



Australasian College of Sport and Exercise Physicians (ACSEP) Position Statement on Pre-Participation Cardiac Evaluation in Young Athletes

1. The ACSEP re-affirms the well-recognised position that for the vast majority of young (<35-year-old) 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.
2. The ACSEP acknowledges that there is an abundance of scientific literature on the topic of pre-participation cardiac evaluation of young athletes. It also acknowledges that while much of this work has been performed in overseas populations that are ethnically and socially different to those of Australasia, these studies have some relevance to our populations.
3. The ACSEP acknowledges a lack of data relating to the incidence of sudden cardiac death (SCD) in Australian and New Zealand athletes. To best ascertain the magnitude of SCD in the Australasian populations, including Aboriginal and Torres Strait Islanders, Maori and Pasifika, the ACSEP recommends the establishment of an Australian Registry of Sudden Cardiac Death in Young People.
4. Furthermore, there are a lack of Australian and New Zealand data on the effectiveness of the pre-participation cardiac evaluation (PCE) with respect to the identification of cardiac risk and prevention of SCD. Therefore, all organisations with cardiac evaluation programs should be strongly encouraged to pool data to facilitate audit and further research.
 - a. The ACSEP welcomes the recent creation of the Australasian Registry of Electrocardiograms in National Athletes (ARENA). This has been established to collect and centralise cardiac evaluation data from across sports in Australia and New Zealand. It will provide a mechanism to facilitate such audit and research, now and in the future.
5. At the present time, the ACSEP recommends the following:
 - a. All young elite¹ athletes should be evaluated for conditions linked to sudden cardiac death using a process consisting of history, examination and resting 12 lead ECG.
 - i. The history and physical examination should be as per the American Heart Association (AHA) Guidelines, or similar.
 - ii. To minimise false positives and negatives, the ECG should be interpreted by a physician with suitable expertise using the 'International Criteria for electrocardiographic interpretation in athletes'.
 - iii. Such an evaluation should ideally take place every second year from age 16 to 25.
 - iv. Consideration may be given to a reduced frequency of ECG evaluation in female athletes as the risk of sudden cardiac arrest (SCA) is significantly less when compared with male athletes.
 - v. All athletes, regardless of sex, entering an elite programme after age 25 should be evaluated upon entry into the programme.

¹ For the purposes of this document the ACSEP defines 'elite' as athletes playing in professional competitions, government-funded athletes (including state and national institute of sport athletes), and all other athletes where training for, and competing in, sport is their primary daily activity.



- ~~vi. Elite athletes under the age of 16 should have an evaluation consisting of history and physical examination on entry to a programme, with an ECG only if clinically indicated.~~
- b. An athlete should not be compelled to undergo a PCE. All athletes must be made aware of the reasons for evaluation and receive pre-evaluation information in a plain language summary. They should also be given appropriate opportunity to discuss the process with others including, but not limited to, family and medical staff.
 - i. The evaluation process should also include appropriate counselling and support if required.
- c. If an athlete is diagnosed with a condition which has the potential to lead to SCD, the ACSEP does not support *mandatory* exclusion of the athlete from their chosen sport at a competitive level.
 - i. Rather the ACSEP recommends that opinion is sought from specialists with expertise in sports cardiology. The opinion provided should consider the clinical diagnosis and the risks of participation, with and without appropriate intervention (procedural or pharmaceutical), and thus enable a collaborative, individualised, shared decision-making approach regarding participation. A fully informed athlete has the right to pursue a course of action that is contrary to medical recommendations.
 - ii. Athletes who wish to continue to play competitive sport, despite expert medical opinion advising to the contrary, should also be made aware that their chosen sport's governing body may still not permit them to compete, or be selected or drafted to compete, in that given sport and that positive findings may lead to withdrawal of funding if current best medical opinion recommends exclusion from competitive sport. The ACSEP acknowledges this potential conflict between the rights of the athlete and the rights and responsibilities of the governing body. Such conflicts will need to be resolved on a case-by-case basis.
- d. At this point in time only elite athletes should be evaluated this way for the following reasons:
 - i. As previously stated, there are insufficient local data to support state or national-level government funding of a PCE programme for all young competitive athletes.
 - ii. There is limited evidence that the level of competition and, by inference, number of training hours, may be a risk factor for sudden cardiac death in those with an SCD-linked pathology.
 - iii. The ACSEP believes that there is a greater responsibility to evaluate elite athletes as they are incentivised to play sport, either through direct financial or other gain.
 - iv. Only professional organisations and state and national sports institutes (or similar) are likely to have the governance and resources available to fund and deliver a PCE programme in its entirety.
- e. Young competitive non-elite and recreational athletes may participate in sport without a formal evaluation process but are encouraged to consult a medical practitioner. This consultation should not be solely focused on cardiac pathology but more broadly on general health.
- f. All athletes with symptoms or signs suggestive of cardiac disease should be referred to a Sport and Exercise Physician or a specialist with expertise in sports cardiology for further investigation. All athletes with a family history of sudden cardiac or unexplained



- death in a first degree relative under the age of 50, or a family history of an inherited cardiomyopathy or arrhythmia syndrome, should also be referred.
- g. In the absence of a strong family history of cardiac disease suggestive of a hereditary condition, there is no place for pre-participation genetic testing of athletes.
 - h. All organisations that conduct PCEs must maintain appropriate governance of the entire evaluation process. This includes, but is not limited to, appropriate record keeping as well as policies and processes relating to the management and support of those investigated for, and diagnosed with, cardiac conditions. Ideally, a PCE should be conducted allowing sufficient time for the whole process (including any necessary follow-up) to be completed prior to competition commencing.
6. Survival from SCA has been shown to be significantly improved with the timely use of an Automated External Defibrillator (AED). Therefore, the ACSEP recommends:
- a. that there is access to an appropriately located and maintained AED at all community sporting venues.
 - b. and that sporting organisations have an action plan for the management of the collapsed athlete.
7. The ACSEP acknowledges that the prevalence of ischaemic heart disease (IHD) is greater in young indigenous Aboriginal and Torres Strait Islanders, Māori and Pasifika people. When evaluating athletes from these ethnicities, clinicians should be aware of the greater risk of SCD from non-congenital cardiac disease.

Reviewed and Endorsed by ACSEP Research Committee
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Working Group

Dr. Dan Exeter (Chair) - FACSEP
Dr. Donald Kuah – FACSEP
Dr. Roslyn Carbon – FACSEP
Dr. Anik Shawdon – FACSEP
Dr. David Bolzonello – FACSEP



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