

1 **Title: Sport-related concussion return-to-play practices of medical team**
2 **staff in elite football in the United Kingdom**

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34 **Title:** Sport-related concussion return-to-play practices of medical team staff in elite football in the
35 United Kingdom

36 **Abstract:**

37 This study explored sport-related concussion (SRC) return-to-play (RTP) behaviours and attitudes
38 of medical team staff working in elite football in the United Kingdom. Usage and awareness of The
39 Football Association (FA) guidelines, concussion education rates of players and coaching staff, and
40 collection of baseline concussion assessments. Additionally, confidence in managing RTP post-
41 SRC, perceived player under-reporting of symptoms, use of enhanced RTP pathways, and coaching
42 pressure on RTP were investigated. A cross-sectional questionnaire study was distributed online by
43 organisations including or representing medical staff working in elite football in the United Kingdom.
44 A total of 112 responses were gathered. High awareness rates of the FA guidelines were found
45 (96%) with variable rates of player and coaching staff concussion education. Baseline concussion
46 assessments were collected by 80% of respondents with 93% feeling very confident or confident in
47 managing the RTP of a player with a SRC. 60% rarely or never experienced coaching pressure
48 around player RTP, and 24% felt players always or very often under-reported symptoms to expedite
49 their return. 90% had a moderate to high confidence in the Sport Concussion Assessment Tool-5
50 (SCAT-5) as a RTP decision tool, and 66% always or very often used an enhanced RTP pathway.
51 Confidence in managing player RTP post SRC and use of enhanced RTP pathways were high, as
52 was confidence in the SCAT-5 as a RTP decision tool. Respondents raised concerns around player
53 under-reporting of symptoms to accelerate RTP post-SRC, and perceived coaching pressure around
54 decision making.

55

56 **Keywords:** soccer, rehabilitation, head injury, doctor, physiotherapist, therapist

57

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59

60 **Sport-related concussion return-to-play practices of medical team staff in elite football in**
61 **the United Kingdom**

62

63 **Introduction**

64 Sport-related concussion (SRC) is often defined as representing the immediate and transient
65 symptoms of traumatic brain injury (Mccrory et al., 2017). Ekstrand in 2011 published a SRC
66 incidence rate in male elite European football of 0.06 concussions/1000 hours of exposure, or one
67 concussion per team every other season (Ekstrand et al., 2011). Concern has been raised about
68 this figure underestimating the true incidence of SRC in elite football, with a recent Swedish study
69 finding a concussion incidence rate of 1.19/1000 player game hours (Prien et al., 2018, Junge and
70 Dvořák, 2015, Abraham et al., 2019, Vedung et al., 2020).

71 The process of returning a concussed athlete to sporting participation can be complex, with the
72 timing of the process being important to the athletes and coaching staff. It is well recognised that
73 injuries have a significant influence on team performance within male elite football, resulting in
74 pressure for player return to availability following any injury (Hagglund et al., 2013, Eliakim et al.,
75 2020). Return-to-play (RTP) decisions post-SRC are a source of potential influence from players,
76 coaching staff, and other external pressures (Broglia et al., 2010, Turner et al., 2020, Kroshus et al.,
77 2015, Williams et al., 2016). Despite this pressure, club medical staff have an ethical obligation to
78 return the player without comprising their health or performance, or their own professional
79 responsibilities (Turner et al., 2020).

80 Using a graduated stepwise rehabilitation strategy post-SRC has been commonly adopted and
81 advocated (Mccrory et al., 2017). Guidelines outlining RTP post-SRC decision aids are available
82 publicly, but their routine use within an elite sporting environment is variable (Donaldson et al., 2016,
83 Rosenbloom et al., 2021). RTP decisions are medical and, therefore, should be made by medical
84 professionals, ideally in a multidisciplinary approach when possible, using a multi-faceted approach
85 (Mccrory et al., 2017, Feddermann-Demont et al., 2014). The English Football Association (FA)
86 published guidelines in 2015 which set a standard of care for management of all players across all
87 leagues with suspected SRC, with a recent study finding a 97% awareness of these guidelines
88 amongst medicals staff working in elite football in the United Kingdom (The Football Association,
89 2015, Rosenbloom et al., 2021). Despite high guideline awareness, adoption of some of the
90 recommendations around player and coaching staff education and collection of baselines
91 concussion assessments varied showing awareness and knowledge does not automatically infer
92 adoption (Rosenbloom et al., 2021).

93 The RTP post-SRC recommendations within the FA guidelines adopt and reflect the most recent
94 consensus meeting recommendations which suggest a minimum of a week to progress through a

95 full rehabilitation protocol (Mccrory et al., 2017). An initial period of rest is followed by a progressive
96 graduated return to exercise with close monitoring of SRC related symptoms with increasing
97 physical exertion. Players cannot progress through each stage until they are symptom free, and
98 the time spent at each stage varies depending on age. It is accepted that in some circumstance
99 and environments there may be an enhanced level of medical care and closer athlete supervision.
100 In response, additional “enhanced” RTP guidelines are described which allow an accelerated
101 return. The implementation of the enhanced guidelines is very prescriptive with clear minimum
102 requirements outlined but require strict supervision by appropriate medical personnel as part of a
103 structured concussion management programme and cannot be used in any athlete under the age
104 of 16 (The Football Association, 2015, Mccrory et al., 2017). **One requirement on the enhanced**
105 **guidelines is “baseline SCAT5 and/or computerised neuro-psychometric/cognitive testing of the**
106 **player has been conducted prior to the injury” (The Football Association, 2015). The**
107 **Sport Concussion Assessment Tool-5 (SCAT-5) is a sport concussion evaluation tool used**
108 **by healthcare professionals in the acute evaluation of suspected concussion of individuals ages 13**
109 **or older (Echemendia et al., 2017). The SCAT-5 is an updated version of the preceding SCAT-3,**
110 **with changes being based on a systematic review and synthesis of current research, public input**
111 **and expert panel review as part of the 5th International Consensus Conference on Concussion in**
112 **Sport held in Berlin in 2016 (Echemendia et al., 2017, Mccrory et al., 2017).**

113
114 An adult (>18 years old) on the standard RTP pathway can return within 19 days at the earliest, and
115 on the enhanced pathway in 7 days. Under-19-year-olds can return earliest at 23 days on the
116 standard RTP pathway, and those aged 17-19 can return in 12 days on the enhanced pathway.
117 Concerningly, figures from The Union of European Football Associations (UEFA) Elite Club Injury
118 Study showed a median RTP of only 5 days post SRC within elite European clubs (Ekstrand et al.,
119 2020). This is shorter than the minimum 7-day period outlined in the most recent concussion
120 consensus statement (Mccrory et al., 2017).

121
122 It is accepted that the majority of injured athletes recover from a SRC from a clinical perspective
123 within the first month post injury (Mccrory et al., 2017). Within elite male Swedish league footballers
124 there was a median of 10 days before returning to full contact play, whilst elite female Swedish
125 league footballers took a median of 20 days (Vedung et al., 2020). In a cohort of elite male footballers
126 who sustained a SRC there was a substantially increased risk of sustaining a non-concussive injury
127 within the year after a concussion (Nordström et al., 2014). This shows that the impact of SRC can
128 persist after the minimum RTP time has been observed.

129 SRC management can be complicated due to player under-reporting of symptoms with the factors
130 influencing athletes’ injury awareness being organisational, societal, and individual (Chen et al.,
131 2019). A study in elite male and female Swedish footballers showed 27% continued to play or

132 practice immediately after concussion (Vedung et al., 2020), and 17% of elite male rugby league
133 players in Australia chose not to report likely concussive episodes and concussion-related symptoms
134 to medical staff (Longworth et al., 2021). Interestingly, 60% of Italian elite male adolescent footballers
135 indicated they had failed to report concussive symptoms that season with 94% doing so as they did
136 not feel SRC was serious, and 89% saying it was an accepted part of the game (Broglia et al., 2010).
137 Only 36% of elite English footballers felt the medical staff alone should be responsible in-game
138 removal decisions, and 40% thought RTP decisions were not made by the medical staff (Williams et
139 al., 2016).

140

141 To aid understanding of how best practice guidelines (The Football Association, 2015) around RTP
142 in football are perceived and implemented, the objectives of this study were to assess attitudes and
143 confidence around RTP post-SRC of medical staff working in elite football in the United Kingdom.
144 Existing research has not yet explored subjective perceptions by medical staff on RTP decisions
145 including player under-reporting of symptoms and perceived influence by medical staff on decision
146 making, which, as already discussed, is a recognised issue within elite footballing populations.

147

148 **Methodology**

149 ***Questionnaire Development***

150 An original questionnaire based on the 5th Consensus Statement on Concussion in Sport and the
151 FA concussion guidelines (The Football Association, 2015, Mccrory et al., 2017) was created
152 (Appendix A). The full methodology was previously detailed and published (Rosenbloom et al.,
153 2021). Confidence in returning players post SRC and confidence in the SCAT-5 were assessed
154 using a 5-point confidence based Likert Scale. Personal experience of player or coach pressure to
155 RTP, player under-reporting of symptoms, and use of the of the FA “enhanced pathway” were
156 explored using a 5-point frequency based Likert Scale. Questionnaire usability, relevance, and
157 content validity were checked by all the authors and by members of the English Football Association
158 medical team acting as external experts. The questionnaire was hosted on a secure website by
159 Online Surveys (JISC, Bristol, United Kingdom).

160

161 ***Inclusion Criteria***

162 Respondent inclusion criteria included healthcare professionals working in elite football within the
163 United Kingdom, who are involved in the return to play of players post SRC. Staff working in Men’s
164 and Women’s football in first team, academy settings, national teams, and in disability football were
165 invited to participate. The terminology of elite was chosen rather than professional and semi-
166 professional due to a lack of an agreed terminology and variability in definition. **‘Consultant level
167 doctors’ in the United Kingdom are deemed as those who have completed a training program in their
168 chosen specialty. General practitioners (GPs) are not deemed as consultants.**

169

170 ***Distribution Approach***

171 Recruitment was via organisations whose membership included medical staff working in elite
172 football. This recruitment approach was chosen to increase participation, rather than only contacting
173 the clubs' designated medical officer. Organisation selection was agreed by all authors and included:
174 The British Association of Sport and Exercise Medicine (BASEM), The Faculty of Sport and Exercise
175 Medicine (FSEM), The Football Medicine and Performance Association (FMPA), and The Football
176 Association Medical Society (FAMS). Healthcare members of the organisations were sent at least
177 one email by the respective organisations with some also promoting recruitment via social media
178 (Twitter and LinkedIn). Involvement was without obligation with no financial benefit. Recruitment
179 opened beginning of January 2020 and closed end of February 2020. The nature of distribution
180 prevented an exact response rate being calculable.

181 Ethical approval was granted by XXX ethical research committee, ethics code XXX. Consent was
182 gained using a pre-participation leaflet with confirmation of acceptance being required. Respondents
183 could withdraw up until completion of the questionnaire. All information collected was anonymous
184 and non-identifiable.

185

186 ***Statistical Analysis***

187 Analysis was conducted within Statistical Package for Social Sciences (SPSS; version 26, IBM Corp,
188 NY, USA) with significance set at $p \leq 0.05$. Pearson X^2 was used to assess difference in nominal data
189 between groups. Differences in non-parametric Likert scale responses were assessed using Mann-
190 Whitney U tests (U) for differences between two distinct groups, or Kruskal-Wallis test (H) for
191 differences between more than two distinct groups. When analysing responses to coach or player
192 education or baseline concussion assessment rates, answers of "not sure" were grouped with "no"
193 responses, due to any uncertainty around the definite delivery of education and/or concussion
194 assessment collection inferring deviation from the FA recommendations.

195

196 ***Results***

197 A total of 136 completed questionnaires were received. Thirteen respondents were excluded for not
198 being involved in RTP decisions post SRC, five for not working in the United Kingdom, and six for
199 not working in football leaving 112. The majority of respondents were male (77%), lived in England
200 (88%), and worked in Men's football (86%). 53% were doctors, 29% physiotherapists, 15% sports
201 and/or rehabilitation therapists, and 3% sports scientists. Full respondent demographics are seen in
202 Table 1. A high percentage of respondents worked in the top 5 tiers of men's' football (The Premier
203 League, The English Football League Championship, The English Football League One, The English
204 Football League Two, and The National League) and the top 2 tiers of women's' football (FA
205 Women's Super League, and The FA Women's Championship) as seen in Table 3 (77%, N=86).

206

207 ***Table 1 near here***

208

209 ***Concussion Education and Guideline Awareness***

210 Player and coach concussion education and FA guideline awareness levels within this cohort are
211 seen in Table 2. Awareness of the FA guidelines was high with 96% (N=108) being aware, and 4%
212 (N=4) not being aware. Concussion specific education delivery to players per season was indicated
213 by 49% (N=55) of respondents, 41% (N=46) did not, and 10% (N=11) were not sure. Coach
214 concussion education per season was delivered by 38% (N=42) of respondents, 44% (N=49) did
215 not, and 19% (N=21) were not sure.

216

217 ***Table 2 near here***

218

219 ***Baseline Concussion Assessment***

220 Collection of baseline concussion was indicated by 80% (N=90) of respondents, 17% (N=19) did
221 not, and 3% (N=3) were not sure (Table 2). Of those who collected baseline assessments; SCAT-5
222 assessments were collected by 98% (N=88), ImPACT by 13% (N=12), and CogSport by 3% (N=3).

223

224 ***Confidence in managing return-to-play post sports-related concussion***

225 When asked 'how confident do you feel in managing the return to play of a player with a concussion';
226 38% (N=43) felt very confident, 55% (N=62) felt confident, 5% (N=5) felt neither confident nor
227 unconfident, and 2% (N=2) felt unconfident. **Confidence levels between those who collected baseline
228 testing and those that did not were not significantly different** ($p=.77$). Of those who worked more than
229 30 hours a week at their club, 97% (N=35) felt very confident or confidence in RTP decisions,
230 compared to 91% (N=60) of staff working under 12 hours a week.

231

232 ***Perceived coaching pressure on return-to-play post sports-related concussion***

233 When exploring perceived pressure from coaching staff on accelerating return, 9% (N=10) always
234 felt coach pressure, 12% (N=13) felt it very often, 20% (N=22) sometimes, 32% (N=36) rarely, and
235 28% (N=31) never (Figure A). There was no significant difference in respondents who always or very
236 often felt coaching pressure when comparing those that collected baseline concussion assessments
237 and those that did not (18% (N=7) vs. 32% (N=16); $p=.15$), or those who educated their coaching
238 staff every season and those that did not (18% (N=7) vs. 22% (N=16); $p=.91$).

239

240 ***Perceived player symptom under reporting in clinic to accelerate return-to-play post sports- 241 related concussion***

242 When asked about perceived players under-reporting of symptoms in clinic to return to play sooner
243 following a concussion; 4% (N=4) always felt players underreported symptoms, 20% (N=22) felt very
244 often, 50% (N=56) sometimes, 22% (N=25) rarely, 5% (N=5) never (Figure B). There were no

245 statistical differences when exploring perception of players always or very often under reporting of
246 symptoms in respondents who educated players per season (13%; N=7) and those that did not
247 (33%; N=19; $p=.129$), respondents who educated their coaching staff per season (16%; N=6) and
248 those that did not showed no statistical differences (27%; N=20; $p=.361$), and respondents who
249 collected baseline concussion assessments (18%; N=16) and those that did not (45%; N=10;
250 $p=.168$).

251

252 ***Figure A and B near here ***

253

254 ***Use of the FA Advanced Return-to-Play Pathway***

255 When asked if they used the FA advanced return-to-play pathway; 36% (N=40) indicated they always
256 used the FA advanced guidelines when returning a player from an SRC, 30% (N=33) very often,
257 13% (N=15) sometimes, 6% (N=7) rarely, and 15% (N=17) never (Table 3). Higher rates of usage
258 of the enhanced pathway were seen in respondents working in Men's first team football. 82% (N=50)
259 of respondents working in Men's first team football always or very often used the enhanced pathway,
260 compared to 60% (N=15) of those working in Men's 17-23 age group football (Table 3). Increasing
261 rates of usage were seen in respondents working in clubs further up the Men's football pyramid:
262 Premier League (87%, N=20), English Football League Championship (78%, N=18), English
263 Football League One (75%, N=12), League Two (70%, N=7). In those working in Men's or Women's
264 team aged 16 or under (N=11), 55% rarely or never used the enhanced pathway (N=6). Of the 22
265 respondents who did not or were not sure if they collected baseline concussion assessments, 36%
266 (N=8) always used the enhanced pathway, 14% (N=3) did very often, 27% (N=6) did sometimes, 5%
267 (N=1) rarely did, and 18% (N=4) never did.

268

269 ***Table 3 near here***

270

271 ***SCAT-5 confidence in RTP***

272 Of the 90 respondents that collected baseline concussion assessments; 27% (N=24) had a high
273 confidence in the SCAT-5 as a tool in player return-to-play, 63% (N=57) had moderate confidence,
274 9% (N=9), and 1% (N=1) had no confidence in it. High to moderate confidence was seen in 90%
275 (N=81) of respondents who collected baseline concussion assessments, compared to 82% (N=18)
276 who did not collect baseline assessments.

277

278 **Discussion**

279 Confidence in the management of player return-to-play post-concussion was high with 93% feeling
280 very confident or confident, with a high awareness of the FA guidelines (96%). There was a concern
281 that players were under-reporting symptoms in clinic to speed up their return to play post-concussion
282 with only 27% of respondents thinking players rarely or never did this. This is supported by other

283 studies which show 64% of players would continue to play knowing they may have sustained a
284 concussion (Williams et al., 2016), and 45% of players would knowingly return-to-play with a
285 concussion (Tsao, 2014). Pressure from players around their return is well documented with
286 decision making being influenced by their perception of the importance of their upcoming games
287 (Williams et al., 2016, Broglio et al., 2010, Tsao, 2014).

288 Confidence in SCAT-5 as a return to play tool was high with 90% having a high or moderate
289 confidence in it, however neuro-psychometric testing alone should not direct management decisions
290 but should provide an aid in the decision-making process (Mccrory et al., 2017). Current guidelines
291 and pathways rely heavily on player symptom reporting with the assumption that players engage in
292 this process with honesty. Medical professionals working in elite sports are at risk of litigation should
293 questions be asked regarding the management of players RTP post-SRC (Turner et al., 2020). Not
294 following recommendations or having objective evidence to support RTP decisions, may be putting
295 medical professionals at risk. A recent study of European elite football physicians showed that 63%
296 of respondents did not collect any baseline neurological or neuropsychological assessment each
297 season, suggesting that practices can be improved (Gouttebauge et al., 2021). Use of detailed
298 objective neuro-psychometric testing such as ImPACT and CogSport were low. Given the partly
299 subjective nature of the SCAT-5, higher utilisation of additional objective neuro-psychometric testing
300 could reduce player under reporting of symptoms during the rehabilitation process.

301
302 There is a growing emphasis on player-specific concussion education with evidence that it increases
303 footballers' knowledge and attitude towards concussion (Gouttebauge et al., 2019). Despite this, our
304 study found no difference in medical staff perception of true symptom reporting in teams that
305 educated their players and those that did not. Given the subjective nature of the study methodology,
306 these results do not reflect player opinions or perceptions which could be a source of further
307 research.

308 The FA concussion guidelines outline a standard return to play protocol and an "enhanced care
309 setting" pathway for those working in environments which lend themselves to do so (The Football
310 Association, 2015). Use of these guidelines were high with 66% of respondents saying they always
311 or very often used the enhanced care pathway, with the highest frequency of use in men's first team
312 staff (82% reporting always or very often using). Guidance on what settings the enhanced care
313 pathway can be applied are clear, with one recommendation being that "baseline SCAT5 and/or
314 computerised neuro-psychometric/cognitive testing of the player has been conducted prior to the
315 injury". 77% of respondents who did not collect any baseline concussion assessment testing said
316 they always, very often, or sometimes used the enhanced care setting guidelines. This is concerning,
317 given that a useful adjunct of accelerating player return is serial neuro-psychological testing and is
318 clearly outlined in the FA guidelines (Patricios et al., 2018, The Football Association, 2015, Mccrory
319 et al., 2017). Of the 11 respondents working with players aged 16 or under, 7 (64%) indicated they

320 at times used the enhanced pathway. This is of interest as the enhanced pathway should not be
321 used for any player who plays for an age group below under-17s.

322 Pressure felt from coaching staff in accelerating player return following concussion was **present** with
323 40% feeling pressure always, very often, or sometimes. Similar figures were seen in Italian football
324 club level medical staff where 33% felt pressured by the coaching staff when making return to play
325 decisions, suggesting that the landscape remains unchanged (Broglio et al., 2010). The same study
326 found that no coach indicated that he/she had ever placed pressure on the medical team to
327 accelerate the return a concussed athlete, indicating a mismatch between coaching staff behavioural
328 self-perceptions and reality (Broglio et al., 2010). Higher figures of perceived pressure were seen in
329 elite and semi-professional Welsh rugby union medical staff where 80% felt pressured to clear a
330 concussed player by either the player themselves or the coach (Mathema et al., 2016). It has been
331 shown in a non-elite population group that reducing pressure from coaching staff on player return
332 can increase athlete symptom reporting, emphasising the important role that coaching staff have
333 over athlete behaviour (Kroshus et al., 2015). One potential consideration would be to utilise
334 independent concussion consultants to evaluate players prior to return. This may help share the
335 decision-making and improve communication and collaboration around return decisions (Patricios et
336 al., 2018).

337 Concussion specific education in other sports has been found to increase concussion knowledge in
338 coaching staff including their return-to-play knowledge (Yeo et al., 2020, Griffin et al., 2017, Shanley
339 et al., 2019). However, in this study there was no evidence of coaching education or collection of
340 baseline concussion assessments changing the perceived pressure felt by medical staff to
341 accelerate player return from coaching staff. This should not undervalue the importance of
342 concussion education and baseline assessment collection and coaching staff behaviours which
343 should be explored in more depth in the future.

344
345 Post-concussion care and return-to-play in elite sports can be a complex and challenging topic with
346 guidelines only being recommendations as to best practice. The decision making should be directly
347 guided and managed by medical staff.

348 349 **Limitations**

350 Due to the recruitment method calculating a response rate was not possible. The self-reported nature
351 of the questionnaire raises limitations within the data set and relies on truthful completion. The
352 questionnaire did not explore knowledge of the FA guidelines but only awareness, and the question
353 around concussion substitutes did not give an explanation around the process involved due to
354 concussion substitutes not existing at the time of the questionnaire creation. The self-selected and
355 voluntary completion raises concern of selection bias, and the anonymous nature makes it
356 impossible to identify whether the respondents were from across all clubs. The high heterogeneity

357 and small number of respondents within some of the groups limited intergroup comparisons and the
358 potential significance of statistical analysis. **The age and experience of managers and coaching staff**
359 **were not collected, and whether this is a factor which may influence concussion attitudes within clubs**
360 **is unknown and could be explored in future research.** Given the novelty of the area of being explored
361 there was no validated questionnaire available, but questionnaire content and usability was piloted
362 prior to distribution.

363

364 **Future Directions**

365 The level of interest in this area is growing, as is the body of research. This study has highlighted
366 some potential avenues for further exploration and attention. A comparison of perceived
367 underreporting of player symptoms and coaching staff interference on RTP decision could be
368 assessed between staff working in different leagues, academy vs. first team settings, and men's vs.
369 women's football. Exploration of coaching age and background may show differences in perceived
370 pressure from coaching staff, as might player age and previous SRC concussion on under reporting
371 of symptoms.

372

373 **Conclusion**

374 Awareness of the FA guidelines were high. Use of the enhanced return-to-play guidelines were
375 common, with potential usage outside of the intended settings particularly regarding younger
376 athletes. Medical staff working in elite football overall felt confident in managing the RTP of
377 concussed players, however there was some concern about player symptom under-reporting to
378 expedite return, and perceived coaching staff pressure on decision making processes. Collection of
379 baseline concussion testing was high with utilisation of SCAT-5 testing accounting for the large
380 majority of testing, with confidence in the SCAT-5 as a RTP tool being moderate to high. Use of more
381 objective neuro-psychometric testing was low, which could be an area of future focus to reduce potential
382 subjective player influence on RTP decisions.

383

384 **Applied Recommendations:**

- 385 - All medical staff working in elite football should be collecting baseline concussion
386 assessments.
- 387 - Collection of SCAT-5 tests should be seen as a minimum, with additional neuro-
388 psychometric testing being desirable.
- 389 - Use of enhanced return-to-play protocols should only be used in appropriate settings.
- 390 - Utilisation of independent concussion experts should be considered in complex cases.
- 391 - Diligent and comprehensive note keeping around player concussion care decisions should
392 be made to safeguard both the player and the clinician.

393

394

395 Competing interests: CR, DB, and WC hold or have held clinical roles at the Football Association within

396 the youth pathway teams. DB, WC, and RC hold clinical roles in Premier League football clubs. CR
397 holds a clinical role in a Women's Super League team.

398

399

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502 Table 1: Respondent demographics

		N	Male N (%)	Female N (%)
Total		112	86 (77%)	26 (23%)
Country	England	98	76 (78%)	22 (22%)
	Wales	2	1 (50%)	1 (50%)
	Scotland	9	8 (89%)	1 (11%)
	Northern Ireland	2	0	2 (100%)
	Ireland	1	1 (100%)	0
Men's/Women's	Men's football	96	76 (79%)	20 (21%)
	Women's football	16	10 (62.5%)	6 (37.5%)
Profession	Physiotherapist	33	22 (67%)	11 (33%)
	Sports and/or rehabilitation therapist	17	10 (59%)	7 (41%)
	Sports scientist	3	2 (67%)	1 (33%)
	Doctor	59	52 (88%)	7 (12%)
	Consultant level	21	20 (95%)	1 (5%)
	Non-consultant level	38	32 (84%)	6 (16%)
Age	Under 20 years	1	1 (100%)	0
	21-30 years	32	20 (62.5%)	12 (37.5%)
	31-40 years	38	31 (84%)	7 (16%)
	41-50 years	19	16 (84%)	3 (16%)
	51-60 years	17	13 (76.5%)	4 (23.5%)
	61-70 years	3	3 (100%)	0
	Over 71 years	2	2 (100%)	0
Years of experience	0-2 years	21	12 (57%)	9 (43%)
	3-4 years	24	17 (71%)	7 (29%)
	5-6 years	18	15 (83%)	3 (17%)
	7-10 years	12	10 (83%)	2 (17%)
	11-14 years	13	12 (92%)	1 (8%)
	Over 15 years	24	20 (83%)	4 (17%)
Hours worked in club per week	0-4 hours	39	30 (77%)	9 (23%)
	5-12 hours	27	20 (74%)	7 (26%)
	13-20 hours	6	4 (67%)	2 (33%)
	21-29 hours	4	3 (75%)	1 (25%)
	30+ hours	36	29 (81%)	7 (19%)

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506 **Table 2: Number (%) of baseline concussion assessment collection and concussion**
 507 **education**

	Yes (%)	No (%)	Not sure (%)
Player concussion education per season	55 (49%)	46 (41%)	11 (10%)
Coach concussion education per season	42 (38%)	49 (44%)	21 (19%)
Baseline concussion assessment collection	90 (80%)	19 (17%)	3 (3%)

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510 **Table 3: Use of enhanced FA concussion return pathway by team worked in, club**
 511 **level, and age group**

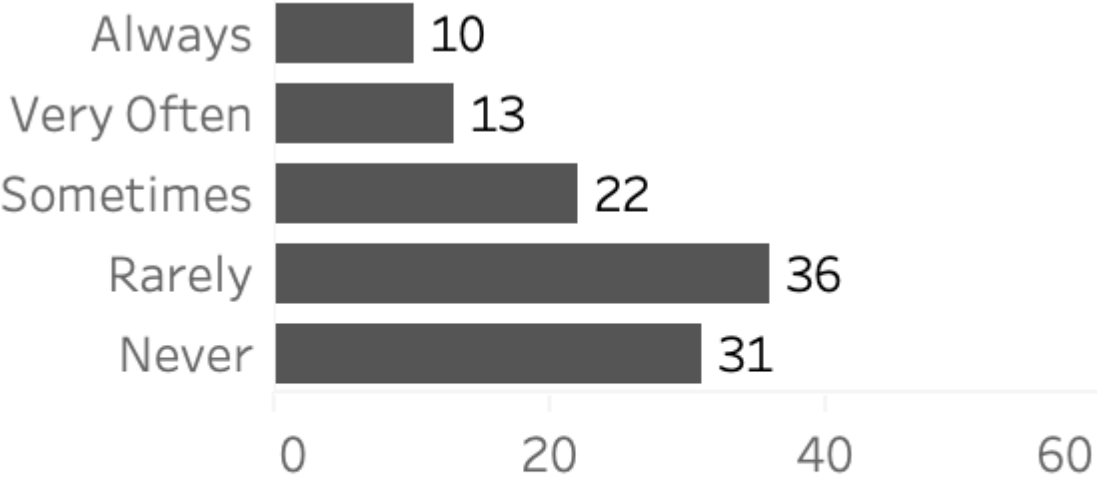
	Always (%)	Very Often (%)	Sometimes (%)	Rarely (%)	Never (%)	Total
Men's first team	28 (46%)	22 (36%)	6 (10%)	2 (3%)	3 (5%)	61
Men's team aged 17-23	7 (28%)	8 (32%)	4 (16%)	2 (8%)	4 (16%)	25
Men's team aged 16 and under	1 (14%)	0	2 (29%)	2 (29%)	2 (29%)	7
The Premier League	9 (39%)	11 (48%)	1 (4%)	1 (4%)	0	23
The English Football League Championship	11 (48%)	7 (30%)	3 (13%)	1 (4%)	1 (4%)	23
The English Football League One	9 (56%)	3 (19%)	2 (13%)	0	2 (13%)	16
The English Football League Two	4 (40%)	3 (30%)	0	3 (30%)	0	10
The National League	3 (60%)	1 (20%)	0	0	1 (20%)	5
Scottish Premier League	3 (100%)	0	0	3		3
Women's first team	0	3 (33%)	2 (22%)	1 (11%)	3 (33%)	9
Women's team aged 17-23	1 (33%)	0	0	0	2 (67%)	3
Women's team aged 16 and under	2 (50%)	0	0	0	2 (50%)	4
FA Women's Super League	1 (20%)	2 (40%)	1 (20%)	0	1 (20%)	5
FA Women's Championship	0	0	1 (25%)	0	3 (75%)	4
Total	40 (36%)	33 (30%)	15 (13%)	7 (6%)	17 (15)	112

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Figure A: Count of perceived influence of coaching staff on RTP decisions



Count of perceived influence of coaching staff on RTP decision

Figure B: Count of perceived under-reporting of symptoms by players to expedite RTP post SRC

