

OWIA Cardiac Screening Policy

Version 2: 13 August 2025

POLICY STATEMENT

The OWIA has assessed the current global evidence on cardiac screening in athletes. The OWIA strongly supports the **2024** "Position Statement on Pre-Participation Cardiac Evaluation in Young Athletes" from the Australasian College of Sport and Exercise Physicians (ACSEP) to minimise the risk of Sudden Cardiac Death (SCD) in elite athletes by attempting to uncover unexpected cardiovascular abnormalities. The OWIA have also conducted a literature review on this subject of more recent publications in the peer reviewed medical literature. Whilst there is an exceedingly small proportion of the population with pre-existing cardiac pathology which may increase the risk of a significant cardiac event, the potential for a catastrophic outcome such as sudden cardiac death, warrants the need for appropriate screening.

POLICY OBJECTIVE

The policy recognises that there is significant worldwide literature and an established (rare) incidence of sudden cardiac death (SCD) in young athletes which may be preventable. The aims of this policy are to:

- Establish a best practice policy in managing cardiac risks in winter sports athletes
- To enable the best chance to identify and manage any OWIA/Snow Australia contracted athletes with cardiac abnormalities/variants that may lead to sudden cardiac death
- To minimise the incidence of sudden cardiac death in winter sports athletes through a commitment to evidence-based principles
- Demonstrate OWIA's commitment and care for athlete wellbeing

THE POLICY APPLIES TO

The OWIA cardiac policy applies to all OWIA and Snow Australia contracted/scholarship holders. Coaches and support team personnel (employees and contractors) are required to be aware of this policy.

BACKGROUND

- Many epidemiological studies on sudden cardiac death in young active populations as well as systematic reviews and consensus statements by expert groups have been published in the peer reviewed literature. Unfortunately, none of these are specific to the winter sport cohort.
- Reliance on the traditional pre-participation medical history and examination is inadequate as the vast majority of cases are missed. A systematic review from Harmon et al in 2015 (7) reported a sensitivity and specificity for the detection of serious cardiac abnormalities to be 20% and 94% respectively, for the history and 9% and 97% respectively, for the physical examination.
- ECG: The addition of an electrocardiography (ECG) to the standard PHE (Pre-participation Health Evaluation) has been mandated in Italy and Israel and has been recommended by the European Society of Cardiology and International Olympic Committee. Data suggest the sensitivity of the ECG is superior to that of history and physical examination alone. A meta-analysis performed by Harmon et al (9) showed the sensitivity and specificity of ECG was 94%/93%, compared to history 20%/94%, and physical examination 9%/97%.
- Many other elite sporting bodies (including professional sporting codes, elite sports institutes, and world sporting bodies) either strongly recommend or mandate ECG screening (in addition to a cardiac history and examination) in athletes to help identify those with cardiac abnormalities predisposing to sudden cardiac death. In particular, the



OWIA notes that affiliated sporting organisations including the AOC, APC, AIS, NSWIS, and VIS also follow similar policies (5).

- Recent epidemiologic data reveals that there is a significantly lower risk of SCD in females compared to male counterparts (up to 13-fold lower risk in females). (6)

1. SCREENING PROTOCOL

As the most significant changes to the heart occur in late teens and early adulthood, the recommendation is that all OWIA/Snow Australia athletes undergo regular ECG screening up to the age of 25; for males on entry and then every 2nd year and for females on entry and then every 5 years. The ECG should be performed in conjunction with a cardiac history and examination modelled on the American Heart Association pre-participation questionnaire (currently included in the annual OWIA medical screening questionnaire). Should an athlete 25 years old or older enter as a first-time OWIA/Snow Australia athlete, then he/she should also undergo a screening ECG on entry in addition to the annual cardiac history and examination.

A process of informed consent is instituted, whereby athletes receive pre-evaluation information in a plain-language summary, with the opportunity to ask questions and to receive appropriate counselling and support if required.

2. CARDIAC SCREENING

This cardiac screen has been incorporated into the OWIA annual athlete medical screening and includes the following-

2.1 CARDIAC HISTORY AND EXAMINATION (as per American Heart Association or AHA Recommendations)

Medical history*

Personal history

- i. Exertional chest pain/discomfort
- ii. Unexplained syncope/near-syncope[†]
- iii. Excessive exertional and unexplained dyspnea/fatigue, associated with exercise
- iv. Prior recognition of a heart murmur
- v. Elevated systemic blood pressure
- vi. Prior restriction from participation in sports

Family history

- vii. Premature death (sudden and unexpected, or otherwise) before age 50 years due to heart disease, in ≥ 1 relative
- viii. Disability from heart disease in a close relative <50 years of age
- ix. Specific knowledge of certain cardiac conditions in family members: hypertrophic or dilated cardiomyopathy, long-QT syndrome or other ion channelopathies, Marfan syndrome, or clinically important arrhythmias

Physical examination

- x. Heart murmur ‡
- xi. Femoral pulses to exclude aortic coarctation
- xii. Physical stigmata of Marfan syndrome
- xiii. Brachial artery blood pressure (sitting position)[§]

**Parental verification is recommended for athletes under the age of 18.*



**Judged not to be of neurocardiogenic (vasovagal) origin; of particular concern when occurring during or after physical exertion.*

‡Refers to heart murmurs judged likely to be organic and unlikely to be innocent; auscultation should be performed with the patient in both the supine and standing positions (or with Valsalva manoeuvre), specifically to identify murmurs of dynamic left ventricular outflow tract obstruction.

§Preferably taken in both arms.

NOTE: For the purposes of this OWIA screening policy, elevated blood pressure is diagnosed when the BP is >130/85 when taken seated after ~5 minutes rest and using an appropriate sized cuff. Repeat measurements for systolic BP 130 – 139 and diastolic BP 85-89 are recommended.

2.2 ECG EXAMINATION

ECGs will be interpreted using the “**International Criteria for ECG interpretation of athletes**” (2) as published by Dresner, Sharma et al as a consensus paper. Frequency as indicated above.

- i. To be performed either **pre-training OR >2 hours after a training session.**
- ii. ECG to be reported by collecting company and reported using the “**International Criteria for ECG interpretation of athletes**”. This needs to be made clear by the referring doctor at time of request.
- iii. If Initial report is positive, then an OWIA nominated Sports Cardiologist is to review the ECG to exclude false positives and recommend further steps.
- iv. The OWIA Chief Medical Officer (CMO) is to be made aware and any further investigations, management, and decisions regarding ongoing training or competition for the athlete will be made by the OWIA CMO in consultation with the relevant sports cardiologist. The OWIA CMO may, at their discretion, recruit other consultant expert advice to assist in the decision-making process regarding ongoing management and sport participation. The athlete has the right to seek a second opinion or consult their own specialist if the results could impact their ability to continue participating in their sport. The OWIA CMO (or physician delegate) will arrange for appropriate communication and counselling to the athlete (and family where appropriate) with plans regarding future sport participation to be determined using a collaborative and individualised shared decision-making approach.

2.3 PROCESS AND FOLLOW UP

When ECGs are performed, these will be sent to an appointed OWIA medical consultant for review and consideration regarding the athlete medical screening. Any follow-up actions including further investigations, cardiologist referrals, modification of sports participation, will require consultation with the OWIA CMO and a sports cardiologist.

Results of the ECG and any follow up actions will need to be uploaded to the athlete’s AMS profile.

2. ARENA REGISTRY

The OWIA is participating in the ARENA (Australasian Registry for ECGs of National Athletes) project. By contributing cardiac screening data to a central database of national representative athletes from multiple sports across Australia and New Zealand, we will facilitate research to improve knowledge about ECG interpretation and cardiac outcomes amongst athletes of various ethnicities, sports, age and sex.

OWIA will provide ARENA with retrospective and prospective ECG data, which will be securely stored at the South Australian Health and Medical Research Institute (SAHMRI). All information is kept confidential, and only de-identified information will be used for analysis, research and publication in scientific journals.



Participation in the Registry contributes to improved cardiac care of athletes and prevention of sudden cardiac death. It also provides additional benefit to the OWIA through independent expert review of athlete ECGs as well as feedback on our cardiac screening program. We will also be able to receive customised feedback including a summary of our aggregate data for screening results, the proportion of athletes screened, the proportion requiring follow-up, any differences between groups (e.g. male versus female) and comparisons between winter and other sports.

The OWIA Board has provided consent on behalf of our athletes to participate in the study. Athletes will be provided with a verbal explanation about the project when they undergo routine periodic cardiac screening, and they retain the option to request further detailed information and/or to opt out of the Registry.

CHANGES TO THIS POLICY

The OWIA reserves the right to vary or replace this Policy at any time. Changes are effective upon posting on the OWIA website. It is the responsibility of all athletes and personnel to remain informed on any variances to this Policy. It is recommended to visit the [OWIA website](#) to view the current OWIA Cardiac Screening Policy.

DOCUMENT HISTORY

Version	Adopted by OWIA	Content reviewed / purpose
One	TBC	Reviewed by OWIA Board and post pond until August meeting with amendments to 2.2iv
Two	13 August 2025	

APPENDIX- International Perspective on Importance of ECGs

From an Australian perspective, there is difficulty in providing recent statistics on the prevalence of cardiac abnormalities representing increased risk of SCD across the Australian population. As such, we rely on international figures to provide a guide on prevalence and appropriate practice for ECG inclusion:

- International Olympic Committee (IOC) Consensus Statement 2009 (8) states that “ECG screening is recommended” for athletes and reaffirmed the importance of cardiac review in pre-participation and periodic health review. The paper reaffirmed the role of clinical assessment and outlined the elements to be included in history and examination, stating “it has been demonstrated that adding an ECG examination to history and physical examination results in a substantial increase in the ability to identify potentially lethal heart disorders”.
- The Australasian College of Sport and Exercise Physicians (ACSEP) Position Statement Pre-Participation Cardiac Evaluation in Young Athletes (2024) (4) re-affirms the well-recognised position that “for the vast majority of young individuals, regular exercise is not only safe but should be encouraged. However, there is a very small proportion of the population with pre-existing cardiac pathology, where participation in competitive sport may increase their risk of a significant cardiac event.” At the present time, ACSEP, along with NSOs and professional sport organisations in Australia, recommend that all young elite athletes should be evaluated for conditions linked to sudden cardiac death using a process consisting of history, examination and resting 12 lead ECG.
- American Heart Association (AHA) and American College of Cardiology guidelines recommend “screening with 12-lead ECGs (or echocardiograms) in association with comprehensive history-taking and physical examination to identify or raise suspicion of genetic/congenital and other cardiovascular abnormalities”. “If undertaken, such initiatives should recognize the known and anticipated limitations of the 12-lead ECG as a population screening test, including the expected frequency of false-positive and false-negative test results, as well as the cost required to support these initiatives over time”. (9)

“The potential benefit of such initiatives is the identification of a small number of people with potentially lethal genetic or congenital cardiovascular diseases (e.g., hypertrophic cardiomyopathy) so that (1) they may be withdrawn from competitive sports to decrease their personal risk and generally make the athletic field a safer environment, and



(2) in the process, some high-risk people may be recognized who may be candidates for disease-modifying medical or surgical intervention, or for prevention of sudden death with implantable defibrillators”.(9)

- European Society of Cardiologists recommends “screening all young competitive athletes with a complete history and physical (H&P) and 12-lead ECG”. (3)
- The Baker IDI Heart & Diabetes Institute supports “cardiac screening using 12-lead electrocardiography in sporting groups as a means of identifying people at high risk of sudden cardiac death where practical and affordable, although it is acknowledged that there are some limitations with ECGs. A study of young Italian male athletes has shown that sudden cardiac death among young athletes was more than 5 times as high compared to non-athletes per year per 100,000 people” (Corrado et al 2006) (1)
- Seattle Consensus Statement 2017: international criteria for electrocardiographic interpretation in athletes’ states “Sudden cardiac death (SCD) is the leading cause of mortality in athletes during sport. A variety of mostly hereditary, structural or electrical cardiac disorders are associated with SCD in young athletes, the majority of which can be identified or suggested by abnormalities on a resting 12-lead electrocardiogram (ECG).” “Each revision of the ECG standards has improved specificity while maintaining the sensitivity for ECG-detectable pathological conditions associated with SCD.” “Effective use of ECG in the cardiovascular care of athletes requires that abnormal findings receive appropriate secondary investigations to confirm or exclude conditions associated with SCD”.(2)

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