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7 Why Athletes Say NO To Doping: A Qualitative Exploration Of The Reasons
8 Underpinning Athletes' Decision Not To Dope.

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26

Abstract

27 Athletes' motives for choosing not to use Performance Enhancing Drugs (PEDs) are
28 likely to be diverse and complex, including a consideration of biological factors (e.g.,
29 performance advantage), psychological characteristics (e.g., risk taking behavior), and
30 the athlete's social environment (e.g., the opinion and influence of significant others).
31 As such, a multifactorial (bio, psycho, *and* social) evaluation is important when
32 examining the reasons against usage. The purpose of this study was to examine the
33 reasons athletes cite for not using PEDs. A phenomenological approach was
34 employed and data were collected from athletes (n = 36) and coaches (n = 10) using
35 semi-structured interviews and analyzed using Interpretative Phenomenological
36 Analysis. Personal and moral standards were identified as key factors that led to
37 decisions to avoid PED. Psychological and social factors (e.g., the role of significant
38 others such as the coach) also play significant roles in decisions to avoid doping.
39 Although anti-doping testing and education is central to anti-doping strategy, athletes'
40 decision not to dope was made independent of, or at least not contingent on these
41 structures. As such, these findings have the potential to inform educational initiatives
42 designed to combat doping in sport outside the usual emphasis on sanctions and
43 testing.

44 *Keywords:* biopsychosocial, cheating, anti-doping strategy, decision-making,
45 qualitative

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Introduction

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Testing and associated sanctions are generally supported as a means of discouraging performance enhancing drug (PED) use in sport. In fact, the risk of getting caught underpins anti-doping policy and its emphasis on the detection and sanctioning of athletes in violation of anti-doping policy. Furthermore, the social impact of “shame” experienced is viewed as another significant deterrent (Bloodworth & McNamee, 2010). Thus, even though the stance of anti-doping is sometimes questioned on moral grounds of proportionality (i.e., too much emphasis on too few users, less than 2% of athletes test positive in any given year, WADA, 2009; cf. Kayser et al., 2007), there seems to be a strong and apparently consistent resistance to such usage and support of the systems used to police against it. Despite this, research has consistently shown that the prevalence of doping is much higher than the positive test results show (e.g., Petróczi & Naughton, 2011; Pitsch & Emrich, 2012). Furthermore, use of therapeutic user exemptions (TUEs) for asthma and thyroid medications, and the use of similar substances within legal limits for performance enhancing effects has received considerable attention in the media in recent times. Reflecting this, some researchers have suggested that educational strategies focused on prevention and the promotion of abstinence (Mazanov et al., 2011) are needed as opposed, or at least as an addition, to the focus on detection and punishment. This focus on understanding, promoting, and reinforcing the reasons underpinning athletes’ decision *not* to dope seems warranted as both drug testing and sanctioning have been shown to remain static despite reported increases in the usage of PEDs (Petróczi & Naughton, 2011; Pitsch & Emrich, 2012).

Accordingly, a broader social science understanding of reasons underpinning abstinence from doping would seem sensible in terms of shifting the attention from

76 detection towards an understanding of athletes' decision making process. The
77 decision to dope is a conscious decision but also an emotional, rational, and well-
78 informed decision. For example, whilst many athletes report satisfaction with their
79 own environment and national situation, they perceive laxity within systems
80 elsewhere in the world as a major problem (Bloodworth & McNamee, 2010). Indeed,
81 an over-estimation of drug usage may well be a correlational factor with intention to
82 use in some individuals. Attitudes to other, albeit legal, ergogenic aids such as
83 nutritional supplements or even specific, though often medically endorsed, hormonal
84 treatments represents another important facet of the mental model which underpins
85 athlete thinking about usage, those who use, and their own personal intentions
86 (Mazanov et al., 2008). For example, the use of thyroid and testosterone medication
87 for performance enhancing effects is a current hot-topic in elite sport and
88 understanding athletes' decision making process in this regard, together with
89 similarities and differences between this and illegal PED usage, is an under-explored
90 but important area for exploration in understanding doping in sport.

91 Given the extant picture of the factors which have an influence, a
92 multifactorial (bio, psycho, *and* social) evaluation is important when examining the
93 reasons against PED usage. Support for this approach comes from evidence for the
94 mediating role of social desirability (Petróczi, 2007) between attitudes toward and
95 susceptibility to engage in PED usage (Gucciardi et al., 2010). From a psychosocial
96 perspective, the "protective" or "encouraging" influences of team dynamics against
97 PEDs have also been demonstrated (cf. Lentillon-Kaestney & Carstairs, 2010).
98 Furthermore, the effectiveness of testing and sanctions has also been questioned by
99 Strelan and Boeckmann (2006) who suggest that athletes consider their moral beliefs,
100 fear of health impacts and legal consequences when making decisions about PED

101 usage. Indeed, there appears to be a theoretical and empirical consensus on critical
102 social-cognitive determinants of doping usage (e.g., Dodge & Jaccard, 2008; Lucidi et
103 al., 2008).

104 Extending the social dimension, the role of the coach as mediator of the
105 athlete's social environment and the influences therein is an important factor
106 (Huybers & Mazanov, 2012; Morente-Sanchez & Zabala, 2013). This research
107 suggests that athletes are more at risk of doping if coaches or senior athletes provide
108 convincing evidence of the immediate benefits. Once again, however, there is a need
109 for further work since reviews clearly show the extra potential insights which such a
110 focus could offer (Backhouse & McKenna, 2012). Finally, the coach's viewpoint may
111 offer an additional perspective, answering some of the concerns expressed about the
112 limitations of self-report data which, to date, has provided the majority of data on
113 PEDs (Brand et al., 2011). In simple terms, therefore, there is clear evidence for the
114 complex interactions that seem to be associated with uptake of use or even
115 consideration to start, all of which must sensibly be encompassed within any global
116 anti-doping strategy (cf. Stewart & Smith, 2010).

117 A number of reasons underpinning decisions not to dope have been found in
118 the literature (e.g., Ehrnborg & Rosén, 2009). These include "doping is cheating and
119 not fair play", the medical risks associated with doping, the perceived impact of
120 doping on performance in particular sports, and the impact which doping has upon the
121 image of a sport (e.g., Mohamed, Bilard & Hauw, 2013; Erickson, McKenna &
122 Backhouse, 2014). Theoretical approaches to understanding the psychology of doping
123 have emphasised social-cognitive determinants of use where doping is seen, using the
124 theory of planned behaviour (Ajzen, 1991), as a volitional behaviour depending on
125 the athlete's intentions to use PEDs, which are influenced by attitudes, expected

126 social approval and perceived behavioural control. Furthermore, and as discussed
127 previously, the importance of individual views about the approval of significant
128 others, PED use amongst peers (Wiefferink et al., 2008) as well as the individual's
129 confidence about resisting social pressure (Lucidi et al., 2008; Erickson et al., 2014)
130 have all been shown to play a role in understanding PED usage. Despite this
131 understanding, however, the testing of these ideas amongst elite athletes has been
132 scarce and the predominant emphasis has been on reasons why athletes do dope (e.g.,
133 Kirby et al., 2011) rather than on the reasons that they don't. Dodge and Jaccard
134 (2008) present an important advance on these ideas and suggest that abstinence is a
135 "viable, independent, behavioural alternative in some decision making contexts" (p.
136 710). Using a sample of adolescent athletes, this research found that the reasons
137 underpinning decisions not to dope were not merely the inverse of the reasons cited
138 for doping and that focusing on emotive and affective beliefs shown to influence
139 intention not to dope within intervention programs may affect the use of PEDs
140 (Dodge & Jaccard, 2008).

141 The emerging picture may lack clarity, however. An obvious limitation of
142 many studies to date is that data is often not based on truly elite samples, with various
143 studies conducted with high school (e.g., Laure et al., 2004), adolescent (e.g., Laure &
144 Binsinger, 2007), or collegiate (e.g., Petroczi, 2007) athletes. Consequently, further
145 work is indicated to confirm these findings with elite populations. As such, it would
146 be valuable to see if the decision to not use PEDs is impacted or moderated by the
147 elite status of the athlete and their perception of the environment in which they
148 perform. If so, and based on data with genuine elites (e.g., Moran et al., 2008), there
149 are strong indications that programs utilizing accurate and empirically justified
150 information could prove a strong feature of a deterrent program.

151 Reflecting these issues, the purpose of this study was to examine the reasons
152 athletes cite for not using PEDs. Previous research has shown attitudes towards
153 doping vary by sex, with males at a higher risk than females and sport, risk of doping
154 is highest in speed and power sports (both factors highlighted by Alaranta et al.,
155 2006). Further, Vangrunderbeek (2011) reports a shift in attitude over time from ‘zero
156 tolerance’ to a more lenient attitude towards doping in sport as athletes age.
157 Reflecting this, we were also interested in exploring whether the reasons *not* to use
158 PEDs might vary against a number of key factors including age, sport, and level of
159 performance. Given the important impacts demonstrated for psychosocial milieu, this
160 study was delimited to an examination of athletes from a British and Irish culture. As
161 the aim of this study was to explore athletes’ personal experiences of decision-making
162 about PEDs, a phenomenological approach was employed.

163 **Methods**

164 **Design**

165 Data were collected using semi-structured interviews and analyzed using
166 Interpretative Phenomenological Analysis (IPA; Smith, 1996), as this approach allows
167 rigorous exploration of idiographic subjective experiences and social cognitions.
168 Essentially, IPA explores how people ascribe meaning to their experiences in their
169 interactions with the environment (Smith et al., 1999)

170 **Participants**

171 A purposive sample of athletes ($n = 36$) and coaches ($n = 10$) were recruited
172 from a range of sports (i.e., power, endurance and team sports) and backgrounds.
173 Athletes were all high-level participants in their chosen sport (defined as participation
174 at a world-level (e.g., World Championship or Olympic Games for the power and
175 endurance sports; International for team sports) and declared that they had not taken

176 PED during their sport careers (see Table 1). This purposeful sample was an
177 important consideration in order to examine the elite viewpoint. A range of sports was
178 purposefully sampled in order to identify the extent to which findings, and
179 consequently policy and strategy, could be generalizable and impactful. The coaches
180 had, at least, 15 years' experience coaching at a world-class level (e.g., (e.g., World
181 Championship or Olympic Games for the power and endurance sports; International
182 level for team sports)

183 **Procedure**

184 Following research ethics board approval, coaches and athletes from a range
185 of sports who met the sampling criteria were recruited through personal contact, either
186 directly or through gatekeepers. The study was explained to participants, and consent
187 forms were distributed to those who expressed interest. A semi structured interview
188 approach similar to the majority of IPA studies was adopted (Smith & Osborn, 2003).
189 The interview schedule was not intended to be prescriptive and instead, the interview
190 guide was used as a prompt and a basis for conversation. Consistent with the IPA
191 approach, participants were considered to be the experts and it is the meaning that
192 they attribute to their experiences that was of interest (Smith, 1996). As such,
193 participants were allowed to take the lead during the conversation and direct the flow
194 of the interview. The interviewer was an experienced sport psychologist who has over
195 30 years' experience working at the highest level of sport in a variety of roles. This
196 experience and understanding of elite sport, coupled with a clear separation from the
197 respective sports organizations, training groups, and anti-doping agency, were
198 important factors in developing rapport with the participants and ensuring that they
199 were comfortable responding to questions. All the interviews were recorded and
200 transcribed verbatim to produce an accurate record of the interviews. Excluding

201 introductions, explanations and initial conversation to build rapport, the interviews all
202 lasted between 35 and 55 minutes.

203 **Data Analysis**

204 Data were independently analyzed using Smith and Osborn's
205 recommendations for IPA analysis (2003). First, all transcripts were read and reread
206 so that the researchers could become familiar with each participant's account. At this
207 stage, initial notes of thoughts, observations, and reflections were recorded in the
208 right-hand margin of the interview transcript and shared with the research team. In a
209 second reading, the left-hand margin was used to identify themes that captured the
210 essential qualities of the interview and connections were made between the emergent
211 themes and researcher interpretations (Smith & Osborn, 2003). As a result, a list of
212 subordinate themes and codes were compiled, with the aim of providing an overall
213 structure to the analysis by relating the identified themes into clusters and to identify
214 super-ordinate categories that suggest a hierarchical relationship between them.

215 Throughout this process, checks were made with the original transcript and the
216 interviewer's field notes to ensure that connections still worked with the original data
217 and that the analytic accounts could be traced back to recognizable core accounts. In
218 cases where this step identified a disagreement, each investigator reread the original
219 transcript, discussed the coding, and a consensus was reached. Disagreement was
220 evident in less than 15% of codes and all issues were resolved following discussion.
221 Once the analysis was completed for one transcript, a second transcript was coded.
222 The table of themes was used to code similar meanings in the same categories, and
223 was expanded to incorporate new ideas as they emerged. During this phase, emergent
224 themes were continually compared back to the original transcripts to ensure
225 consistency. Once this process had been completed for all the transcripts, the research

226 team reread the transcripts to ensure that all themes were coded consistently (Smith &
227 Osborn, 2003). As expected with this form of analysis, some of the emergent themes
228 reflected the content of the interview schedule, while others emerged from the
229 participants' novel responses. The super-ordinate themes and their sub-ordinate
230 components are presented in Table 2 along with a short verbatim account that
231 illustrates each super-ordinate theme.

232 **Ensuring Trustworthiness and Credibility**

233 A number of steps were taken to enhance the study's trustworthiness (Lincoln
234 & Guba, 1985). Bracketing, which involved the researchers keeping a reflective diary
235 to help bracket their personal experiences and consider the influence of personal
236 values, was used (Nicholls et al., 2005). Furthermore, and also ensuring that the
237 authors remained cognizant of their assumptions and presumptions, an independent
238 "critical friend" was used throughout the data analysis process by supporting in-depth
239 critique and investigation of the emerging interpretation, discoveries and explanations
240 (Faulkner & Sparkes, 1999). Credibility was also enhanced in a number of ways
241 including the sample size employed, having two investigators involved in each level
242 of analysis, and having researchers with significant experience in performance sport
243 involved in the study (Sparkes, 1998).

244 **Results**

245 Table 2 highlights the range of factors underpinning athletes' decision making
246 about PEDs. All participants mentioned each of the super-ordinate themes during
247 their interviews. Sub-ordinate themes were only included when data from at least 75%
248 of the participants could be attributed to the theme. As such, the findings reported
249 represent consensus amongst the group.

250 **Anti-Doping Testing and Associated Sanctions**

251 Despite the emphasis placed by WADA and National Governing Bodies of
252 Sport on anti-doping testing and associated sanctions, these factors were not reported
253 as central to athletes' decision to avoid doping. Interestingly, although athletes were
254 cognizant of the testing procedures in place, many suggested that there were "*ways*
255 *around the testing procedures...if you want to do it, there are ways to dope without*
256 *getting caught*" (Endurance sport athlete, International, male). Furthermore, the
257 majority of participants suggested that they still would not take PEDs even if the anti-
258 doping testing procedures were removed. Illustrating this, one premiership rugby
259 player described how "*it wouldn't make any difference to me...I could go away to*
260 *visit a mate in South Africa for six weeks in the summer and come back a lean*
261 *sprinting machine, seven kilos up in weight and I know I wouldn't get caught for it.*
262 *But I still wouldn't do it*".

263 There did appear to be some differences across the different sports, perhaps
264 reflective of the level of anti-doping testing carried out. Track and field athletes
265 suggested that they would likely be tested and that this acted as somewhat of a
266 deterrent – "*I've been tested in the past, and you still cack yourself because even*
267 *though I know I am clean, you think what if something shows up, what if I took*
268 *something without knowing...so it does keep you on your toes in that respect*".
269 (International Athlete). However, many of these athletes suggested that there were
270 many in their sport who were "*way ahead of the testers...I mean, they know how to get*
271 *away with it*" – "*...you read about people and you hear it as well, that certain things*
272 *can be out of your system before they test, or they can't test for certain things yet, so*
273 *people are getting away with it*" (Endurance athlete, International level).

274 The team sport athletes, rugby players and footballers for example, suggested
275 that testing was not a deterrent since testing was not that prevalent in their sport "*...it*

276 *isn't the testing that stops me, we rarely get tested, so yeah, it is not that I don't take*
277 *drugs because I might get caught...that isn't the reason'* (Rugby player,
278 International).

279 ***Anti-Doping Education.*** Participants also suggested that anti-doping education was
280 not an influencing factor in their decision not to take PEDs. In most cases,
281 participants reported that they had made their decision about doping long in advance
282 of their first attendance at a workshop and described how these educational sessions
283 *"just educated you on the testing procedures...they don't really get you to think about*
284 *the reasons why you should or shouldn't"* (Judo player, International). Although most
285 participants reported that anti-doping education was useful in that it informed them
286 about policies and procedures – *"I think the information was good in that way...it*
287 *gave me a clear understanding of what to watch out for when you are taking*
288 *stuff...the Sudafed and all that..."* (Track and field athlete, International) it didn't
289 impact on their decision-making process about taking illegal PEDs – *"I don't think it*
290 *was that effective really...I formed an opinion long before any of these workshops and*
291 *I would stick to these"* (Judo player, International). These results suggest that the
292 traditional emphasis on education, testing, and sanctions in anti-doping campaigns
293 does not appear to be a significant influencing factor on these individual's decisions
294 about PEDs.

295 **Personal Ethical Standards**

296 In contrast to the comparatively weak role played by education and testing, the
297 key factor that influenced decision-making about PEDs centered on the athlete's
298 moral stance about doping in sport. Participants strongly suggested that doping was a
299 moral decision, typified by this athlete's explanation that, irrespective of whether the
300 athlete would get caught, it is wrong and "cheating". Typifying this, one development

301 level endurance athlete stated that *“I have friends who don’t even get tested, who*
302 *could easily take drugs, get themselves to a reasonable performance level and stop*
303 *because they will never get caught. But they don’t for the same reason that I don’t,*
304 *because they feel like they are cheating themselves”*. Interestingly, the participants
305 described this as *“a line that I wasn’t prepared to cross”* with one international level
306 Judo player suggesting that she *“doesn’t want to cheat myself, and I don’t want to*
307 *cheat the other four fifths of people that are competing with me, the ones that are*
308 *competing without doping, I don’t want to cheat myself and I don’t want to cheat*
309 *them”*.

310 Participants were also asked to compare and contrast doping with other
311 “cheating” behaviors in their sport. Of course, cheating is difficult to define in this
312 context but can be understood as violating the explicit or implicit nature of the rules
313 of the competition in order to gain an advantage (Lee et al., 2007); simply,
314 professional fouls or gamesmanship. Interestingly, participants suggested that doping
315 was a significantly worse offense than other forms of cheating such as diving in
316 football, punching in rugby, or psyching out your opposition in athletics

317 *“Punching, getting someone at the bottom of a ruck, all those things are*
318 *cheating, like to the letter of the law. But not one rugby player plays the game*
319 *to the letter of the law, you are always looking for the little advantage. So you*
320 *are constantly pushing that line but I think that that is different to taking*
321 *drugs, that is what you do in the heat of battle, I think there is a line in sport*
322 *and I know that I wouldn’t cross it’*. (International rugby player)

323 Although the athletes acknowledged that these behaviors were outside the rules of the
324 sport, they suggested that they were part of the game whereas doping was outside the
325 spirit of the sport and not acceptable.

326 This moral complexity was an interesting basis for athletes' decision about
327 "cheating" behaviors in their sport. Although they stated that their decision about
328 PEDs was morally based, the decision making underpinning other aspects of the
329 participants' behavior in the sport had a more rational underpinning. The key message
330 that emerged from participants in this regard was that there was a personally enforced
331 ethical line that they wouldn't cross to gain an "*unfair advantage*" against their peers.

332 There also appeared to be significant age effects apparent in athletes' attitudes
333 towards, though not necessarily their usage of, PEDs. A minority of older athletes and
334 coaches (then as athletes) admitted to taking PEDs during their early career and
335 recognized the temptation of this. Conversely, the younger cohort of athletes strongly
336 articulated their stance and stated how they would not take PEDs due to their personal
337 ethical standards. As such, and perhaps somewhat surprisingly given the increasing
338 competitiveness of elite sport, the younger athletes displayed a much stronger anti-
339 doping stance, grounded by their personal morals and ethics, than the older athletes
340 and coaches. However, there was significant complexity evident underpinning
341 athletes' decision making about performance enhancing substances, both legal and
342 illegal, and these will be explored further in the next section.

343 **Illegality of Substances**

344 The central role that morals seemed to play in the athletes' decision making
345 was interesting and went beyond the use of PEDs. The legality of substances was an
346 important factor in the athletes' decision making with all the participants suggesting
347 that legal nutritional aids are not cheating "*because WADA says so!*" However,
348 although all the participants spoke about the legality of substances as an important
349 factor in their decision, this was actually a complex issue. For example, when athletes
350 were probed about whether they would take medical supplements to achieve above

351 normal, though still legal, levels (e.g., thyroid manipulation) the majority suggested
352 that they wouldn't be comfortable, describing this type of supplementation as also
353 "unethical" and "cheating". For example, one international level endurance athlete
354 when asked about whether he would take testosterone to boost his levels responded:

355 *"I don't know, I guess if the doctor said I needed to, if it was healthy. If I went*
356 *to a normal GP and they suggested that I took it, not anything to do with the*
357 *sport, then I would take it. But if I went to a doctor from [name of NGB] and*
358 *they said, take it, it will boost your performance, then I would be like well,*
359 *why do you want me to do that...I would feel different about it if it was only*
360 *performance enhancing..."*

361 In fact, this idea of equality was another reason athletes cited for not taking PEDs,
362 describing how other, legal, substances were acceptable because *"I feel that everyone*
363 *has access to that sort of dietary stuff"* and *"if it is allowed and everyone is doing it*
364 *then I think it's alright. If everybody is on the same playing field then its fine but if*
365 *people are taking stuff that does a bit more than help you recover then I think there is*
366 *a big difference"* (Track and field athlete, development level).

367 As described in the previous section, age effects were apparent in athletes' and
368 coaches' responses to these questions. For example, when a younger international
369 level endurance athlete was asked *"would you take supplementary testosterone to get*
370 *your levels up to a normal, legal...would that be cheating?"* he replied, *"No, that is*
371 *not acceptable, if it is specifically targeted to get you to the limit, the legal limit, then*
372 *I would say that is cheating, I wouldn't do it"*. However, when responding to a similar
373 question, an older coach suggested that *"there is stuff that sails a little close to the*
374 *wind, thyroid manipulation and things, it is legal but still kind of iffy...if it would help*
375 *an athlete and it was legal, maybe even if I had reservations, I would want the athlete*

376 *to have it*” (Track and field coach). This potentially related age and role (i.e., coach or
377 athlete) effect deserves further clarification but should have important implications
378 for the design and delivery of anti-doping policy and education.

379 **The Role of Significant Others**

380 A number of key psycho-social influences emerged as playing a central role in
381 athletes’ decision making about PEDs. Firstly, the importance of the training group
382 and culture of their sport was cited as fundamental to athletes’ decision not to take
383 PEDs. The participants described how doping was “culturally inevitable” in other
384 countries and sport systems but was not part of their involvement in sport. One
385 developmental level judo player suggested that “*it [doping] is not part of what I*
386 *understand as traditional Judo culture. We are quite traditional in this group, we*
387 *have a traditional background, a lot of what we take as our culture is from [name of*
388 *coach] and before him and because of that, no I would never consider doping*”. As
389 such, anticipated feelings of shame and guilt associated with doping were cited as key
390 reasons underpinning the decision not to dope with a number of participants
391 suggesting that they would be letting significant others who helped them achieve in
392 their sport down. For example, one international endurance athlete described how he
393 “*came from a very strong family background, and to my family through that if I got*
394 *busted for a positive test...I could never, I could never even consider that*”.

395 **Psycho-social Environment**

396 The protective mechanism of the athletes’ training environment certainly
397 appeared to influence their decision, with significant others, including parents,
398 coaches and peers, all playing a role in the athletes’ decision-making. Interestingly,
399 many of the participants emphasized the role of parents in guiding their decisions
400 about PEDs and how their upbringing instilled those values from an early age.

401 Typifying this, one international level footballer described how “*yeah that comes*
402 *from my family, you shouldn’t win by cheating and I think that is what I have been*
403 *taught and that is how I like to win*”. Reflecting the role played by significant others,
404 many of the participants suggested that they trusted the actions of coaches and other
405 medical and sport science support staff in guiding their decision about substances. For
406 example, another international level footballer commented that “*you put your trust in*
407 *a lot of the people around you, and you hope that they give you the right advice*”.
408 However, despite the importance placed on significant others, and the rules governing
409 what is legal or not, participants all stressed that it was their individual decision to
410 take or refuse PEDs. Supporting this, one international level rugby player described
411 how “*this is my line, someone else’s line might be different, but this is my line and I*
412 *won’t cross it*”. Nonetheless, the importance of reference group opinion, peers and
413 significant others’ approval or disapproval of doping, does appear to play an
414 important role in athletes’ decision-making about doping.

415 **Discussion**

416 Testing and anti-doping education is central to anti-doping strategy (WADA,
417 2009). However, the results of this qualitative study suggest that athletes’ decision not
418 to dope was made independent of, or at least not contingent on, these structures. This
419 reflects other evidence which suggests that anti-doping testing and sanctions do not
420 play a significant role in athletes’ decision not to dope. Instead, the individual’s
421 personal and moral standards, and the influence of their psycho-social environment
422 appear to be the key factors underpinning their decision about doping (Erickson et al.,
423 2014; Petrozci, 2007; Wiefferink et al., 2006). However, this moral reasoning
424 appeared to be more complex than “it is just against the rules so I won’t do it”. The
425 athletes suggested that they had their own “moral compass” that guided their

426 decisions about both PEDs and other legal performance enhancing substances (Dodge
427 & Hoagland, 2011; Strelan & Boeckmann, 2006). This was illustrated by the athletes'
428 suggestion that they would not take legal substances *just* to gain a performance
429 enhancing effect even if these were allowed. Further, the participants described the
430 shame that would be associated with getting caught doping and this was very much
431 described in terms of a moral emotion and a failure to live up to the norms and
432 expectations of their social group (Eisenberg, 2000). The ability to influence athletes'
433 moral compass would seem an effective way to influence decision-making about
434 PEDs in sport. Interestingly, the participants were very strong in their stance that they
435 would prefer to compete, and perhaps not win, as a "clean" athlete than be more
436 successful by taking PEDs (Laure et al., 2004).

437 When athletes' attitudes to doping, compared to other forms of cheating in
438 their sport, are examined a number of interesting issues emerge. Although the
439 participants suggested that they would engage in some forms of cheating when it was
440 within the spirit of the sport (e.g., attempts to 'psych' opponents out or illegal
441 tackling) the degree of rationality in terms of decision making about PEDs was
442 interesting (Backhouse et al., 2007) – even if the athletes weren't going to get caught
443 and they were assured their performance would improve, they still reported that they
444 wouldn't take PEDs. Again, this points to the importance of attitudes and morals as a
445 key feature of the decision-making process (Haugen, 2004).

446 The differences across different age cohorts is another important issue that
447 emerged from the results and is consistent with previous research (e.g., Mazanov et
448 al., 2008). For example, there appeared to be a significant difference in older and
449 younger participants' responses to the questions about illegality of substances with the
450 younger cohort strongly suggesting that even if certain substances were legal (or not

451 tested for) they would not take them as this crossed their “personal moral compass”.
452 Conversely, the older cohort was not as strong in their conviction about this and
453 suggested that “*as long as it was legal, it was ok*”. Given the rapid development of
454 PEDs and the difficulty of maintaining an efficient testing program that can
455 adequately test of *all* PEDs the role of personal ethical and moral standards in
456 younger athletes should be an important avenue for exploration for anti-doping
457 agencies.

458 Unlike some evidence from the literature (e.g., Goldman & Klatz, 1992),
459 athletes did not report health risks as a significant factor in their decision not to dope.
460 In fact, the negative health risks (both short and long term) were not seen as
461 influencing factors with most athletes suggesting “*I haven’t even thought about it, the*
462 *health implications wouldn’t have crossed my mind*”. Although the lack of attention
463 to long-term health risks associated with PEDs may be expected within a young
464 population, such as that sampled for this study (Ehrnborg & Rosén, 2009), short-term
465 health implications were also not seen as a significant factor in the athletes’ decision-
466 making. As such, the significant factors influencing the athletes’ decision not to dope
467 appear to be their personal moral and ethical standards rather than a “cost versus
468 benefit” evaluation of doping. Personal moral beliefs therefore seem to act as a
469 preventing factor for doping (Strelan & Boeckmann, 2006).

470 Interestingly, the participants were realistic that, at least in some sports, many
471 competitors were taking PEDs and that success at the world level was difficult for
472 “clean” athletes. Despite this, the overwhelming majority reported that they wouldn’t
473 take PEDs, not primarily because they were banned or the likelihood of getting
474 caught, but because cheating in this manner was against their personal ethical
475 standards. This is not to say that the athletes wouldn’t cheat in other ways (e.g.,

476 diving, shirt pulling), defined by the athletes as “within the spirit, if not the rules of
477 the game”. In fact, the athletes’ stated reluctance to take legal supplements for purely
478 performance enhancing reasons is interesting against the growing trend worldwide for
479 such supplementation. The athletes suggested that this crossed a line of fairness but
480 did recognize that there “shades of grey” in terms of this debate. For example, the
481 participants recognized that other legal supplements such as creatine or caffeine also
482 have performance enhancing effects but suggested that they were comfortable with
483 these because they are available to all athletes. However, the complexity underpinning
484 this decision making is worthy of attention as it, no doubt, has a significant impact on
485 the athletes’ attitudes to different performance enhancing supplements. In fact, the
486 complexity of this issue is evident in the “hypocritical” stance taken by some athletes
487 about one substance and another suggesting that athletes’ attitudes to PEDs is not as
488 clear cut as whether a substance is legal or not.

489 The athletes’ psychosocial environment, and the role of significant others, was
490 also shown as a key factor underpinning their decision about PEDs. As found
491 elsewhere in the anti-doping literature (e.g., Bird & Wagner, 1997), the external
492 pressures of social and moral expectations acted as a deterrent with coaches, the
493 norms of the training group, and peers especially important in this influence. As such,
494 interventions and anti-doping strategies that work at group levels would seem an
495 efficacious way to influence decision making about taking PEDs. In fact, the
496 traditional anti-doping education procedures were described by the participants as
497 “*not particularly useful*” outside the focus on procedures and systems. Instead,
498 influencing the subculture of a sport or training environment may be more effective.
499 This was particularly evident in the current results with athletes describing how the
500 anti-doping ethos of their training group, sport, and country played a role in their

501 decision (Mazanov & Huybers, 2010; Strelan & Boekmann, 2003). The sport's
502 culture has been shown to be influential in precipitating PED use (Kirby et al., 2011)
503 as described by admitted dopers. Individuals strive to show solidarity with peers and
504 enhance their group identity by conforming to group norms. Therefore, altering
505 expectations and group norms about doping would seem a salient way to impact PED
506 usage. This might be especially important from a developmental perspective given
507 that many factors such as role models, vulnerability to peer pressure, and attitudes
508 change as athletes move from one developmental stage to another (Petróczi &
509 Aidman, 2008).

510 As found elsewhere in the literature, participants suggested that doping was
511 not a widespread problem within their training group or country and that there was an
512 “anti-doping culture” in UK / Irish sport. However, there were repeated references to
513 the extent of the problem in other countries. In fact, the track and field and endurance
514 athletes as well as the rugby players suggested that there was systematic and
515 organized doping in other countries, similar to the “sporting xenophobia” described
516 by Bloodworth and McNamee (2010). Although this “doping dilemma” has been
517 suggested to be a driving factor in PED usage, since the associated suspicion that
518 everyone else is using PEDs drives athletes to use to compete under the same
519 circumstances, this was not the case in this study. Instead, the participants' personal
520 moral standards, reinforced by their psycho-social environment, were the driving
521 factor in their decision not to dope. This finding has interesting implications for anti-
522 doping policies. Given the protective influence that coaches, significant others and the
523 social milieu appear to play in an athletes' decision not to dope, emphasis at this
524 social level would seem important.

525 Of course, there are a number of limitations to this study that must be
526 highlighted and considered. Firstly, this study is based on participants' self-reported
527 accounts and, given the nature of the topic, the findings must be interpreted in light of
528 this and the possibility that participants were not honest in their responses, despite the
529 steps taken during the data collection process to overcome this limitation. We also
530 acknowledge that the findings of this study are delimited to an Irish and British
531 population. Given that the social environment, and by extension cultural milieu, has
532 been shown to play a significant role in athletes' decision making, it would be worth
533 exploring the extent that these findings are generalizable to other countries, cultural
534 contexts, and indeed other sports (e.g., aesthetic sports for example). Finally, we did
535 not explore differences between male and female athletes in this study due to the
536 relatively small number of females recruited to participate (cf. Alaranta et al., 2006).
537 However, given that males tend to have a more permissive attitude towards doping
538 (Bloodworth et al., 2012), as well as the paucity of research on females' experiences
539 of doping at elite levels of sport, it would be interesting from both an academic and
540 applied perspective to further examine the reasons females "say no" to doping as
541 these may potentially differ from their male counterparts.

542 The findings from this study suggest that there are interesting implications for
543 emphasizing the importance of abstinence, "saying no", within anti-doping policy (cf.
544 Dodge & Jaccard, 2008). These results support the literature suggesting that there are
545 different behavioral outcomes associated with abstinence from risky behavior
546 compared to engaging in risky behavior and these are manifested in an individual's
547 attitudes, beliefs and social norms (Dodge & Jaccard, 2008). Importantly, many of the
548 reasons underpinning abstinence from PED usage were affective, emotional and
549 social and targeting these in doping prevention strategies should be an important

550 consideration. Reflecting this, anti-doping strategies should benefit from campaigns

551 that emphasis the positive effects of abstinence rather than the negative effects of

552 engaging in doping or stressing the prevalence of PED usage.

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671 Table 1.

672 *Participant Information*

Participants	Level of competition ⁶⁷³
Rugby (n = 8; 8 male)	International (n = 5; age 21 – 31 years) Premiership Club (n = 3; age 20 – 26 years)
Football (n = 5; 5 male)	International (n = 5; age 21 – 32 years)
Judo (n = 8; 3 female, 5 male)	International (n = 5; age 22 - 29) Development (n = 3; age 18 – 21 years)
Endurance sports (n= 8; 2 female, 5 male)	International (n = 6; age 22 – 29 years) Development (n = 2; age 18 – 20 years)
Track and field athletics (n = 7; 2 female, 5 male)	International (n = 5; age 21 – 28 years) Development (n = 2; age 18 – 19 years) Football (n = 2) Rugby (n = 1)
Coaches (n = 10; 10 male)	Judo (n = 2) Endurance (n = 2) Track and field athletic (n = 3)

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Table 2.

Themes and sub-theme with example data extracts from interviews

Super-ordinate Theme	Sub-ordinate Theme	Data exemplar
Personal Ethical Standards	Cheating yourself and others – gaining an unfair advantage	“I was never tempted...the fact that when I go to competitions and stand at the side of the mat, I like to know that I have done everything right to get there and I couldn’t have that feeling if I cheated”
	Complexity of decision making about ‘legal’ substances	“I would say with testosterone, if it was to bring them up to a healthy level then I would say that is acceptable. But if it was specifically targeted to get them to the limit then I would say that is cheating” “even if something isn’t banned but they are pretty close to what is banned and you know I wouldn’t morally take them...other

		things like protein and vitamins, they have scientifically tested and everyone is allowed use them so that we all know that is acceptable”
	Personal decision guided by moral values	“Some things are legal and some things aren’t but I have my own line that goes ‘that’s okay and that isn’t’ and that is pretty much it”
	Actions guided by what is ‘within the rules’	“I don’t think punching, or diving, or shirt pulling is really cheating, it’s just part of the game and if I do it and get caught my team will get punished but doping is different, that isn’t within the spirit of the game”
Psycho-social Environment	Letting others down	“I was thinking about my family you know, and if I was to be caught, the shame of it...the thought

		of my mother having to survive that, I was a shining star in our little neighborhood and if I caught you would be letting all those people down”
	Shame and guilt	“I would be mortified, embarrassed, shameful in terms of my family, my children”
	Anti-doping culture within ‘their’ sport / culture as a protective mechanism	“I don’t feel like it is even a thing in my environment, I don’t know if that is my group, my sport or even Great Britain but it just isn’t part of what we do”
Role of significant others	Influence of family and parents	“I think certainly my parents are important, the way I was brought up was to try and if you are going to do something do it to the best of your ability but to do something to the best of your ability means to do

		it right”
	Influence of Peers and Coaches	“I came into judo as a skinny 17 year old by watching [name of judo player] and people like that, when they would go off to the world championships I was thinking that is what I want to do. So I learned everything from [name of athlete] and [name of coach] and they would have told me that it [doping] is the wrong thing to do”
Anti-doping testing and education	Getting caught was not a significant factor	“I don’t think that the testing is a deterrent in my decision not to dope” “I think that people who dope are smart about it and you know I’m sure the testing procedures make them nervous but I think a lot of people know how to

	beat the rules”
Education not a significant factor	“I don’t think the anti-doping education stuff was that important...by the time I had been given the information I had already decided that I wasn’t going to do that sort of stuff anyway”
