SCHEDULE 9: CARDIAC SCREENING

DOCUMENT CONTROL

Name:	Australian Cricket Cardiac Screening Guidelines
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Owner:	Chief Medical Officer and Head of Performance Services
File location:	AMS and AC Performance Services ZenDesk
Document type (& enforceability):	Guidelines (recommendations)
Responsible parties:	National team and State Medical Officers
Beneficiaries:	All CA or S/T contracted players and players selected in squads to compete with state or national pathway competitions (U16+ women, U17+ men).
Applicable settings:	For all playing or training in Aus teams or S/T programs

RELATED DOCUMENTS & LINKS

Document Name	Location
International Recommendations for Electrocardiographic Interpretation in Athletes Consensus Guidelines	*https://www.jacc.org/doi/10.1016/j.jacc.2017.01.015*
Australian Cricket Cardiac Screening Player Form	*ZenDesk*
Australian Cricket Cardiac Screening Player Waiver	*ZenDesk*
List of publications used to inform these guidelines	*ZenDesk*

1. PURPOSE

1.1 Australian Cricket (AC) considers it important to have a Cardiac Screening Protocol in place for those who participate in Cricket Australia (CA) sanctioned competitions. This Protocol suggests that is recommended, although not compulsory, that players undertake cardiac screening to safely participate in cricket at an elite level. This is consistent with many other major sporting codes in Australia and overseas that have cardiac screening protocols (*CJSM, 2021*).

1.2 Cardiac screening was first instigated by CA in 2016 on the recommendation of a group of specialists in cardiology, sports medicine and cardiac screening (now the CA Specialist Cardiac Advisory Experts Group or CASCADE) with the aim of providing benefits to players and AC including:

a) Screening may potentially identify players with inherited or other cardiac pathologies which place them at risk when participating in elite level sport. In some cases, these athletes can receive treatment, which reduces their risk of a cardiac event and may permit continued sporting participation;

b) Screening also provides the benefit of reassurance for players who receive a 'normal' result, and provides a useful baseline ECG for reference if any issues arise in the future;

c) Screening has allowed AC to accumulate data between 2016 and 2022 showing the benefit of the AC approach to cardiac screening for elite cricket players. Ongoing data collection and annual auditing under a continual quality improvement model allows AC to explore any necessary changes to the Cardiac Screening Protocol;

d) Data collected to date since the screening program began in 2016 has included over 2500 screenings. Only a very small number of players actively opted out of screening (1-2% each season). During the period:

(I) very few (<1%) of players were diagnosed with a condition associated with sudden cardiac death, such as Wolff-Parkinson-White and Long QT syndromes. Multiple other significant diagnoses have been made, of conditions not generally associated with sudden death but which require ongoing monitoring.

(II) no players to date have been excluded from sport due to a cardiac problem (although there have been a few English county players excluded from cricket in this timeframe, indicating that exclusion from cricket is a possible outcome).

(III) no major cardiac incidents have occurred to any player in the CA screened cohort.

(IV) Cricket Australia are aware of cardiac arrests that have occurred in semi-elite non-CA players, highlighting the ongoing requirement of this policy.

(V) The CASCADE group also forms an integral part of the sports cardiology infrastructure in AC. The group includes experts with complementary skills sets (sports cardiology, electrophysiology, inherited cardiac diseases and cardiac MRI/imaging) and there is a direct line of communication between the group and the CA CMO to review/discuss any issues that arise during the season. This is invaluable, and unique to CA in the Australian sporting landscape.

2. SCOPE

2.1 This Policy applies to (collectively referred to as **Participants**):

a) CA and State contracted players;

b) Australian players contracted to a W/BBL Club; and

c) Pathway players selected in a state or national pathway squad competing at an under 16 (women) or 17 (men) age-group competition or older.

3. CARDIAC SCREENING PROTOCOL

3.1 Opt-Out Nature of Cardiac Screening Protocol

AC encourages Participants to undertake cardiac screening in accordance with the Cardiac Screening Protocol set out in this section. Any Participant who does not wish to undertake cardiac screening after having been provided with information on the benefits and risks can opt out of this process. This can include, if doctor and player prefer, signing an opt-out waiver in the form of the Australian Cricket Cardiac Screening Player Waiver (*Appendix 3*) provided to the Participant by CA.

3.2 Who Can Administer the Cardiac Screening Protocol?

Cardiac screening should only be performed by people experienced in screening athletes and with a defined clinical pathway for follow up in an efficient period of time. Specifically, AC requires that the Cardiac Screening Protocol be coordinated by AC Medical Officers (**AC MOs**) and utilise a cardiologist or other specialist experienced in screening elite athletes, to review each Electrocardiogram (**ECG**) based on the 2017 Consensus Guidelines.

3.3 How Often Does a Participant Need to Undertake the Cardiac Screening Protocol?

a) For those Participants who agree to undergo cardiac screening, an assessment under the Cardiac Screening Protocol:

   (I) Every two years for Participants who were under 21 years of age at their last screen and who have previously been screened without significant abnormality detected;

   (II) Every five years for Participants 21 years of age and older at the age of their last screen and who have previously been screened without significant abnormality detected; and

   (III) As often as is recommended, if a Participant has an abnormality detected on a previous screening and a specialist recommends further follow-up. That is, a team doctor or cardiologist could recommend a more frequent follow-up period than the two- or five-year periods in particular cases.

   This protocol is designed for the young athlete age group (<35yo) to detect cardiac abnormalities specific to younger athletes, it is not intended to screen for middle age cardiac related abnormalities. The very small number of athletes over 35yo does not warrant a separate protocol. Any player in the older age group who indicates that they would like to undertake – at any early age – investigations appropriate for the middle-aged athlete (such as blood cholesterol testing) can do so, but without this process being part of the formal screening protocol.

   Participants who have previously declined cardiac screening will be offered cardiac screening annually.

b) Participants who undertake cardiac screening will take part in the Cardiac Screening Protocol at the following time points or earliest convenient time, depending on the squad to which they belong. Ideally a player will need to be available if follow-up tests are required to ensure clearance from the screening process:

   (I) CA contracted players (male and female) – anytime during the year that is convenient;

   (II) State or W/BBL contracted players and uncontracted training squad players (male and female) – ideally during the pre-season or at the earliest convenient times for players competing overseas or on leave;

   (III) Pathway players – ideally during the pre-season or at the earliest convenient time during if playing for a state or national squad but, in particular, before the national age group championships for that year.

   (IV) It is recognised that it is impractical to routinely screen players who join a squad for a short period before participating in training and matches (e.g.

overseas players, players elevated to a state squad during the season). These players can be screened if they request, on an opt-in basis. Any player who presents with symptoms at any stage which could be cardiac in nature needs clinical workup semi-urgently.

3.4 Components of the Cardiac Screening Protocol

a) The Cardiac Screening Protocol will include the following:

(I) Provision to the Participant of the contents of the Australian Cricket Cardiac Screening Player Form (*Appendix 2*), containing:

(i) A plain language explanation of the overall benefits to the individual of cardiac screening;

(ii) A brief explanation acknowledging the possible disadvantages of cardiac screening including that screening may have career ending consequences if untreatable serious problems are found;

(iii) An option to sign a waiver and opt out of the cardiac screening test (and any Participant who elects to opt out must be provided with the *Australian Cricket Cardiac Screening Player Waiver* to complete and sign); and

(iv) A one-page questionnaire (completed via paper or online) with key medical screening questions that may alert the doctor of a possible cardiac condition or a family history of cardiac pathology.

(II) It is recommended but not compulsory that a physical examination is performed that includes (but is not limited to) an assessment of:

(i) Blood pressure (preferably sitting)* ;

(ii) Heart sounds with assessment for murmur; and

(iii) Marfanoid features check.

* If abnormal (diastolic pressure >=90 mmHg) and taken close to the time of finishing exercise, it is recommended to wait at least 5 minutes and repeat the test.

(III) It is compulsory that an ECG is assessed by either a cardiologist or other specialist experienced in screening athletes (including SEM physician who has completed ACSEP cardiac screening modules). The 2017 Consensus Guidelines for reporting ECGs in athletes should be used as the initial standard on whether the ECG is:

(i) “athlete normal” or;

(ii) “athlete abnormal”.

A specialist cardiologist should be consulted if there is any question about normality of either the ECG or full assessment.

* If the player’s heart rate is above 90 beats per minute, repeat the ECG after 15 minutes of rest.

b) The agreed indications for a follow-up echocardiogram were published in 2020 In summary, these are:

	CRITERIA
Personal history	Unexplained syncope Unexplained exertional chest pain (not likely to be of musculoskeletal origin) Exertion-related excessive shortness of breath not explained by asthma

	Rapid, sustained palpitations
Family history	Family history of any first or second degree relative with sudden cardiac arrest <40 years unrelated to myocardial infarction Any first or second degree relative diagnosed with inherited conditions associated with sudden cardiac death (such as cardiomyopathies and aortopathies)
Physical examination **(recommended)**	Any diastolic murmur, any systolic murmur ≥3/6 and any murmur that is accentuated with Valsalva manoeuvre Stage 2 diastolic hypertension at rest (i.e. diastolic blood pressure ≥90 mmHg)[1]
ECG	An ECG that is abnormal or has ≥2 borderline findings according to the International Criteria

(I) If there are any abnormal findings detected during the Cardiac Screening Protocol (i.e. upon review of the questionnaire, the physical examination or the ECG), the Participant:

(II) Will be promptly contacted by the relevant AC MO to inform him/her of the result; and

(III) Can continue training and playing unless specifically recommended to cease training and playing by the specialist doctors (e.g., cardiologists) pending further investigations; or

(IV) For Participants who have been recommended to stop playing and training due to an abnormality on the cardiac screening, the Participant is not to return to training or playing until he or she is cleared by the approved specialist cardiologist and the AC MO is satisfied that it is safe to resume training or playing. The criteria for allowing Participants to return to train/play following an abnormal finding via the Cardiac Screening Protocol will be determined on a case-by-case basis by the specialist cardiologist and AC MO. The player can request a further opinion from another suitably qualified cardiologist at any time.

c) If the findings from the Cardiac Screening Protocol are 'normal', communication of normal results to the player, for example the following short email or other route:

d) The AC MO may consult the Cricket Australia Specialist Cardiac Advisory Experts Group (CASCADE) expert advisory group (see paragraph 6.2 below) regarding abnormal findings and difficult cases.

e) A diagram summarising the AC Cardiac Screening Protocol is set out in *Appendix 1* to this Policy.

3.5 Cardiac Screening Reporting

a) All AC MOs responsible for carrying out cardiac screening in accordance with the Cardiac Screening Protocol must document in the AC Athlete Management System (AMS) all relevant information from a Participant's cardiac screening including, as a minimum:

(I) Findings from the key medical questions listed in the questionnaire in the AC Cardiac Screening Player Form (*Appendix 2*);

(II) Data from the Participant's physical examination; and

[1] The 2020 paper recommends follow-up for any player with Stage 2 Hypertension (BP >=140/90). However in early 2021, the CASCADE group clarified that Systolic BP was of less concern in athletes, so that an abnormal BP in an athlete should be considered to be Diastolic Pressure of >=90.

(III) Data from the Participant's ECG and the specialist ECG report.

(IV) The overall screening conclusion outcome (normal, pending extra tests, waiver, cleared after additional workup, abnormal).

b) AC MOs must also include on the AMS either a copy of a Participant's signed AC Cardiac Screening Player Waiver (*Appendix 3*) should the Participant elect not to undertake cardiac screening, or a note that the player was offered and verbally declined screening.

c) Information relating to any cardiac/medical condition managed by AC MOs and reported on the AMS shall be treated confidentially and in accordance with any applicable condition in the relevant Participant's player contract.

4. CHANGES ANTICIPATED DURING SEASON 2026/27

It is anticipated that in late 2026 that the *British Journal of Sports Medicine* will publish the new International ECG Interpretation in Athlete statement. When this occurs, for the remainder of season 2026/27, either the previous International Criteria from 2017 or the newly published International Criteria will both be considered valid tools.

It is also anticipated that Cricket Australia will join the ARENA (Australasian Registry of ECGs in National-level athletes) project during 2026/27 for the purposes of reinstating a quality assurance program. Over 50 other Australian sports have joined the ARENA Registry as of 2026. If and when this occurs, it will be explained to players undergoing screening that their ECGs by default would be sent to the ARENA registry, but that they have the ability to Opt Out and not participate if they do not want their ECG sent on.

5. MINIMUM REQUIREMENTS FOR CARDIAC SCREENING

5.1 Each AC MO is responsible for delivering key aspects of their respective Participants' health and wellbeing. In respect of each domestic cricket season, each AC MO must ensure the following level of servicing for cardiac screening is carried out:

a) All Participants to either have:

(I) Completed a cardiac screening (if required) and have had the results reviewed appropriately; or

(II) Provided a signed or verbal waiver opting out of the screening,

in accordance with the Cardiac Screening Protocol; and

b) Each AC MO to have implemented all requirements of the AC Cardiac Screening Policy (including the reporting requirements set out in section 4.5 in respect of all Participants subject to the Cardiac Screening Protocol.

6. REVIEW OF CARDIAC SCREENING POLICY

6.1 This Cardiac Screening Policy and the Cardiac Screening Protocol will be reviewed at least annually, including with respect to the frequency of screening and the percentage of players screened (rather than opting out). Data collected from the Cardiac Screening Protocol may be used to assess the efficacy of the protocol and any impact on player playing and training outcomes.

6.2 For the purpose of conducting these reviews and advising on abnormal screening results/difficult cases, the CA Chief Medical Officer in conjunction with the CA Head of SSSM may appoint an advisory group CASCADE including:

a) The CA Chief Medical Officer;

b) The CA Head of Performance Services;

c) One AC MO;

d) Up to four specialist cardiologists with recognised expertise in reviewing and analysing ECGs of elite athletes; and

e) A cardiac research fellow whose role shall include coordinating the cardiac audit and related research, organising meetings, setting agendas and taking minutes of meetings of the group.

6.3 The current members of CASCADE group at start of 2026-27 are John Orchard, Pip Inge, Leigh Golding, Andre La Gerche, Raj Puranik, Hari Raju, Jessica Orchard and Miranda Menaspa.

6.4 If AC elects to join the ARENA project in 2026-27, this will also act as ongoing quality assurance/review of cardiac screens.

REVISIONS

Date	By
3 August 2017	CASCADE Group
25 February 2018	CASCADE Group
23 May 2019	CASCADE Group
14 December 2019	CASCADE GROUP
15 May 2020	CMO & SMO group
20 April 2021	CASCADE GROUP
10 August 2023	CASCADE GROUP
20 July 2024	CASCADE Group
30 June 2025	CASCADE Group
30 June 2026	CA Medical team and CASCADE Group