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BPS DSEP Position Statement: Psychological skills training for performance enhancement, long-term development, and wellbeing in youth sport

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5 BPS DSEP Position Statement: Psychological Skills Training for Performance Enhancement,
6 Long-Term Development, and Well-being in Youth Sport

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1 **Abstract**

2 Young athletes have become an increasingly important client group for sport psychology
3 practitioners and a population whose physical, cognitive, emotional, and social development
4 should be carefully considered by a practitioner when delivering their services (Visek et al.,
5 2009). The aim of this British Psychological Society (BPS) Division of Sport and Exercise
6 Psychology (DSEP) position statement is to summarise existing knowledge about
7 psychological skills training (PST) interventions and discuss optimal service provision of
8 PST in youth sport. In the first section of this position statement, we provide a brief overview
9 of the literature exploring PST during childhood (5-11 years), early adolescence (12-15
10 years), and mid-to-late adolescence (16-18 years). Within each sub-section, key
11 developmental considerations (i.e., physical, cognitive, emotional, and social) are provided
12 followed by short summaries of research on basic single strategy (i.e., goal setting, imagery,
13 relaxation, and self-talk) and alternative strategy interventions (e.g., mindfulness, music,
14 perceptual training, and self-modelling) with young athletes. In the second section, optimal
15 service provision of PST is discussed by drawing upon practitioners' experiences of working
16 with young athletes, concluding with 10 recommendations for youth sport organisations,
17 training and accrediting bodies, researchers, and practitioners.

18 **Keywords:** *Sport Psychology, Applied Practice, Great Britain, Children, Adolescents*

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**BPS DSEP Position Statement: Psychological Skills Training for Performance
Enhancement, Long-Term Development, and Well-being in Youth Sport**

Youth sport in its broadest sense refers to the skill development sessions and competitive events participated in by children and adolescents, typically under 18 years of age (Harwood & Thrower, 2019a). Within the United Kingdom (UK), youth sport remains a popular activity for children and adolescents, with over 90% of children currently participating in sport on a weekly basis (Department of Digital, Culture, Media & Sport, 2023). Although youth sport exists in various guises (i.e., with varying amounts of adult involvement, and at different levels and intensity of competition), in recent years the term has become synonymous with adult structured, regulated, and organised competitive events.

There are also an increasing number of organised youth sport programmes which identify and select talented young athletes, focus on sport skill development, and are primarily concerned with optimising opportunities for young athletes to develop and progress to an elite level (Harwood & Thrower, 2019a). Whilst participating in structured and competitive youth sport has been associated with many physical (e.g., strength, coordination), psychological (e.g., self-esteem, emotional regulation), cognitive (e.g., working memory, attention), and social benefits (e.g., social skills, peer relationships), there have also been a growing number of concerns in recent years (i.e., early sport specialisation, low rates of retention, increased risk of concussions and overuse injuries, high levels of stress, and burnout; see Gould, 2019).

The changing youth sport landscape has led to expanding roles and responsibilities for sport psychology practitioners (SPPs) (e.g., engaging in organisational psychological practices, positive youth development, promoting life skills, and mental health and counselling support provision; see Sly et al., 2020). Within the UK, however, youth sport coaches' and parents' perceptions of the role and benefits of SPPs remain strongly centred around performance enhancement, development, and well-being (see Thelwell et al., 2018).

1 As Harwood and Thrower (2019b) recently suggested: “We [SPPs] have a responsibility and
2 duty of care towards the science of protecting young athletes and optimising health and well-
3 being, we also have a responsibility to support those committed young people who are
4 looking to scientists to serve their intrinsic passion for sport, and introduce them to the
5 processes and skills that will help to optimise their performance and its consistency under
6 pressure” (pp. 176). Therefore, psychological skills training (PST) continues to play a vital
7 role in helping young athletes cope with the performance-related demands and expectations
8 associated with increasingly professionalised youth sport environments and talent
9 development pathways (e.g., pressure to perform, performance errors/mistakes, overemphasis
10 on winning; see Crocker et al., 2017).

11 Fortunately, there is a sizable body of literature which provides scientific and applied
12 knowledge to support practitioners using PST to enhance the well-being, long-term
13 development, and performance of young athletes. For instance, applied researchers have
14 written book chapters on the key developmental considerations when working with young
15 athletes (see Kipp, 2018), developed youth sport consulting models (e.g., Visek et al., 2009;
16 Blom et al., 2013), and explored practitioners’ accounts and experiences of delivering PST
17 interventions with young athletes (e.g., Foster et al., 2016; Henriksen et al., 2014; Howells,
18 2017). In addition, researchers have also examined the effectiveness of basic single strategy
19 interventions (i.e., goal setting, imagery, relaxation, and self-talk), alternative strategy
20 interventions (e.g., mindfulness, music, and perceptual training, and self-modelling), and
21 multimodal interventions on young athletes’ long-term development (see Dohme et al., 2019)
22 and performance (see Harwood & Thrower, 2019b).

23 Although these studies have made valuable contributions to the literature, there
24 remains an absence of clear and coherent recommendations for supporting further scholarship
25 and developmentally appropriate evidence-based PST in youth sport. This has been attributed

1 to a lack of applied researchers consistently dedicated to studying PST with young athletes
2 and the wider challenges associated with gaining accessibility and financial support for
3 research from youth sport organisations (Harwood & Thrower, 2019b). As such, there is a
4 need for youth sport organisations, training and accrediting bodies, and applied researchers to
5 take a more active and cooperative role in providing practitioners with clear guidance on
6 optimal PST provision. Therefore, the purpose of this British Psychological Society (BPS)
7 Division of Sport & Exercise Psychology (DSEP) position statement is to summarise existing
8 knowledge about PST interventions across developmental stages, discuss optimal service
9 provision of PST in youth sport, and generate recommendations for youth sport organisations,
10 training and accrediting bodies, researchers, and practitioners to help advance knowledge and
11 practice within this area.

12 **Research Exploring PST Interventions in Youth Sport**

13 In the following section, we provide a brief overview of the literature exploring PST
14 during childhood (5-11 years), early adolescence (12-15 years), and mid-to-late adolescence
15 (16-18 years; Kipp, 2018; Wylleman & Lavellee, 2004). It is important to note that PST
16 refers to the learning and implementation of mental techniques that assist individuals in the
17 development of mental skills to achieve performance success and well-being (Vealey, 2007).
18 As such, there is a distinction between psychological techniques/strategies (e.g., imagery,
19 self-talk, goal setting, routines, etc) and psychological skills (e.g., capacity to regulate one's
20 own cognitive, affective, and behavioural states; see Holland et al., 2018). Within each sub-
21 section below, key developmental considerations are provided followed by short summaries
22 of research on basic single strategy and alternative strategy interventions with young athletes.

23 **PST with Children (5-11 years)**

24 The ages of 5-11 years include the end of the preoperational stage (2-7 years) and the
25 concrete operational stage (7-11 years; Piaget, 1952). When children are in the preoperational

1 stage, they typically can solve concrete problems but are unable to understand logic (Piaget,
2 1952). Children are likely to focus on single aspects of a problem, rather than considering the
3 whole problem (Kipp, 2018). For these reasons, adopting PST will enable practitioners to
4 target specific and tangible issues and also facilitate the cognitive stage of learning where the
5 primary focus is on ‘what to do’ (Schmidt & Lee, 2005). Moreover, young children are
6 generally unable to understand other people’s points of view and thus, often assume that
7 other people will see, hear, and feel the same way they do (Slater & Bremner, 2017). With
8 regards to sport, a child may struggle to understand how a teammate located in a different
9 position on a pitch may see the game differently to them and as such, may struggle to
10 understand why they may have acted differently to the one they would have chosen.
11 Therefore, SPPs should focus on understanding perceptions and experiences from each
12 child’s perspective when delivering PST.

13 As children progress into the concrete operational stage, they are better able to
14 understand abstract principles; however, they continue to be more comfortable with concrete
15 ideas (Piaget, 1952; Slater & Bremner, 2017). Children can draw on their previous
16 experiences to produce a general principle, thus their ability to identify areas for
17 improvement based on previous experiences increases (Horn, 2004; Kipp, 2018), which
18 provides scope for adopting PST. Using imagery as an example, a child can draw on their
19 long-term memory to imagine a desired performance or outcome. The teaching of
20 psychological strategies to children will be easier if they are explicitly linked to situations
21 they have already encountered and draw on tangible concepts. Older children within this
22 stage will have a better understanding of their own feelings and how they relate to others
23 compared to those in the earlier stage. They will also have a better understanding that their
24 behaviours can have consequences for others and that others may not share their feelings and

1 thoughts (Piaget, 1952). As such, they will increasingly understand why they may need to
2 change or adapt their behaviours or thinking to help their teammates.

3 As children move into later childhood, the structure and content of their self-
4 perception system begins to change as they can more easily distinguish between their abilities
5 in different sub-domains (e.g., physical and academic competence; Harter, 1999). Children
6 begin to understand that they might be successful in sport but less successful at school, which
7 can be confusing for them. Children often use parent feedback and the outcome of
8 competitions to judge physical competence, but also increasingly compare sources of
9 information to gain more accurate perceptions of sporting ability (Kipp, 2018). Moreover, as
10 children move towards adolescence, they will increasingly be able to distinguish task
11 difficulty from their personal success and effort. They begin to develop a norm-referenced
12 view so that if only a few children complete a task it is difficult and there are some tasks that
13 only a few children complete (Horn, 2004). Children who complete the more difficult tasks
14 are understood to have a higher level of ability; however, children may not know if it is task
15 difficulty or ability that changes the outcome and may still perceive that more effort will aid
16 success in both skill and luck-based activities. As children's understanding of ability changes,
17 access to PST can play an important role in mitigating possible detrimental consequences.

18 Despite children's less developed cognitive capabilities, evidence suggests (albeit a
19 very limited number of studies) that children can benefit from psychological skill use (e.g.,
20 Haddad & Tremayne, 2009; Meggs & Chang, 2019; Munroe-Chandler et al., 2012). Of this
21 literature, one of the more common strategies considered is self-talk, which has been
22 suggested as particularly useful to develop in pre-adolescent athletes (Aghdasi & Touba,
23 2012; Meggs & Chan, 2019; Ming & Martin, 1996). The ability to engage in self-talk
24 develops at an early age; typically, children begin talking to themselves between the ages of
25 two and three years of age, although the internalisation of their self-directed talk is commonly

1 around the age of five (Vygotsky, 1962). Aghdasi and Touba (2012) examined the effects of
2 instructional self-talk on students aged 9-11 years and 15-17 years in a novel dart-throwing
3 task and found that it facilitated the acquisition, retention, and transfer of dart throwing in
4 both age groups. Importantly, when considering self-talk, practitioners working with children
5 should be aware that one of the uses of self-talk, that of emotional regulation, only becomes
6 viable when a child's verbal ability develops sufficiently during the transition from childhood
7 to adolescence (Baker et al., 2019). Consequently, practitioners should be clear about the goal
8 of a self-talk intervention in relation to an athlete's age.

9 Beyond self-talk, there is also a suggestion that imagery may be a psychological
10 strategy that can be taught to children. Between the ages of 6 and 11 years, children develop
11 an ability to internally represent movement as well as other information which is the
12 foundation of imagery (Spruijt et al., 2015). Young athletes from 7 years of age report using
13 the five main functions of imagery: Cognitive specific (CS), cognitive general (CG),
14 motivational specific (MS), motivational general-arousal (MG-A), and motivational general-
15 mastery (MG-M); however, children tend to use imagery more for motivational rather than
16 cognitive reasons, with MG-M and MS imagery the most frequently used and CG imagery
17 the least (Hall et al., 2009). Imagery interventions with young athletes have also been
18 successful in increasing imagery use (Munroe-Chandler et al., 2012), efficacy beliefs
19 (Munroe-Chandler & Hall, 2004; O et al., 2014), and performance (Guillot et al. 2013;
20 Munroe-Chandler et al. 2012). Although both CS (Munroe-Chandler et al., 2012) and motor
21 imagery (Guillot et al., 2013) have been shown to improve performance, educating children
22 on the use of all five functions of imagery is likely to achieve a fuller range of benefits.

23 There is also evidence to suggest that older children may benefit from engaging in
24 goal setting through increased intrinsic motivation (Kolovelonis et al., 2010) and improved
25 performance (Meggs & Chen, 2019). For instance, Meggs and Chen (2019) reported a

1 moderately beneficial effect of goal setting on swimming performance compared with a
2 control group among young swimmers ($M_{age} = 10.8$ years). Similarly, relaxation (often used
3 as part of multi-model interventions targeting stress management, performance, and recovery
4 outcomes) has been identified as beneficial for older children/young adolescents (10.2-12.4
5 years; see Wrisberg & Anshel, 1989). Performance improvements in young performers (M_{age}
6 = 10.6 years) have also been noted via the use of relaxation techniques such as centring
7 (Haddad & Tremayne, 2009). Finally, self-modelling interventions have been found to
8 facilitate the learning of a trampoline routine in novice children ($M_{age} = 10.2$ years; Ste-Marie
9 et al., 2011a); however, no such benefits have been reported for self-observation (i.e., the
10 athlete watching his/herself performing at their current level) in children learning to swim
11 ($M_{age} = 8.3$ years; Clark & Ste-Marie, 2007).

12 In drawing together the limited PST literature available pertaining to children,
13 combined with an understanding of developmental psychology, it is clear that a range of
14 psychological strategies (i.e., goal setting, imagery, relaxation, self-talk) can benefit children
15 and we would suggest that it may be a useful introduction to sport psychology; however, care
16 must be taken to ensure that delivery is appropriately tailored. For instance, clear, tangible
17 examples drawing on children's previous (and likely limited) experiences should be used to
18 convey different psychological strategies. The number of strategies taught should also be
19 limited in number and will benefit from being revisited regularly. Like any physical skill,
20 children need opportunities to apply and further develop their psychological skills in practice
21 and competition. Moreover, the focus of PST should be on supporting children to maintain
22 effort and focus on skill learning and improvement. Delivery should also recognise the
23 different experiences of children as well as the role parents can play in enhancing
24 effectiveness through reinforcing key messages.

25 **PST with Early Adolescents (12-15 years)**

1 As young athletes enter adolescence, they are navigating complex athletic,
2 psychological, psychosocial, and academic transitions (Wylleman & Rosier, 2016). From a
3 cognitive perspective, they are now able to think about abstract concepts (Piaget, 1952) and
4 consequently the teaching of psychological strategies to early adolescent athletes can
5 incorporate different scenarios and outcomes, including those that athletes are yet to
6 experience. At this age, athletes will also progress from trial-and-error as their means of
7 solving problems to being able to solve problems in logical and methodical ways (Shaffer &
8 Kipp, 2013). When doing so, they will draw on pre-defined knowledge structures formed
9 through prior experiences and make informed decisions about the best possible option(s) to
10 navigate any challenges placed upon them. As such, when teaching psychological strategies,
11 it is important to reinforce existing knowledge structures, by devising activities around prior
12 knowledge and adopting pedagogical approaches that promote questioning and dialogue.

13 Typically, adolescent athletes will be in the associative stage of learning for their
14 sport, meaning they are progressing from focusing on ‘what to do’ to ‘how to do it’ in
15 different situations with varying constraints (Schmidt & Lee, 2005). This means their
16 performance is likely to become more consistent and controlled, and they will be focusing on
17 the adaptation of relevant skills rather than understanding the skills (Furley & Wood, 2016).
18 Consequently, early adolescents will be less focused on fundamental movements and more
19 interested in refining role-specific skills, providing an ideal basis for PST.

20 Adolescents will also have the capacity to evaluate their abilities in different contexts
21 based on a range of sources of information (Harter, 1999). In sport, adolescents will typically
22 base these self-evaluations on *internal information* such as skill improvement and perceived
23 effort, *competitive outcomes*, and *evaluative feedback* from spectators, parents, coaches, and
24 peers (Horn, 2004). As adolescents can fully differentiate between effort and ability, it is
25 expected they will shift from judging competence based on task mastery and parent feedback

1 to focusing on peer comparison and evaluation (Vealey et al., 2017). Although this can be
2 mitigated by intentionally creating task-orientated environments, group delivery of PST could
3 lead to unwanted social comparisons, potentially detracting from any intended outcomes and
4 causing conflicts. Such conflicts can help athletes learn about other people's point of view
5 and develop their problem-solving skills (Smith & Paoli, 2017), but care will need to be taken
6 in managing them.

7 Moreover, from a social-psychological perspective, peers and friendships are
8 increasingly important at this age (Smith et al., 2012). These relationships are highly valued
9 because they typically provide early adolescents with security, validation of worth, and
10 facilitate social adjustment (Kipp, 2018). As such, the teaching of psychological skills to
11 early adolescents can benefit from drawing on close relationships between peers, while
12 delivering training to friendship dyads could mitigate the possible negative outcomes
13 associated with peer comparisons.

14 The current youth sport literature base appears to lend support to the utilisation of
15 single-strategy PST interventions with this age group (e.g., Hatzigeordis et al., 2009; Liu et
16 al. 2012; Post et al., 2012). Imagery is one of the most cited psychological intervention
17 methods in sport, and this pattern is mirrored in the basic PST literature with early adolescent
18 athletes. Early adolescents have used imagery to support their physical and mental
19 preparation as well as to overcome fear of injury (Chase et al., 2005). However, to date, most
20 studies have investigated changes in sport performance or skill execution, demonstrating
21 improved movement outcomes for different sports and skills after imagery interventions (e.g.,
22 Garza & Feltz, 1998; Guillot et al., 2012; Norouzi et al., 2019; O et al., 2020; Post et al.,
23 2012). For example, Garza and Feltz (1998) showed improved jumps and spin performance
24 in competitive early adolescent figure skaters ($M_{age} = 12.37$ years), and Post et al. (2012)
25 found that three out of four competitive adolescent swimmers ($M_{age} = 15.5$ years) were able to

1 significantly improve their 1000-yard swim times after a 3-week imagery intervention.
2 Despite the reasonable volume of support for the efficacy of imagery interventions some
3 studies also report a lack of effect (e.g., Bjorkstrand & Jern, 2013; Munroe-Chandler et al.
4 2005). In a study with elite female early adolescent soccer players ($M_{age} = 12.50$ years), a CG
5 imagery intervention did not improve the learning of soccer routines/strategies (Munroe-
6 Chandler et al., 2005). Furthermore, a large-scale experiment by Munroe-Chandler et al.
7 (2012) found that early adolescent soccer players (aged 11-12 and 13-14 years) did not
8 experience speed or accuracy benefits for a soccer task after engaging with a cognitive-
9 specific imagery intervention, but children aged 7-8 years did show improvements post-
10 intervention.

11 Beyond imagery, in a large-scale multi-study experiment with male soccer players
12 ($M_{age} = 13.56$ years), Theodorakis et al. (2000) reported that instructional self-talk led to
13 improved fine motor skill performance for a soccer accuracy test and badminton service test,
14 whereas both instructional and motivational self-talk resulted in improved performance for
15 gross motor skills (i.e., a sit-up test and knee extension task). Furthermore, research has
16 shown that training sessions incorporating motivational self-talk improved competitive early
17 adolescent tennis players' ($M_{ages} = 13.26$ and 13.47 years) forehand execution when
18 compared to control training conditions (Hatzigeordis et al., 2008; Hatzigeordis et al., 2009).
19 Therefore, self-talk preferences and subsequent effectiveness may be sport- and task-specific,
20 suggesting that contextual information should be incorporated into the intervention content
21 when researching and practising self-talk with early adolescents (Hatzigeorgiadis et al.,
22 2014).

23 Research on goal setting in early adolescent athletes has typically adopted
24 experimental designs that combine sporting tasks/performance measures (Pierce & Burton,
25 1998) with psychological outcomes such as motivation (Bieleke et al., 2019) and self-

1 regulation (Liu et al., 2012). For example, Liu et al. (2012) found that early adolescent female
2 table tennis players ($M_{age} = 12.9$ years) showed improvements in self-regulatory processes
3 and subsequent service performance after an 8-week goal setting intervention that
4 incorporated goals that randomly varied in terms of difficulty across the intervention period.
5 In addition, Lane and Streeter (2003) focused on the difficulty of goals (i.e., easy, difficult,
6 unrealistic) in an adolescent sample ($M_{age} = 15.4$ years) and found that basketball-shooting
7 performance improved regardless of the difficulty of the goal. Importantly for practitioners,
8 they found that irrespective of the perceived difficulty of the goal, participants reported a
9 similar 'intended effort'. It was concluded that the intended effort, not the difficulty of the
10 performance goals was the important factor in explaining any performance improvements.

11 For early adolescent athletes, research has predominantly employed relaxation
12 alongside other strategies as a component of a multi-modal intervention targeting stress
13 management, performance, and recovery outcomes (see Ong & Griva, 2017). The majority of
14 studies examining the independent effects of relaxation on these outcomes in early adolescent
15 athletes have used Progressive Muscular Relaxation (PMR). PMR interventions have led to
16 reductions in competitive state anxiety (Bagherpour et al., 2012) and improved mood
17 (Hashim et al., 2011). In addition, performance improvements in early adolescents have also
18 been noted via the use of other relaxation techniques such as biofeedback (Bar-Eli et al.,
19 2002), centring (Terry et al., 1995), and brief yoga (Donohue et al., 2006). Furthermore, there
20 is some initial evidence to suggest that mindfulness-based interventions can lead to improved
21 performances in golf (Bernier et al., 2009), figure skating (Bernier et al., 2014), and
22 springboard diving (Schwanhausser, 2009).

23 A comparatively small body of literature (e.g., Law & Ste-Marie, 2005; Ste-Marie et
24 al., 2011b) has explored alternative psychological strategies with early adolescent athletes,
25 with interventions incorporating technology to present video footage or visual stimuli

1 providing the most popular avenue for research with this age group. Action observation has
2 been recommended as a viable alternative intervention for learning and performance
3 enhancement in youth sport. Self-modelling is one form of action observation intervention
4 that displays the athlete's best performance of a skill/task, and this has been found to benefit
5 female early adolescent gymnasts' ($M_{age} = 12.18$ years) competitive beam performance across
6 a season (Ste-Marie et al., 2011b); however, no such benefits have been reported for self-
7 observation in competitive female early adolescent figure skaters' ($M_{age} = 13.4$ years)
8 performance of jump movements (Law & Ste-Marie, 2005). In terms of more technologically
9 advanced approaches to training vision and decision-making processes in early adolescent
10 athletes, Ehmann et al. (2022) showed that a five-week football-specific 360° multiple object
11 tracking training intervention improved perceptual-cognitive task performance but not
12 soccer-specific performance in early adolescent soccer players. Similarly, Schwab and
13 Memmert (2012) found that a 6-week DynamicEye® training program improved the visual
14 abilities of 12-16-year-old male early adolescent field hockey players.

15 In summary, key developmental changes that warrant consideration when adopting
16 PST with early adolescent athletes include their new-found ability to think more abstractly
17 and use more deductive and systematic problem-solving strategies when overcoming
18 challenges, and the importance of social relationships with peers as both a source of
19 performance information, security, and psychological well-being. Whilst the collective
20 evidence suggests individual PST strategies (i.e., goal setting, imagery, mindfulness,
21 relaxation, self-modelling, and self-talk) can be used with athletes during early adolescence,
22 most studies are dated and have delivered interventions in fixed ways using controlled
23 experimental designs, meaning the positive effects demonstrated in these studies may not
24 transfer when interventions are adapted for use in current dynamic real-world settings. It is
25 important that practitioners align their use of PST at this age with the key issues and

1 challenges early adolescents are experiencing. For example, incorporating more abstract and
2 innovative approaches during PST will allow the athletes to reinforce the development of
3 implicit strategies, foster creativity, and ideally facilitate PST use and adherence in this age
4 group.

5 **PST with Mid-to-Late Adolescents (16-18 years)**

6 By the time athletes enter mid-to-late adolescence, they will be able to understand
7 abstract concepts and engage in adult-like role-taking as they can comprehend other
8 individuals' perspectives (Piaget, 1952). They are likely to be less reliant upon peer
9 comparison for competency information as this will be integrated from past experiences and
10 their ability to self-reference is enhanced by this stage (Vealey et al., 2017). This is important
11 in the context of PST in sport as mid-to-late adolescents will be more focused on the
12 development of process- and performance-oriented skills rather than outcomes and social
13 comparisons; however, this is a complex time for young people as social status continues to
14 be important, both in terms of peer approval but also as a motivator for continued
15 involvement in sport (Smith & Paoli, 2017). At this stage of development, athletes' cognitive
16 development is more similar to adults, they have undergone unique neurocognitive
17 development which means their executive functions have reached adult levels of maturation.
18 In addition, they are also likely to be operating in the autonomous stage of learning where
19 skill execution is automatic and requires little conscious thought (Schmidt & Lee, 2005).
20 This, alongside more finely tuned proprioceptive senses, enables athletes to understand
21 complex training instruction, become more proficient at self-correction, and be more readily
22 able to identify (and respond to) correct and incorrect techniques (Kushner et al., 2015).

23 Accordingly, there may be the temptation to treat adolescents as adults, however, they
24 continue to face a range of developmental transitions (Wylleman & Rosier, 2016). During
25 this period, adolescents also encounter several major life transitions, such as moving from

1 secondary school to university, work, or full-time training, or in some cases, a combination of
2 all three (Wylleman & Rosier, 2016). While these transitions are taking place, adolescents
3 will be experiencing a range of emotional changes (Crocker et al., 2017) as they distance
4 themselves from their parents, become more autonomous, and start to develop their own
5 identities (Brewer et al., 2017). A time characterised by change means that the ability to
6 control emotions may fluctuate within and between individuals as they appraise the
7 unfamiliar demands encountered and attempt to implement the coping strategies they have
8 developed (Crocker et al., 2017). Thus, the adoption of PST with mid-to-late adolescent
9 athletes is timely, as this can continue to diversify the techniques they draw from when trying
10 to cope with the ever-increasing stressors they experience alongside sport participation.

11 Given the majority of SPPs' clients are in the mid-to-late adolescence stage of
12 development, there is a clear need for practitioners to have an in-depth understanding of their
13 clients in this age range (Fedderison & Ryom, 2022). Although practitioners may be tempted
14 to inform their practice and engagement with PST from the literature involving young adults,
15 they should be mindful of the nuanced differences between mid-to-late adolescents and adults
16 and focus on the research that has specifically targeted this age group.

17 Similar to previous developmental stages, there is some evidence to suggest that
18 imagery interventions can improve mid-to-late adolescents' performances (e.g., Dana &
19 Gozalzadeh, 2017; Post et al., 2010; Fortes et al., 2018). For example, Post and colleagues
20 (2010) examined the influence of a pre-game imagery intervention on mid-to-late
21 adolescents' (*Mean* 16.8 years) free throw performance over the course of a season. Findings
22 revealed a significantly higher than expected number of free throws made in games preceded
23 by the intervention. Similarly, Fortes et al. (2018) evaluated the effectiveness of an 8-week
24 CG imagery intervention on 16-year-old volleyball players' decision-making with findings
25 indicating a moderate positive effect on performance. However, other studies have shown no

1 impact on freestyle swimming turn speed (Casby & Moran, 1998) or tennis returning
2 performance (i.e., Coelho et al., 2007). Taking this into consideration, it is important to note
3 that research exploring the characteristics of imagery use with mid-to-late adolescents has
4 shown that they use MG-M imagery most frequently and MG-A less frequently (Parker &
5 Lovell, 2009).

6 In addition to interventions focused on imagery, studies with mid-to-late adolescents
7 often use relaxation as a component of a multi-modal intervention (e.g., Wikman et al.,
8 2016). However, performance improvements in mid-to-late adolescents have been noted via
9 the use of relaxation techniques such as PMR (e.g., Lanning & Hisanaga, 1983) and
10 biofeedback (Bar-Eli & Blumenstein, 2004). Furthermore, when compared to imagery, PMR
11 has led to greater reductions in competitive state anxiety and attention (Owen & Lanning,
12 1982).

13 A relatively small body of research has examined the role of both self-talk and goal
14 setting with mid-to-late adolescents (see Aghdasi & Touba, 2012; Gill, 2013). In one of the
15 only studies to date, Gill (2013) evaluated the use of goal setting on the basketball
16 performance of players aged between 16-20 years old (Mage = 16.69 years). Findings
17 suggested setting goals benefited performers in both training and competition, supported the
18 use of goal setting in an ecologically valid setting, and concluded that goal setting can be
19 used to increase motivation levels and enhance performance. Despite limited research within
20 this developmental stage, it appears that practitioners often assume enhanced performance
21 (process → mastery), motivation (process → intrinsic motivation), and well-being when
22 using goal setting. However, even with a wealth of literature on the use of goal setting and
23 self-talk with adult athletes, there is limited empirical evidence for its use with mid-to-late
24 adolescents per se.

1 Moving beyond the more conventional psychological strategies, music-based
2 interventions, which in the age of smartphones can be easily translated into the training and
3 competition environment, have demonstrated beneficial effects on affective valence, physical
4 performance, perceived exertion, and oxygen consumption in sport and exercise settings (e.g.,
5 Bishop et al., 2007; Bishop et al., 2009; Miller & Donohue, 2003). These interventions have
6 shown initial promise as a performance-enhancement technique for mid-to-late adolescents in
7 a variety of sports. For instance, music has been shown to improve running time trial
8 performance in high school long-distance runners ($M_{age} = 16.2$ years) compared to control
9 conditions (Miller & Donohue, 2003). Young tennis players ($M_{age} = 18.4$ years) have also
10 reported using music to manage pre-competition emotions by improving mood, increasing
11 arousal, and facilitating imagery (Bishop et al., 2007). In a follow-up study, Bishop et al.
12 (2009) suggested that higher music intensity can increase arousal and improve choice
13 reaction times in young performers ($M_{age} = 17.7$ years). Furthermore, Eliakim et al. (2007)
14 demonstrated an increase in peak anaerobic power in youth and adolescent athletes ($M_{age} =$
15 16.4 years) following a music intervention. These initial findings suggest that music is a
16 simple, low-cost, and comparatively effective way of enhancing athletes' psychological
17 preparation for competition and competitive performance.

18 In summary, when adopting PST with mid-to-late adolescent athletes, practitioners
19 should be mindful that they will now be able to understand abstract concepts and comprehend
20 other individuals' perspectives. Although social relationships with peers will continue to be
21 important, mid-to-late adolescent athletes are likely to be more able to self-reference and
22 reflect on their own performances. Accordingly, the use of PST that is task or goal-orientated
23 can be used with some confidence when focused on clear athlete-focused goals (e.g., to
24 improve running time, reduce state anxiety). Nevertheless, practitioners should ensure that
25 their practice is informed by evidence from the age-specific literature rather than assuming

1 the transferability of adult-focused PST research to this age demographic. Currently, the
2 literature suggests several psychological strategies as being appropriate for this age group,
3 specifically imagery, relaxation, and music.

4 **Considerations for Optimal Service Provision in Youth Sport**

5 The experimental and quasi-experimental studies outlined above offer practitioners
6 important scientific insights into PST-related considerations at different stages of young
7 athletes' development. Such intervention studies, however, are often imposed on participants
8 for the purpose of scientific discovery as opposed to being reflective of how the natural youth
9 sport environment engages with the process of PST. Such matters, including who actually
10 delivers PST-related work with young people, are likely to influence intervention
11 effectiveness in the real world, particularly where key aspects of the traditional consultancy
12 process in youth sport (e.g., professional boundaries and philosophy, building rapport or
13 relationships, assessment with young athletes; see Visek et al., 2009) are not considered
14 within constrained scientific investigations. Indeed, Henriksen and colleagues (2014)
15 suggested that many intervention studies are far removed from the field-based realities of
16 youth sport practice (e.g., understanding contextual challenges and engaging with key
17 stakeholders). As such, beyond empirical PST interventions with young athletes, it is
18 important to consider the growing body of literature representing: (a) the promotion of 'how
19 to' frameworks tailored to working in youth sport (e.g., Visek et al., 2009; Blom et al., 2013);
20 and (b) practitioners' accounts and experiences of working with young athletes (e.g., Foster et
21 al., 2016; Henriksen et al., 2014; Howells, 2017). For example, the Youth Sport Consultancy
22 Model (YSCM; Visek et al., 2009) details six phases of consultation when working with
23 young athletes and teams: (a) practitioner considerations (e.g., boundaries and philosophical
24 approach); (b) initiating contact; (c) doing sport psychology (e.g., confidentiality, assessment,
25 game and practice observation, selecting, implementing and processing skills, and time-outs

1 in sport psychology); (d) wrapping up the season and consultation; (e) assessing the
2 consulting relationship; and (f) termination and continuation (Vissek et al., 2009). Similarly,
3 Blom and colleagues (2013) present the concept of the Youth Sport Psychology Consultation
4 Triangle (YSPCT) to assist practitioners in navigating the uniqueness of multiple, dyadic
5 relationships in youth sport (i.e., young athlete, practitioner, coach, and parents) with a focus
6 on role knowledge and role clarity for each stakeholder to ensure the overall well-being and
7 interests of young athletes. The contextual ‘craft knowledge’ of experienced practitioners
8 comes from several personal accounts of working directly in this setting (see Foster et al.,
9 2016; Henriksen et al., 2014; Howells, 2017). Such accounts illustrate practitioner attention
10 to holistic skills that include, but also go beyond, sport-specific psychological strategies to
11 foster the long-term development of young athletes, the integration of simple techniques into
12 daily practice environments, and engagement of coaches, family, and peers as much as
13 possible. How SPPs ‘reach’ young athletes and build rapport is a critical process as it
14 precedes any actual application of (and adherence to) psychological strategies from which we
15 want young performers to benefit.

16 Most recently, Thrower, Barker et al. (2023) gathered insights from experienced SPPs
17 working with young athletes in the UK, and addressed how psychological strategies and
18 techniques are delivered within this population. Firstly, their findings illustrated how
19 practitioners adapted their delivery of PST concepts to young athletes in creative and age-
20 appropriate ways through the use of physical props, scenarios, biofeedback, or YouTube
21 footage of sport to encourage engagement, normalise psychology and raise their awareness of
22 psychological qualities in athlete role models. Helping young athletes with an awareness that
23 mental strategies are ‘tools’, ‘powers’ or ‘weapons’ against the sport’s demands aligns with
24 how children might see the superhero and the villain in online computer games. As
25 conversation starters, it can open the door for them to share the thoughts and feelings they

1 currently experience in their sport and feel better understood (Foster et al., 2016). Secondly,
2 practitioners reinforced the criticality of multiple stakeholders being involved in PST-related
3 initiatives and the effectiveness of indirect interventions through coaches and parents, as
4 opposed to direct athlete-practitioner work. Practitioner participants considered who was
5 ‘best positioned’ to support an athlete with respect to their progression in psychological skills
6 and reinforced how the effectiveness of this depended upon a PST-educated stakeholder
7 environment.

8 Overall, these findings reinforced how PST with young people should be integrated
9 into day-to-day athletic practice as opposed to merely off-field workshops and classroom
10 settings. This depended greatly on the integration, buy-in and education of coaches receiving
11 support and mentoring from practitioners around session design that incorporated
12 psychological strategies (see Harwood et al., 2015; Foster et al., 2016). Similarly, the
13 consistency of parents being on the same page as the coaching and support team, reinforcing
14 practitioner messages (e.g., at home, during car journeys) comes through this research as vital
15 for creating a coherent climate around the young person. As Thrower and colleagues note:
16 “Future research is also needed to ‘close the gap’ between research and practice and explore
17 the integrative processes and outcomes of a child-centred, coach-led, and parent-supported
18 system that is focused on specific psychological skill outcomes over time” (p.18). PST with
19 young athletes is not a practitioner-alone endeavour and neophyte practitioners need to
20 consider the practical and contextual implications of service provision in the competitive
21 youth sport environment.

22 **Recommendations for Youth Sport Organizations, Training / Accrediting Bodies,**
23 **Researchers, and Practitioners**

24 Drawing upon our review of the literature exploring the effectiveness of PST
25 interventions across developmental stages, practitioners’ experiences of integrating PST-

1 related services in youth sport settings, as well as our own applied experience, below we
2 provide 10 recommendations (not presented in order of importance) directed towards youth
3 sport organisations, training and accrediting bodies, researchers, and practitioners. These
4 recommendations illustrate joint responsibility and provide a pathway regarding how to
5 accelerate the development and training of practitioners within the UK and move closer
6 towards evidence-based guidelines for PST in youth sport.

7 **Youth Sport Organisations**

- 8 1. Youth sport governing bodies should support (i.e., accessibility and financial support) the
9 development of research that informs evidence-based PST within their specific sport.
- 10 2. Youth sport governing bodies have a responsibility to utilise the evidence-base and
11 provide access to educational resources on PST (e.g., Thrower, Shanmuganathan-Felton
12 et al., 2023) to support all young peoples' performance, long-term development, and well-
13 being.
- 14 3. Youth sport organisations and clubs have a 'duty of care' to ensure all young athletes on
15 high-performance pathways have access to Health Care Professions Council (HCPC)
16 registered Sport & Exercise Psychologist (or those on HCPC-approved postgraduate
17 supervised training routes¹) to manage the demands they experience in increasingly
18 professionalised youth sport environments.

19 **Training and Accrediting Bodies**

- 20 4. University lecturers/teachers should place greater emphasis on developmental psychology
21 within both undergraduate and postgraduate sport and exercise psychology programme
22 content.
- 23 5. Accrediting bodies should provide more formalised and dedicated training opportunities
24 focused on PST with young athletes (e.g., qualifications, placements) and mandate the

1 inclusion of one assessment (i.e., case study) with young athletes as part of regulated
2 independent training routes (e.g., BPS Stage 2).

3 **Researchers**

4 6. Applied research is needed to identify which strategies are most effective at optimising
5 young athletes' performance to inform age, stage-appropriate, and sport-specific PST
6 guidelines for practitioners working with young athletes.

7 7. Applied researchers should explore how PST intervention efficacy, and long-term
8 evaluation, are determined by the context and method of delivery to narrow the gap
9 between research and practice.

10 **Practitioners**

11 8. Practitioners should only deliver PST to young athletes following prior assessment (i.e.,
12 case formulation) and interventions should match the known demands of the sport, the
13 young athlete's developmental stage, and their unique wants and/or needs.

14 9. PST in youth sport should be simple, adaptable, and where possible integrated within a
15 young athlete's training and competition context. Practitioners should also whenever
16 possible work collaboratively with coaches and/or parents (indirectly or directly) to elicit
17 the greatest effects.

18 10. Practitioners should provide 'practice-based evidence' (e.g., case reports) to enhance
19 knowledge in this area and inform practitioner training and effectiveness.

20 **Note**

21 **1.** There are two sport and exercise psychology independent postgraduate supervised
22 training routes in the UK which make practitioners eligible to apply for registration with
23 the Health Care Professions Council (HCPC): (1) BPS Qualification in Sport & Exercise
24 Psychology (QSEP); and (2) British Association of Sport and Exercise Science (BASES)
25 Sport and Exercise Psychology Accreditation Route (SEPAR). In addition, practitioners

1 who complete an HCPC-approved Professional Doctorate in Sport and Exercise
2 Psychology are also eligible to apply for HCPC registration.

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