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SSG to match play

Can match play kicking and physical performance outcomes be replicated in an Australian
Football small-sided game?

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Keywords

Small-sided game, Australian Football, Kicking, Technical, Physical, SSG

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Abstract

Introduction: This study investigated if the technical and physical match performance outcomes can be replicated in a 5v6 small-sided game (SSG). **Methods:** Sixteen youth Australian Football (AF) players (mean \pm SD; age 16.5 ± 1.0 years, height 179.1 ± 8.0 cm, weight 69.5 ± 9.5 kg) were randomly recruited. Participants were assessed in the SSG during the week prior to the assessed match play. The technical variables assessed were kicking proficiency, number of kicks executed and the amount of time each player had with the ball before kick execution (i.e., under 2s, 2-4s, over 4s). The physical variables assessed were odometer, meters travelled per minute, maximum velocity and percentage of high intensity running. **Results:** The results suggest kicking proficiency, the number of kicks executed, meters travelled per minute and percentage of high intensity running were all higher in the SSG than during match play. Furthermore, the SSG had less technical variability in comparison to match play. During match play, players had less time affordance to execute a kick and achieved higher maximum running velocities than during the SSG. **Conclusion:** This research provides coaches with greater insights into the technical and physical performance demands of match play.

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Can match play kicking and physical performance outcomes be replicated in an Australian Football small-sided game?

Australian Football (AF) is an invasion team sport where the objective of the game is to score the most points through goal kicking (Gray & Jenkins, 2010). For successful performance, players are required to possess high levels of both technical kicking proficiency (Robertson, Back, & Bartlett, 2015; Sullivan et al., 2014) and physiological capacities (Gray & Jenkins, 2010). Researchers have investigated these attributes to understand how they differ in youth AF players across different age groups (i.e., U10 to U16) and skill groups (club to elite). For example, physical (e.g., maximal speed) and technical capabilities (e.g., kicking proficiency) have been shown to increase as age and skill level increase (Bonney, Berry, Ball, & Larkin, 2019b; Gastin, Tangalos, Torres, & Robertson, 2017). To increase the transfer in these performance outcome measures (e.g., kicking proficiency), the training environment needs to be representative of the functional perception-action couplings observed in match play (Pinder, Davids, Renshaw, & Araujo, 2011). Specifically, the skills performed during training must be produced under similar constraints (e.g., time pressure) as match play (Ireland et al., 2019). One possible modality for achieving this is the use of small sided games (SSG) (Bonney, Berry, Ball, & Larkin, 2019a).

Small-sided games (SSGs) are modified games played on reduced grounds, often using adapted rules and involving a smaller number of players than traditional competitive games (Hill-Haas, Dawson, Impellizzeri, & Coutts, 2011). The manipulation of key task constraints to develop movement patterns and decision-making behaviours is the basis of nonlinear pedagogy (Chow et al., 2007). The constraints-led approach has evolved from nonlinear pedagogy where the participant's environment is created by coaches identifying and modifying interacting constraints to facilitate the emergence of perception-action couplings (Renshaw et

1 al., 2016). This approach is athlete-centred and empowers individuals to become active learners
2 via a more hands-off approach to learning (Renshaw, Chow, Davids, & Hammond, 2010).
3 Researchers have suggested SSGs are an effective methodological tool for enhancing player
4 tactical behaviours (Chatzopoulos, Drakou, Kotzamanidou, & Tsorbatzoudis, 2006; Davids,
5 Araujo, Correia, & Vilar, 2013a; Renshaw, et al., 2010), decision making (O'Connor, Larkin,
6 & Williams, 2017) and skill execution (Klusemann, Pyne, Foster, & Drinkwater, 2012).

7 To achieve the desired SSG outcome coaches manipulate the task constraint to produce
8 particular player responses. For example, in youth soccer, researchers discovered by
9 manipulating the game rules (i.e., teams having to perform at least four consecutive passes
10 before an attempt at goal could be made), intended outcomes (i.e., number of players involved
11 in the offensive sequence) can be influenced and more specific behaviours can be developed
12 leading to an increased transfer to match play (Almeida, Ferreira, & Volossovitch, 2012). In
13 Australian Football (AF) SSG rules and player numbers were manipulated to impact the
14 amount of agility maneuverers performed by the athletes (Davies, Young, Farrow, & Bahnert,
15 2013). Further, Fleay, Joyce, Banyard, and Woods (2018) found by having smaller playing
16 areas in a handballing SSG (i.e., 600m²) there was an increase in tackles, whilst the larger
17 playing area (i.e., 2,000m²) generated greater physical outputs. As such, manipulating the space
18 players can utilise and the number of players involved in the task can target specific behaviours
19 and/or outputs.

20 A concern with current AF assessments of skill performance is they are largely completed
21 in isolation from the context they are performed in (for an example read Cripps, Hopper, and
22 Joyce (2015)) and do not assess the range of skills (i.e., kicks) typically performed within the
23 performance environment (e.g., performing a kick under physical pressure). In comparison,
24 SSGs integrate key demands of the performance environment (i.e., technical, tactical,
25 physiological, psychological) within the one activity (Davids, Araujo, Correia, & Vilar, 2013b)

1 and have been suggested as a potential method to assess performance in a more representative
2 setting compared to isolated technical assessments (Bonney, et al., 2019a). Small-sided games
3 afford players with more skill opportunities, under similar demands to match play, within a
4 controlled match play environment (Joo, Hwang-Bo, & Jee, 2016). These affordances may then
5 provide coaches with greater opportunities to assess player performance (e.g., kicking
6 proficiency) and determine match play potential.

7 While SSGs can provide opportunities for players to develop match play understandings
8 and problem solving abilities (Light, Harvey, & Mouchet, 2014), there is still limited
9 understanding of how close these skills replicate the performance demands of AF match play.
10 In particular, the impact of player numbers in relation to technical (i.e., kicking) and physical
11 (e.g., meters travelled per minute) performance outcomes; and if the performance is indicative
12 of match play performance. The results from such a study would be of particular interest to AF
13 youth coaches when planning their training programs and monitoring the development of their
14 players. For example, researchers have implemented SSGs as a way of predicting match play
15 disposal proficiency in AF (Piggott, Muller, Chivers, Cripps, & Hoyne, 2018). Piggott, et al.
16 (2018) investigated whether SSGs could discriminate perceptual-cognitive-motor skill in
17 higher skilled (i.e., state level) and lesser skilled (i.e., amateur level) AF players. The
18 participants played in three SSGs consisting of six attackers and five defenders on a 40x40m
19 grid. The SSGs lasted three minutes in total. Each skill was subjectively scored by a novice
20 coach for decision-making and motor skill execution with each of these variables being
21 combined for a total score. Match play disposal proficiency was provided by a commercial
22 statistical analytics company, Champion Data. A linear mixed model analysis found the mean
23 total scores of the higher skilled players significantly predicted disposal proficiency in match
24 performance. Specifically, a one point increase in total score would result in a 13% increase in
25 match disposal proficiency, although large confidence intervals were noted. A limitation of this

1 construct was the assessment of the attacking players only, and the implementation of a 40m x
2 40m grid. These conditions may not fully represent AF match play conditions because of the
3 lack of functional perception-action couplings (e.g., there were no goal posts, the participants
4 were only required to maintain possession of the ball and the area used was square shape
5 whereas AF is played on an oval shaped ground). Although this size grid does allow a variety
6 of kicks to be performed (i.e., short, medium, long) it does not allow for the range of kicks
7 performed in match play (e.g., goal kicking or kicking out from a behind). Furthermore, an
8 objective measure of skill performance (in addition to subjective coach opinions) may provide
9 a stronger analysis of kicking performance than current methods. For example, a SSG which
10 assesses both attacking and defending players and the range of kicks performed during match
11 play, may provide coaches with further understandings of match play player preparedness from
12 a more integrated performance perspective (i.e., identifying a players ability to not only
13 proficiently kick the ball inside the 50m arc and but also rebound the ball back outside the 50m
14 arc).

15 Therefore, the aim of this study was to compare the difference between the technical and
16 physical demands of a 5v6 AF SSG to match play. The technical variables were kicking
17 proficiency, the number of kicks executed and the amount of time each player had with the ball
18 before the kick was executed. The physical variables assessed were odometer, meters travelled
19 per minute, average maximum velocity and the percentage of high speed running completed.
20 We hypothesise the skill performances of kicking, total number of kicks and the amount of
21 time players have with the ball from 2-4 seconds and above 4 seconds will be higher in the
22 SSG than match play due to the reduced player numbers. We further hypothesise the amount
23 of time players have with the ball below 2 seconds and the physical demands of the SSG will
24 be lower than match play due to the confined space.

1 **Method**

2 **Participants**

3 Sixteen youth AF players (mean \pm SD; age 16.5 ± 1.0 years, height 179.1 ± 8.0 cm,
4 weight 69.5 ± 9.5 kg), were selected to participate in the study. The players were recruited from
5 a local club and were injury free at the time of testing. The study was approved by the
6 university's human research ethics committee.

7 **Procedures**

8 The AF SSG developed by Bonney, Berry, Ball, and Larkin (2019c) was used in the
9 current study. The game involved 11 players (six attacking and five defending) competing
10 within the 50m arc (Figure 1). Players were required to execute a minimum of two kicks before
11 attempting to kicking the ball into a 5m zone where only attacking players, leading for the ball,
12 were allowed. If the pass was unsuccessful the opposition obtained possession and if
13 successful, the attacking team completed another two kicks before a goal could be attempted.
14 To ensure the focus was on kicking, after every handball a kick needed to be executed.
15 Regulation AF rules were imposed (including tackling), with an umpire.

16 In total, 22 players were tested in two separate SSGs at the same testing session.
17 However, due to factors such as injuries, player's not wearing GPS devices, GPS failure and
18 team selection only 16 players in total were assessed. The approximate total area for the 50m
19 arc was 3080m^2 (approximately 280m^2 per player). The set up and procedures were the same
20 as those used in previous AF SSG research (Bonney, et al., 2019c). Previous research has
21 indicated the Australian football small-sided kicking assessment was successful in achieving
22 logical validity (through the assessment of players, coaches and a skill acquisition experts),
23 construct validity (through comparing the effect of skill ability and age on technical and
24 physical performance outcomes) and reliability (ICC \pm 95% CL = $0.82 \pm 0.45 - 0.94$) of AF
25 kicking proficiency (Bonney, et al., 2019c).

1 Prior to the testing session players had experienced the test on a minimum of two
2 occasions. Two days following the completion of the SSG, match performance was assessed.
3 In total, only one testing session and one match play analysis occurred. Both the testing session
4 and the match play analysis occurred at the same ground. Match play occurred on a regulation
5 size AF ground which was oval in shape and approximately 139m in length and 128m in width.
6 There were 18 players on each team competing on the ground (36 players in total) with four
7 players from each team on the interchange bench that could be substituted at any time during
8 the game. The approximate total area for the ground was 13,700m² (approximately 381m² per
9 player). The match was played during the competition period, in the second half of the season.
10 During match play, the players assessed wore the same GPS units as in the SSG.

11 Three cameras were used to record match play actions. One had a camera operator
12 following play from the side line in an elevated position, whilst the other two were in stationary
13 positions (one on the opposite side of the ground, approximately half way, 10m behind the
14 boundary line and the other 10m behind the goal line) ensuring all areas of the ground were
15 recorded.

16 **Data Analysis**

17 Individual player count of kicks and time in possession of the ball were recorded as
18 measures of central tendency. The Catapult Sprint 5.1.7 software was used to download the
19 GPS data. Individual player odometer, meters travelled per minute, maximum velocity and
20 percentage of high intensity running were recorded as measures of central tendency. Video
21 footage from the three cameras were stacked (i.e., having the three camera angles showing on
22 the one screen side-by-side) and coded using SportsCode 10.3.25. Each kick was scored in
23 accordance with previous published AF kicking assessments (Bonney, et al., 2019b). Kicking
24 proficiency percentage was calculated as (total scored achieved / maximum possible score for
25 kicks taken) * 100.

1 The dependent variables measured were kicking proficiency, number of kicks executed,
2 time in possession <2s, between 2-4s and 4+s, odometer, meters travelled per minute,
3 maximum velocity and percentage of high intensity running. The independent variable was
4 playing type. A one-way repeated measure multivariate analysis of variance (MANOVA) was
5 conducted to determine if the technical and physical performance outcomes differed between
6 the SSG and match play. Mean and standard deviation were calculated for each technical and
7 physical parameter (Table 1). Effect sizes (ES) were reported as partial eta squared (η_p^2)
8 (Cohen, 1988; Olejnik & Algina, 2003). Alpha level for significance was set at 0.05. Prior to
9 statistical analysis all assumptions were assessed. For example, the dependent variables were
10 measured at the interval level, the independent variables were categorical, there were no
11 outliers, there was multivariate normality (all dependent variables were assessed using the
12 Shapiro-Wilk test and all were greater than 0.05), a scatterplot matrix was used to ensure a
13 linear relationship was found between the dependent and independent and no multicollinearity
14 was found (variance inflation factor for the variables was 1.00). Statistical analysis was
15 performed using IBM SPSS version 25 (IBM SPSS Statistics for Windows. IBM Corp.,
16 Armonk, NY, USA).

17 **Results**

18 The multivariate result was found to be significant (*Pillai's Trace* = 0.993, $F(9,4) =$
19 60.306 , $p = 0.001$, *partial* $\eta_p^2 = 0.99$), indicating a difference between the SSG and match play
20 technical and physical performance outcomes. All technical (kicking proficiency, number of
21 kicks, time pressure) and physical (odometer, meters travelled per minute, maximum velocity
22 and percentage of high intensity running) scores significantly differed between the SSG and
23 match play (Table 1).

24 *Technical*

1 before kicking execution. The physical variables assessed were odometer, meters travelled per
2 minute, average maximum velocity and the percentage of high speed running completed. The
3 hypothesis of kicking proficiency and the number of kicks being higher in the SSG than during
4 match play was supported. The SSG players were afforded more time to kick the ball than
5 during match play (e.g., the amount of time players had with the ball between 2-4 seconds was
6 higher in the SSG than during match play). The physical demands had mixed results. For
7 example, meters travelled per minute and percentage of high intensity running were higher in
8 the SSG than during match play whilst total meters travelled and maximum velocity were
9 higher in match play than during the SSG.

10 Match play requires players to combine their technical, tactical, physiological and
11 psychological skills under intense pressure (e.g., physical pressure). Executing a kick, with
12 accuracy, under these conditions is difficult which may suggest why match play kicking
13 proficiency was lower compared to the SSG performance. Gastin, et al. (2017) found an
14 increase in match play disposal effectiveness (a combination of both kicking and handballing)
15 as player's age increased from under 10s to under 15s; however, this study did not find this
16 pattern. The results of this study found kicking proficiency to be 50.13%, approximately 2%
17 lower than the under 15 proficiency score reported by Gastin and colleagues (2017). A possible
18 reason for this may have been the different assessment methods used to score disposals. Gastin,
19 et al. (2017) defined a 'disposal' as kicks and handballs whilst in this study only the skill of
20 kicking was assessed. Furthermore, Gastin, et al. (2017) assessed skill effectiveness according
21 to the criteria set out by Young and Pryor (2007). Their definition of effectiveness involved a
22 kick or handball that was received (or should have been received), resulted in possession by a
23 teammate or was put to the team's clear advantage. Whereas this study used a more explicit
24 assessment criteria of kicking proficiency, potentially delivering alternative findings. The
25 difference between scoring systems may highlight the need for a more universal kicking

1 scoring system to be developed so kicking assessments between studies can be compared more
2 accurately.

3 The results also indicated high variability in match play kicking proficiency (i.e., SD =
4 9.52) in comparison to the SSG performance (i.e., SD = 5.19). The low variability found in the
5 SSG was similar to those previously reported (Bennett et al., 2018; Clemente, Sarmento, Costa,
6 Enes, & Lima, 2019). For example, Clemente, et al. (2019) investigated 12 young (7.58 years)
7 novice soccer players in 3v3 and 6v6 SSGs and found, with the exception of shots at goal,
8 technical actions (i.e., conquered balls, received balls, lost balls, attacking balls, neutral balls)
9 had low levels of variability. Similar results were noted by Bennett, et al. (2018) who
10 investigated 73 youth (11-15 years) soccer players. They assessed skill proficiency and
11 reported passes and touches (when a player gains control of the ball following the completion
12 of a pass or the interception of a pass) were the actions with small SDs in comparison to
13 averages. Overall, these results may suggest technical skill performance in SSGs have low
14 variability. The results from this study support this and suggest AF SSG kicking is a relatively
15 stable performance. Coaches may be able to use this information to gain greater insights into
16 individual player kicking performance and assess kicking changes during the season. However,
17 more research on AF SSG kicking variability is recommended to confirm these results.

18 In comparison to SSGs, match play kicking produced higher levels of variability. The
19 high levels of variability may be due to factors such as internal (e.g., experience, technical
20 ability and decision making) and external reasons (e.g., strength of opposition and team tactics)
21 (Kempton, Sullivan, Bilsborough, Cordy, & Coutts, 2015). Previous research has also
22 suggested factors such as physical capacity, match outcome, match locations, time of season
23 and environmental conditions can impact player match performance (Gregson, Drust,
24 Atkinson, & Salvo, 2010; Mohr, Krustup, & Bangsbo, 2003; Rampinini, Coutts, Castagna,
25 Sassi, & Impellizzeri, 2007; Robertson & Joyce, 2018). In AF, match play performance profiles

1 are commonly used to provide reference points for the evaluation of competition. However,
2 these data suggest coaches should be cautious when using match play performance variables
3 to interpret a players match performance because they are sensitive measures with high match
4 variations (Liu, Gomez, Goncalves, & Sampaio, 2016). This finding supports previous research
5 in AF match play where common measures of technical and physical performances were found
6 to show large variations between matches (Kempton, et al., 2015). Moreover, the high
7 variability found in match play kicking behaviours may indicate a potential method to assess
8 individual skill development over time (i.e., a reduction in SD may indicate a stabilisation in
9 the individuals movement solution).

10 The average number of kicks executed in the SSG was higher in comparison to the
11 amount of kicks executed during match play. This result is understandable considering the
12 SSG, in comparison to match play, is performed within a designated area with constraints
13 developed to specifically afford more opportunities for players to kick and receive the ball (e.g.,
14 after every handball a kick must be executed). Previous research has reported similar results.
15 Joo, et al. (2016) found when young soccer players participated in SSGs they had more
16 opportunities to execute their skills in comparison to match play. For coaching purposes, this
17 research may suggest it is possible to create SSGs which provide more opportunities to execute
18 kicks compared to large scale games (O'Connor, Larkin, & Williams, 2018). Additionally, the
19 kicks executed in the SSG are typical of match play actions where players have to interpret
20 their surroundings, make decisions under pressure situations (e.g., time and opposition) and
21 execute the ball with proficiency. For example, after a score in the 5v6 SSG, players were
22 required to execute a range of kicks (e.g., short, long) under physical pressure to take the ball
23 outside the 50m arc (representative of a kick out in AF).

24 Statistical differences were found between the SSG and match play for the time each
25 player had with the ball (i.e., <2 seconds, 2-4 seconds and above 4 seconds). In comparison to

1 match play, players held the ball for a longer period of time in the SSG before executing a kick.
2 During the SSG players maintained possession of the ball between 2-4 seconds and above 4
3 seconds for approximately 56% of the time in comparison to 42% during match play. This is
4 an important consideration when designing representative skill activities for players to
5 participate in. For example, if the goal of the SSG is to replicate match play, SSG constraints
6 could be designed to ensure the ball is kicked in under two seconds over 50% of the time. A
7 possible way of achieving this may be through adding a task constraint such as after one step
8 a player must kick the ball or a defensive overload (however, a defensive overload may also
9 make it difficult for the attacker to obtain possession of the ball). To assist in the task being
10 more representative, both of these constraints require active opponents and teammates who the
11 player must evade and deliver the ball to.

12 All physical demands (i.e., odometer, meters ran per minute, average maximum velocity
13 and percentage of high intensity running) were found to be statistically different between the
14 SSG and match play. Players ran more meters per minute and achieved a higher percentage of
15 running intensity during the SSG in comparison to match play. However, during match play
16 players ran more total meters (odometer) and reached higher maximum velocities. These results
17 were similar to those reported in soccer. For example, Dellal et al. (2012) investigated the
18 effects of rule changes on the technical and physical demands for elite soccer players during
19 three different conditioned 4v4 SSGs (1 ball touch, 2 ball touches and free play). They found
20 the total distance covered per minute of play, high intensity running, total number of duels and
21 lost ball possessions were significantly greater within SSGs in comparison to match play. In
22 addition, the authors found blood lactate, percentage of successful passes and number of ball
23 possessions to be lower during SSGs which is an alternative result to the current study. Small-
24 sided game performance outcomes; however, are not consistent amongst the research
25 published. Gabbett and Mulvey (2008) investigated the movement patterns of SSGs (3v3 and

1 5v5) and compared these to domestic, national and international elite women's soccer matches.
2 They found SSGs were able to simulate the overall movement patterns of women's soccer;
3 however, they were not able to simulate the high intensity, repeated sprint demands of
4 international competition. This may suggest different sports and playing constraints (e.g.,
5 number of players, playing area size, player density) may produce alternative performance
6 outcomes.

7 It is important when interpreting the results to consider the limitations of the study. The
8 number of players analyzed were only a small sample of youth AF players from the same team
9 from one match observation. Kempton, Sirotic, and Coutts (2014) have noted how single match
10 observations obtained from match play may not provide reliable representations of technical
11 and physical profiles. As such, this team may not be representative of the population and
12 inferences from this study may not be generalizable to the population of AF players until further
13 research has been conducted. To clarify if a 5v6 SSG performance does compare to match play
14 it is recommended a greater number of players, from all playing positions and age groups (i.e.,
15 under 18 and seniors) are assessed in more 5v6 SSG and match play conditions. For example,
16 in soccer, a player's technical performance is affected more by the effect of team and opposition
17 strength than the effects of match location and match outcome (Liu, et al., 2016), whilst others
18 have found physical outputs to be greater in senior AFL players than in under 18 players
19 (Burgess, Naughton, & Norton, 2012). In addition, further investigation is needed to determine
20 whether there are performance variations between novice and skilled players within each age
21 group and if alternative technical and physical performance match outcomes exist with
22 different playing conditions (e.g., playing in wet conditions or on larger grounds).

23 Finally, it is important to note this study evaluated individual performance variables in
24 comparison to recent studies investigating collective performance variables (Alexander,
25 Spencer, Mara, & Robertson, 2019; Robertson, et al., 2015). Whilst collective performance

1 variables are important to team sport players, individualized training interventions remain an
2 important aspect to player development. In order to more effectively design these interventions
3 research studies are required to investigate these individual performance outcomes.

4 **Conclusion**

5 Research on SSGs in AF is limited, accordingly this research provides insights to AF
6 youth coaches about the technical and physical performance outcomes of a 5v6 SSG (280m²
7 per player) and how they compare to match play (381m² per player). Overall, these results
8 support the hypothesis and suggest skill performances (i.e., kicking proficiency, total number
9 of kicks, time with the ball between 2-4 seconds and above 4 seconds) are higher in the SSG
10 than during match play with the physical variables having mixed results. Specifically, we
11 suggest the 5v6 SSG variation will afford players with more opportunities to kick the ball, more
12 time when kicking the ball, lower variability in kicking proficiency, run more meters per
13 minute and spend more time performing high intensity running than during match play. In
14 comparison, match play constrains players to kick the ball within a shorter time period and
15 affords players more opportunities to achieve higher average maximum running velocities.
16 Further research is required to see if the same results occur with different amounts of space
17 available per player, larger cohorts across more age groups (e.g., seniors) and ability levels
18 (i.e., novice, sub-elite, elite) and with different SSG constraints (e.g., 7v7).

19 **Practical Implications**

20 Considering the limited research conducted into youth AF, this research provides coaches
21 with greater insights into the technical and physical performance demands of match play. For
22 example, coaches may consider the limited amount of time players have with the ball before
23 executing a kick during match play or the distance and speed at which players need to be
24 capable of running when designing training interventions. Furthermore, this research has
25 underlined the complexities involved with conducting technical match analysis. As such,

1 coaches should use caution when interpreting player match performance due to the high
2 variability found.

3 The AF 5v6 SSG investigated provides coaches with a stable environment in which to
4 afford players more opportunities to kick the ball. Coaches may use this information to gain
5 greater insights into individual player kicking performance and assess kicking changes during
6 the season. Furthermore, the SSG appears to be a viable option for developing high intensity
7 running in match-like conditions. Coaches should; however, be aware of the difference in area
8 afforded per player in the SSG compared to match play. As such, caution should be applied
9 when implementing this research in the preparation of players for match play.

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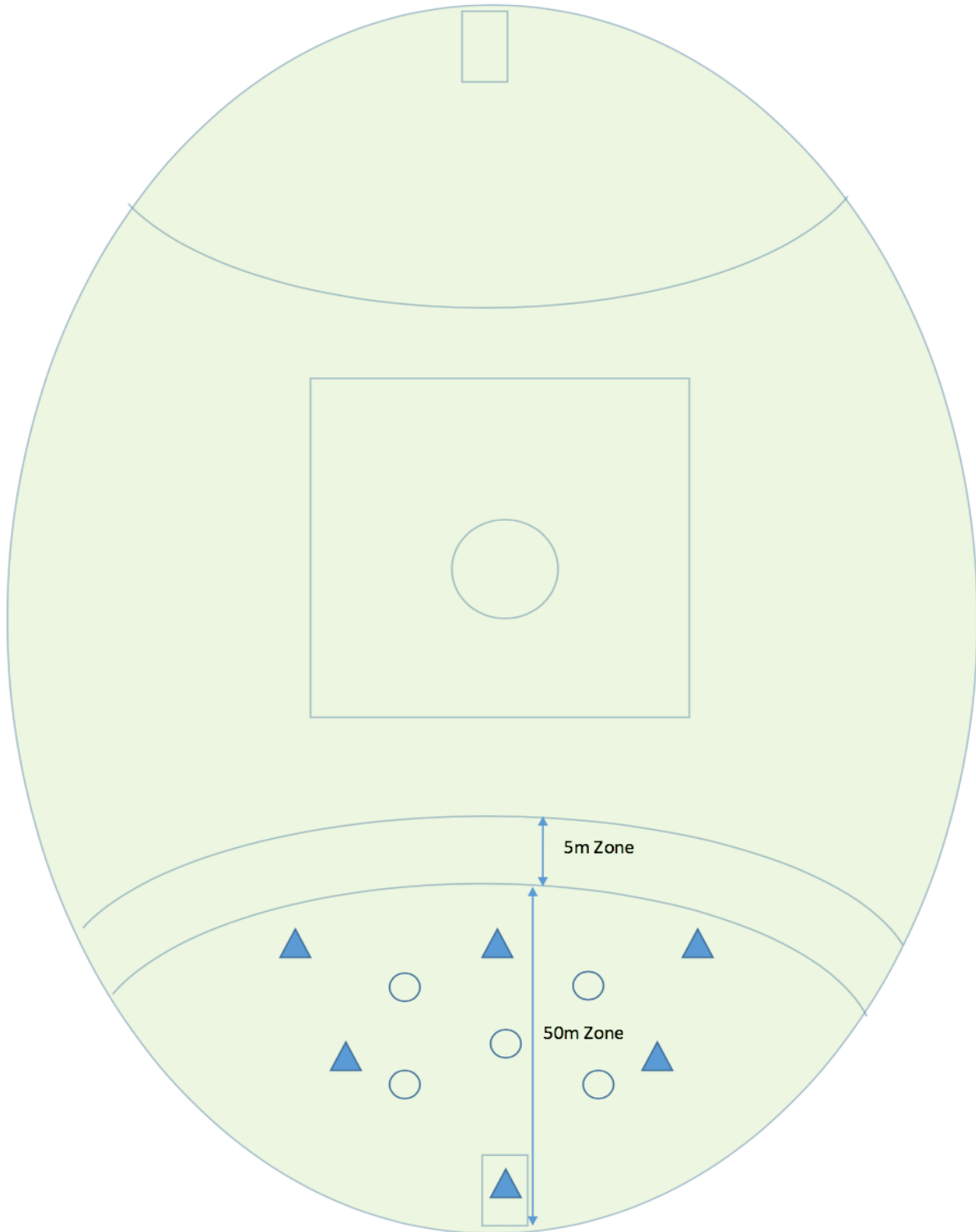
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1 Figure 1. Schematic of the 5v6 Australian football small-sided kicking assessment set up
2 (Bonney, et al., 2019c)

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Table 1 *Technical and physical performance outcomes of the 5v6 SSG and match play*

	5v6 SSG		Match		F	p value	Partial Eta Squared
	Mean (SD)	95% CI	Mean (SD)	95% CI			
Technical							
Kicking Proficiency (%)	59.83 (5.19)	52.71 - 66.95	50.13 (9.52)	43.96 - 56.30	5.035	0.044	0.30
Total Number of Kicks	11.83 (2.40)	8.94 - 14.72	5.34 (3.74)	2.87 - 7.88	13.543	0.003	0.53
Time Pressure							
Time Pressure <2s	3.33 (0.82)	2.69 - 3.97	1.13 (0.64)	0.57 - 1.68	32.318	<0.001	0.73
Time pressure 2-4s	4.00 (1.55)	3.04 - 4.96	0.63 (0.52)	0.00 - 1.45	33.776	<0.001	0.74
Time Pressure 4+s	1.50 (0.84)	0.80 - 2.20	0.38 (0.74)	0.23 - 0.98	7.061	0.021	0.37
Physical							
Odometer per game (m)	1590.33 (103.86)	773.68 - 2406.98	8776.38 (1198.87)	8069.14 - 9483.62	210.043	<0.001	0.95
Meters travelled per minute per game (m-min ⁻¹)	132.53 (8.66)	122.02 - 143.05	104.51 (13.64)	95.40 - 113.62	19.266	0.001	0.62
Max Velocity per quarter (m·s ⁻¹)	5.88 (0.20)	5.57 - 6.20	7.10 (0.43)	6.83 - 7.37	41.372	<0.001	0.78
High Intensity Running per quarter (%)	68.86 (5.15)	63.24 - 74.49	61.34 (7.05)	56.47 - 66.22	4,843	0.048	0.29

SD = standard deviation; CI = confidence interval

NOTE: Kicking proficiency is noted as a percentage; total number of kicks is noted as a count; time pressure is noted as a count; odometer is noted as meters; meters travelled per minute is noted as meters; max velocity is noted as meters per second and high intensity running is noted as a percentage.

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