swimming	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Rugby	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Athletics	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Basketball	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Martial arts	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Cycling	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Other	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

31. Who decides when the player can return to competitive sport? (Tick all that apply.)

- You The coach The team doctor/local GP
 The player Other _____