LETTER

Observations on the "Lausanne Recommendations" on sudden cardiovascular death in sport

As Directors of Medical Services to UK Athletics, the English Institute of Sport and the British Olympic Association, we were pleased to receive the Lausanne Recommendations on Preparticipation Cardiovascular Screening for Sudden Cardiovascular Death in Sport.¹ We fully support the goals and motivations behind this document, but having carefully read the document, there are a number of areas that may warrant open discussion. The following dissertation outlines those areas of the recommendations that we, as practising sports physicians charged with their implementation, believe require further delineation and clarity. Our hope is that further discussion will result in enhanced clarity and help on the implementation of these recommendations.

1. We applaud the document's goals, which are to "identify, as accurately as possible, athletes at risk in order to advise them accordingly". Although not stated, it is important to be reminded that this is referring to sudden cardiac death in sport and not other causes of sudden death.
2. Despite its goals, it is unclear exactly which sporting group the recommendations are intended for: elite sport, mass participation or the health and fitness industry? This lack of clarity results in interpretation difficulties and makes the subsequent implementation of detail found in the document more uncertain. We believe that this warrants clarification.
3. Although appropriately altruistic in its intent, it is clear that "to advise them accordingly" places great responsibility on the treating doctor to consider ethical issues such as autonomy, beneficence, justice and non-maleficence. Although these recommendations touch on ethical considerations, little guidance is given. Subsequently, as with any screening programme, before attempting to implement these recommendations, doctors must have considered both the sporting and non-sporting implications of positive outcomes and have in place management strategies for this situation.
4. As discussed earlier in the literature,² we wonder as to the extent these recommendations may result in medicolegal implications for sporting bodies who may or may not wish to, or may or may not be able to (for either fiscal or other pragmatic reasons) implement the recommendations. Will this be the standard against which all future negative cardiovascular outcomes in the sporting arena will be judged?
5. The recommendations are clear that preparticipation cardiovascular screening should be performed "at the beginning of competitive activities". We are uncertain as to what exactly this means. Clearly, delineation of whom this document is aimed at (according to point 1) would assist in interpretation and implementation of this recommendation.

6. Consistent with previous documents,^{3,4} the Lausanne Recommendations suggest that the screening is repeated at least every second year. Given the logistical implications of this, and the predominance of congenital factors in the aetiology of sudden cardiovascular death in sport, we, along with authors of previous guidelines,⁵ are uncertain of the academic foundations for this recommendation. The rationale for this particular recommendation would be beneficial to those attempting to implement it.
7. In the "Personal history" section of this document, a number of questions seem both repetitive and low in specificity. Although the inclusion of questions with low specificity may increase the sensitivity of the recommendations, without any guidelines as to which combination of questions or answers is relevant, the validity of this document as a screening tool seems to be reduced.

For example, (a) the following sequential questions seem unnecessarily repetitive:

"Do you ever have chest tightness?"
 "Does running ever cause chest tightness?"
 "Have you ever had chest tightness, cough, wheezing, which make it difficult for you to perform in sports?"

(b) The following questions would seem to have little sensitivity for sudden death:

"Have you ever had a seizure?"
 "Have you ever been told that you have epilepsy?"
 "Have you ever been treated/hospitalised for asthma?"

(c) We are uncertain as to how the following questions assist in the stated goals:

"Do you have any allergies?"
 "Are you taking any medications at the present time?"
 "Have you routinely taken any medication in the past two years?"

Further discussion and consideration as to the rationale for the inclusion of these questions may increase the credibility of this section.

8. Similarly, in the "Family history" section, we are uncertain of the relevance of the following question to sudden cardiac death:

"Has anyone in your family experienced sudden infant death (cot death)?"

As above, this section may require further consideration as we are not aware of any relationship between a family history of sudden infant death (aetiology considered unknown and general not cardiac) and sudden cardiac death in relatives.

9. The scientific literature seems to show no clear consensus on the relative merit and cost effectiveness of particular investigations within the realm of cardiovascular screening.^{3,4,6,7} Although electrocardiography (ECG) is known to augment the

benefits of history and examination alone,⁸ clearly, echocardiography is the preferred screening tool when sensitivity alone is the major consideration. This document makes clear recommendations for the use of 12-lead ECG as a screening tool, while not acknowledging its potential limitations in the detection of the most common causes of sudden cardiac death in young athletes.^{3,4} When dealing with the cardiovascular screening of a limited number of elite athletes, the financial considerations are quite distinct from those involved in mass participation screening.⁹ As a result, we believe that if there are reasons other than pure clinical considerations (eg, fiscal, commercial or logistical) for the recommended approach of ECG alone in the initial assessment, this should be acknowledged.

10. The sensitivities of these recommendations all lie in "step one". Step two is clearly the specific investigation of those screened/selected athletes and is therefore irrelevant to the sensitivity of this document. It is therefore incumbent on the screening practitioner to interpret the athletes' responses to personal history, examination (which has little structure or guideline in this document) and the (normal) conduction abnormalities observed on ECG, and subsequently make a decision regarding referral for further investigation or not. No guidelines as to the particular combination or permutation of the "step one" features that would warrant referral are provided. Greater detail in this area may assist the time-challenged practitioner.

In summary, it is likely that this document is intended as a precipitant to action for national governing bodies in sport. As practitioners working within elite sport, we appreciate the significance of sudden cardiac death and appreciate the efforts of the International Olympic Committee to provide guidelines in this area. Our concerns are raised in the hope of enhancing the value of these guidelines to those front-line practitioners charged with its implementation. We hope that the open discussion generated by this document may assist in that goal.

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