

EXERCISE & CARDIAC DEATH

UNDERSTAND WHAT SUDDEN CARDIAC DEATH IS AND WHY IT IS ALSO ASSOCIATED WITH STRENUOUS EXERCISE.



Data reveals that there are about three cases of sudden cardiac death (SCD) every day in Singapore. Half these occur in people under 60; more than 90 per cent of them are men aged about 47 and the rest are women of about 50. Many of them had pre-existing coronary heart disease (CHD).

Increasingly, SCD is also linked to healthy individuals who die suddenly while exercising.

Senior Cardiologist Dr Eric Hong, of EH Heart Specialist, says that such exercise-related deaths are rare but they do occur, to the shock of family, friends, communities and even doctors. While it stands to reason that cardiac death in fit, young, active people doesn't make much sense, it may not be the same for 'weekend warriors'.

Dr Hong explains: "People who engage in extreme physical activity only once or twice a week have been associated with higher incidence of SCD."

In general, highly strenuous exercises are more likely to cause SCD, such as running in a marathon. About half of SCD cases, for instance, occur at the final 1.6km of the 42km route, when the last sprint puts the body under extreme stress. The sudden cessation after completing the race can also bring on SCD.

For the majority of cases, there was no clear risk or minimal risk, so the main challenge, says Dr Hong, is to identify those at high risk because of undetected heart conditions.

ATHLETES AND SCD

Studies in the US show that in athletes above 35, CHD is the

most common cause of cardiac death, particularly in those with a previous history of reduced heart function or who have pre-existing structural heart disease. It also occurs in people suffering from arrhythmia, an electrical disorder of the heart. For instance, Wolff-Parkinson-White syndrome can potentially cause an 'electrical short circuit' that results in a rapid heartbeat during physical exertion.

In athletes under 35, the commonest causes identified are:

- Hypertrophic cardiomyopathy, an inherited condition with thickened heart muscles
- Anomaly of coronary arteries, which causes blood supply to be compromised when the heart beats rapidly, especially during extreme physical exertion
- Undetected heart infections such as myocarditis (a viral infection), coronary artery

disease, rupture of the aorta, and left ventricular hypertrophy (thickening of the heart's left lower chamber)

HOW DOES SCD BEHAVE?

At the onset, the electrical system that regulates the heart-beat suddenly malfunctions, causing the heart to go into ventricular fibrillation (VF), where it beats rapidly without pumping properly. This disrupts proper blood circulation and starves the brain of oxygen, making the person lose consciousness. If emergency treatment is not given, death may follow.

Resuscitation of SCD or any other form of cardiopulmonary arrest should be initiated as soon as possible and best within four minutes, as any delay beyond this period may result in permanent brain as well as cardiac damage – so the earlier the initiation, the higher the chances of survival.



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Dr Hong has special interests in interventional cardiology, sports cardiology, cardiac rehabilitation and advanced non-invasive multi-modality cardiac imaging.

SERVICES

EH Heart Specialist is a comprehensive heart specialist clinic offering a full range of diagnostic services and treatments for all cardiac problems. Services include:

- Risk assessment and management
- Comprehensive cardiac diagnostic evaluation
- Treatment of heart diseases
- Education
- Optimisation and rehabilitation of the heart