



Patient **Information**

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What is the aim of this leaflet?

This leaflet provides information about cardiac screening. It aims to help you make an informed choice about whether to have your heart tested.

What is the purpose of cardiac screening?

An individual may have a cardiac abnormality in the absence of any symptoms. Screening with an electrocardiogram (ECG) aims to highlight these abnormalities by identifying conditions such as cardiomyopathies or electrical faults of the heart.

Why perform Cardiac Screening in Athletes?

According to ACC/AHA/ESC 2006 Guidelines for Management of Patients with Ventricular Arrhythmias and the Prevention of Sudden Cardiac Death; Section 13. Ventricular arrhythmias and sudden cardiac death related to specific populations, subsection 13.1. Athletes:

“Preparticipation history and physical examination, including family history of premature or SCD and specific evidence of cardiovascular diseases such as cardiomyopathies and ion channel abnormalities, is recommended” in athletes as a Class 1 indication. The guideline document goes further by stating that “Twelve-lead ECG and possibly echocardiography may be considered as preparticipation screening for heart disorders in athletes”

A growing body of sporting organizations recommend screening for their athletes including FIFA, UEFA and The Premier League. The European Society of Cardiology (ESC, 2005) and International Olympic Committee (IOC, 2009) also recommend cardiac screening with an ECG for any young person taking part in competitive sport. In countries such as Italy screening participants in representative sports is mandatory.

It is generally accepted that pre-participation screening for medical conditions should be a requirement for clearance to participate in competitive athletics, but there are no uniformly accepted standards for screening. Because the risk of SCD among athletes appears to exceed the risk in comparably aged populations, attention to cardiovascular screening is of special importance. Competitive athletics has been defined as “participation in an organized team or individual sport that requires regular competition against others as a central component, that places a high premium on excellence and achievement and requires some form of systematic training”.

Preparticipation screening of athletes has been discussed in various conferences, and policy statements, although the screening programs vary greatly in different countries. The major causes of SCD in athletes are HCM (36%), coronary artery anomalies (19%), ARVC, and myocarditis. In Italy, the incidence of the former as a cause of SCD has been reduced considerably due to an ECG and echocardiographic screening program.

Pre-participation cardiovascular screening focuses in general on a young population group (aged less than 30 yrs), among whom most anomalies will be congenital, although some might be acquired disorders. The multiple mechanisms and diseases involved in sudden death in young athletes have been reviewed. Drug intake may have an important effect on the cardiovascular system and may lead to coronary artery spasm (cocaine), modification of repolarization by drugs in susceptible individuals (i.e. antibiotics, antiarrhythmics, antidepressant agents), and blunted heart rate response during exercise (beta blockers). Special consideration is required in athletes who are middle-aged and older.

Screening of athletes is a difficult task. Routine physical examination might not reveal clinically significant anomalies, and personal or family histories have limited value. The resting ECG can disclose rhythm disturbances, abnormal repolarization syndromes such as the LQTS, the Brugada syndrome, the WPW syndrome, and the depolarization and repolarization abnormalities associated with HCM. However, nonspecific variations commonly observed on ECGs recorded from adolescents and young athletes may be confounding. Echocardiography may show structural anomalies but will not disclose anomalies of the coronary arteries. Nonetheless, it is recommended that all candidates undergo screening tests, such as ECG and, when appropriate, echocardiography (e.g., abnormal ECG, family history), beyond the history and physical examination.

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Can anyone be screened?

At Healthy Hearts, Healthy Lives, we offer all individuals the opportunity to be screened. The screening programme is not just for people who play sport. Cardiac incidents are less common in the general population though they can take place at any time..

What is the procedure at a Healthy Hearts, Healthy Lives screening?

Healthy Hearts, Healthy Lives will provide our screening service in pre-determined facilities at your local sports club / community centre. You will be required to fill in a medical questionnaire and consent form which can be completed on-line in advance of the screening, or on the day of the screening.

Everyone will have an electrocardiogram (ECG) which takes approx 7 minutes to complete. An ECG is a non-invasive examination illustrating the electrical activity of your heart beat. It is performed using stickers (electrodes) connected to a mobile recording device. The recorded ECG can be printed or stored for transfer via email. Each ECG is reviewed and reported on by a Cardiology Consultant within 48hrs. In association with the questionnaire the Consultant may recommend that further testing is required by means of an echocardiogram (ECHO). This is expected in 4% of people. An ECHO is an ultrasound image of the cardiac chamber, identifying its structures and function. A date and location for the ECHO investigation will be provided within 10 working days of the consultant's initial report.

Things I need to consider prior to my appointment?

If you have been sent a medical questionnaire and consent form you can fill this out to bring it with you. Alternatively you can fill it in on-line or pre-procedure. Young people wishing to be tested, who are under the age of 16, must get the consent form signed by a parent or guardian.

We strongly recommend that a parent or guardian is present when the person being tested is under 16.

Wear loosely fitting clothing.

To conduct the tests, the physiologist will have to access your bare chest. If you are female you will be required to either remove or loosen your bra. Female physiologists will be used where possible.

When do I get my results and what do they mean?

The consultant will report within 48hrs of receiving the ECG report / ECHO scan. Results will be sent via email or post to the individual / referring source within 2 working days of receiving the report. In the majority of cases, individuals will receive a letter stating that no abnormality has been identified. However, sometimes individuals will be invited to attend an appropriate hospital for further cardiac testing. Healthy Heart, Healthy Lives will provide a recommended follow-up pathway to ensure a prompt, efficient and accurate conclusion to the findings. In line with studies 4% of people will require an ECHO whereas 2.8% will require further investigations.

What does an abnormal result mean?

About 3% of people have abnormalities that require further investigation. The majority of these are not a problem. About 1% of cases require ongoing monitoring; some conditions are not life-threatening but may require some minor lifestyle modification. Up to 1 in 300 people will have a potentially serious condition that will require ongoing lifestyle modification, treatment or surgery.

Additional tests, such as a Holter monitor (a 24 or 48 hour ECG) and/or exercise stress test may also be required. It is important to realise that a further review does not necessarily mean you have a cardiac condition. However, further information is required to give a full diagnostic evaluation.

What will happen if I am found to have a condition?

It would depend on the condition. Although most of the conditions are not 'curable' they are all treatable and treatments range from lifestyle adaptations to drug therapy or, in some cases, surgery.

Who will have access to my results?

The information from the tests is strictly confidential and will not be disclosed to anyone other than yourself (or your guardian if you are younger than 16 years), your GP and others who are directly involved within your care, e.g. other consultant cardiologists.

Healthy Hearts, Healthy Lives have designed a database in association with G-Pace to store, anonymously, individual's data for research purpose only. This will be the most complete cardiac database for sports athletes available on the island of Ireland and will invaluable to the understanding of sudden cardiac death.

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Points to consider

Before deciding whether or not you want to take part in the Healthy Hearts, Healthy Lives cardiac screening programme, you may like to consider some of the benefits and disadvantages, and think about what is important to you.

- Undetected heart conditions affect about 1 in 300 people. Our tests are able to detect the majority of cardiac abnormalities most likely to affect young people.
- In the event that a cardiac abnormality is diagnosed you must be aware that this may affect certain mortgage applications, particular types of life insurance and it may also affect some careers.
- Cardiac screening is about probability, and decreasing your risk of suffering a sudden death. The ECG will significantly reduce your risks. This is why European Society of Cardiology and International Olympic Committee guidelines recommend having an ECG before participating in competitive sport.
- After initial screening the doctor may ask for further testing.
- A normal ECG does not predict cardiac health in the long-term and individuals who develop symptoms that cause concern should seek medical advice from their GP.
- After reading this you may decide not to have your heart screened. At Healthy Hearts, Healthy Lives we believe what is most important is that you obtain all the information you need to make an informed decision.

BOOKING A SCREENING:

Healthy Hearts, Healthy Lives will accommodate the organization / individual requesting the screening. Screening can be carried out during normal working hours, evenings and weekends. If you are interested in this service for your club, school, organization etc please contact Healthy Hearts, Healthy Lives on

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