

Signs that warn of heart problems in children

Fourteen-year-old Michael was an excellent athlete and loved sport. But all that changed on his school's sports day earlier this year.

Michael was just seconds away from winning the relay race when suddenly he collapsed. He was resuscitated by paramedics and taken to hospital. After tests, doctors broke the news: he would never run a race or do any vigorous exercise again.

Michael had an abnormally thickened heart muscle which was causing an obstruction in the outlet of the left ventricle. He would need medication and monitoring indefinitely.

Compared to adults, heart problems in children are not so common. However, some children and adolescents do have congenital or acquired heart diseases that may lead to serious consequences.

Congenital heart lesions usually present in early life and can even be detected before birth by ultrasound scan.

On the other hand, acquired heart problems may go undetected until warning signs occur.

Irregular heartbeat signals warning

One such warning sign is palpitations - an unpleasant awareness of your own heart beating too fast, irregularly or too forceful.

Not all palpitations indicate heart problems and they are often experienced during panic attacks. However, when palpitations occur with other symptoms such as fainting or chest pain, or if they are not associated with an obvious triggering factor, it could be a sign of an irregular heartbeat or arrhythmias.

A heartbeat that is too slow (bradycardia), too rapid (tachycardia), or irregular occurs when the electrical activity inside our heart goes wrong. For instance, supraventricular tachycardia can be caused by an abnormal loop circuit (accessory pathway) in the heart, while a slow heart rate can result from conduction failure (heart block).

Such abnormal cardiac activities may lead to inadequate output of the heart, thereby lowering blood pressure and reducing blood flow to vital organs.

When the brain is starved of oxygen

Another warning sign is syncope, or fainting in simple terms, which results from inadequate blood supply to the brain.

There are many different causes of fainting, however, as far as the heart is concerned, fainting can be due to abnormally slow or fast heartbeats (arrhythmias), obstructed outflow of heart chambers (left ventricular outflow obstruction), exaggerated or abnormal reflex of the heart causing a sudden drop in blood pressure and heart rate (vasovagal syncope), or an abnormal heart muscle (myocarditis or cardiomyopathies).

Different causes have different manifestations. For example, vasovagal syncope occurs while standing for long periods or is triggered by extreme emotional stress. Syncope due to outflow obstruction is often seen after exercise and is associated with chest pain and shortness of breath.

Tests crucial to correct diagnosis

Treatment is available for most heart problems in children and a correct diagnosis is the crucial first step.

The warning signs already highlighted are helpful in determining the cause, alongside certain tests such as an Electrocardiogram (ECG). This shows the baseline heart rhythm and is most informative when performed during a fainting attack or palpitation.

A 24-hour Holter Monitor is a continuous ECG recording which provides a better chance of detecting any abnormalities.

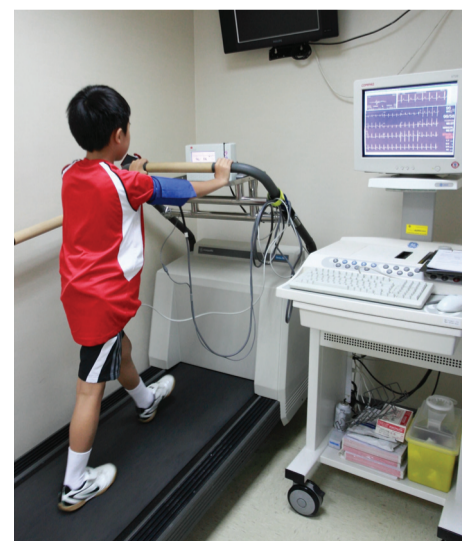
An Event Recorder records the heart rhythm during an attack, which can then be transmitted to the physician through the telephone line.

An Echocardiography shows abnormalities in the heart structure and function.

The Head-up Tilt-Table Test is a specific test to diagnose vasovagal syncope. Older children may be put through a Treadmill Test that measures their heart rhythm during exercise.



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A child running on the Treadmill