

AUSTRALASIAN COLLEGE OF SPORTS PHYSICIANS

POSITION STATEMENT

Pre-Participation Cardiac Evaluation in Young Athletes

- 1. The Australasian College of Sports Physicians (ACSP) re-affirms the well-known 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 (1,2,3).
- 2. The ACSP acknowledges that there is significant scientific literature on the topic of pre-participation cardiac evaluation of young (< 35 year old athletes) (4,5). It is also acknowledged that much of this scientific work has been performed in overseas populations that are ethnically and socially different to those of Australasia. However it is still considered these studies have significant relevance to our populations (6,7), though there is still uncertainty about the overall effectiveness of pre-participation evaluation strategies to prevent Sudden Cardiac Death (SCD) in young athletes.
- 3. In order to best ascertain the magnitude of SCD in the Australasian populations and the causes of SCD in Australasia, the ACSP is recommending the establishment of an Australasian Registry of Sudden Cardiac Death in Young Athletes. This registry should collect demographic data and family history as well as the circumstances related to the death. Specifically,
 - a. Had the individual been evaluated and if so with what tests?
 - b. What was the relationship of the event, if any, to exercise?
 - c. Was the individual taking any prescribed stimulant medication?
 - d. Was the individual taking stimulants such as caffeine or other stimulant containing products?
 - e. Was there relevant medical or family history? Also any relevant autopsy findings or findings from cascade screening of family members?
- 4. At the present time, the ACSP recommends the following
 - a. Consideration should be given to evaluating elite athletes between the ages of 16 and 35 for pathologies linked to sudden cardiac death using a process consisting of history, examination and resting 12 lead ECG (8,9).
 - i. The history and physical exam should be as per the American Heart Association (AHA) Guidelines.
 - ii. So as to minimise false positives and negatives, the ECG should be interpreted by a cardiologist with an interest in sports medicine. In particular reference to the European Society of Cardiology (ESC) (10) guidelines for interpretation of the athlete's ECG should be used.

- iii. An athlete should not be compelled to be evaluated, nor, in the event of positive findings should they be mandatorily excluded from their chosen sport. They must be made aware of the reasons for evaluation, the possible implications of going against recommendations, and in the context of government-funded athletes, they must be made aware, that positive findings may lead to withdrawal of funding if current best medical opinion recommends exclusion from competitive sport (11).
 - 1. All athletes should receive pre-evaluation information in a plain language summary and be given appropriate opportunity to discuss the process with others, including, but not limited to, family and medical staff.
- iv. Such an evaluation should ideally take place every second year from age 16 till 25.
- v. Athletes entering an elite programme after age 25 should be evaluated upon entry into the programme.
- b. Non elite athletes may participate in sport without a formal evaluation process, but are advised to consult their general practitioner before starting competitive sport. This consultation should not be solely focused on cardiac pathology but assess general health.
- c. All athletes with a history of sudden cardiac death in a first degree relative or symptoms suggestive of cardiac disease, regardless of status, should be referred for further investigation by a sports cardiologist or sport and exercise physician.
- 5. The ACSP recommends at all sporting venues where competitive sport is played that there is community access to an Automatic External Defibrillation (AED) device (12).
- 6. The ACSP recommends that all sporting organisations have an action plan for the management of the collapsed athlete (9).
- 7. Previous studies have demonstrated that the young Indigenous Australian athlete may have a higher risk of SCD, generally as a consequence of ischaemic heart disease (13). The ACSP position statement on SCD in young athletes recommends that health care and community care workers involved with this group are educated in the significant problem of SCD in young Indigenous Australian athletes and advise the necessary steps in obtaining pre -exercise participation evaluation in this group.

On the basis of available information the ACSP recommends the following in relation to pre-participation evaluation of athlete health with particular reference to the risk of Sudden Cardiac Death (SCD) in young athletes.

- 1. As SCD in young athletes is a very rare event this position statement recommends that exercise, and its substantial benefits to health, be encouraged in all age groups.
- 2. A "SCD in young athletes" registry be established with the goal of having a coordinated database for Australasia.
- 3. Research into the Australasian "athlete's heart" region be undertaken so that the extent of SCD can be further defined and appropriate

- recommendations made. This is particularly with respect to Indigenous populations such as Aboriginal, Torres Strait Islander, Maori and Pacific Islander.
- 4. At this stage pre-participation evaluation of athletes for the risk of SCD should be recommended for elite level athletes including appropriate education of the implications and aims of the evaluation.
- 5. This evaluation should include history and physical examination, as per the American Heart Association (AHA) guidelines, and a resting 12 lead ECG.
- 6. This ECG should be interpreted by a cardiologist with an interest in sports medicine
- 7. The age of commencement for pre-participation assessment for risk of SCD should be age 16 and continue bi-annually until the age of 25.
- 8. Exclusion of athletes from competition as a consequence of the results of their pre-participation evaluation and further assessment should not be mandatory but a process of counselling should occur and sporting participation recommendation should be made.
- 9. At all sporting venues where competitive sport is played that there is community access to an Automatic External Defibrillation (AED) device.
- 10. The Indigenous populations in Australasia should be given priority access to any resource allocation for evaluation of the risk of SCD in young athletes.

Australasian College of Sports Physicians Position Statement May 2013 (updated July 2013 - referenced)

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BACKGROUND TO ACSP POSITION STATEMENT

This position statement has been formulated and recommended in response to the following events

- 1. Prevention conference of the International Olympic Committee (IOC) that was attended by many of Australia's sports physician fraternity where the conference took a strong stance on the use of pre-participation history and examination concurrently with a 12 lead ECG
- 2. The highly publicised on pitch collapse during English Premier League match of Fabrice Muamba in 2012 who was effectively in cardiac arrest for 78 minutes and was revived. FIFA (Federation International Footb all Association) are currently formulating a position statement on this incident with respect to screening history and examination and concurrent 12 lead ECG's.
- 3. Mandating by the NESC (National Elite Sports Council) of ECG's being part of a pre-participation evaluation of all athletes entering an elite sports program for the Institute Sports Network.
- 4. The requirement of the AOC (Australian Olympic Committee) in response to IOC requirement for all athletes to have an ECG prior to the 2012 London Summer Olympic Games.
- 5. The understanding that the by-product of the IOC, FIFA, NESC is that a sensible policy is needed in this area for Australian sport, in particular elite sport. There is some evidence, although weak, that the proportion of elite athletes affected by SCD is higher than for non-elite athletes and this forms the basis of recommending for elite athletes to be screened. In addition elite athletes are often training as a part of an organized training program for example with a state or nationally based institute or a professional sporting team and thus placing the organisers at risk, considering the recommendations of IOC, FIFA, NESC and the European Heart Association, if an athlete in their care suffers a sudden cardiac death. It is accepted by the committee making the position statement that due to their significantly higher numbers of non elite athletes these athletes in raw number terms would have a higher incidence of SCD.
- 6. Previous studies have highlighted the incidence of SCD in the Abor iginal population (with the indigenous population of New Zealand having not been studied) and believe resource allocation if any should be directed at this group.
- 7. At this stage after careful consideration that in 2013 a cardiologist is best positioned to interpret the ECG but this needs to be in context of understanding ECG changes that are present in a normal athlete.