



IRREGULAR HEART RHYTHM

HEART BLOCK DISORDER AND PACEMAKER

“If there are abnormal rhythms and the heart pauses for more than three to four seconds, it means the patient has heart block and needs urgent treatment to avoid life threatening consequences such as hypoxia (lack of oxygen supply at the tissue level).”

Dr Hasri Samion

MD, M.Med, FNHAM, FAsCC
Chief Clinical Officer & Senior Consultant Paediatric Cardiologist

Dr Hasri Samion is a Chief Clinical Officer and Senior Consultant Paediatric Cardiologist at IJN. His expertise ranges from simple diagnostic to complex congenital intervention procedures including clinical Paediatric Cardiac Electrophysiology and pacemaker implantation.

What is a heart block disorder and how serious of a condition is it?

A heart block is a condition that affects the heart's electrical system and causes it to beat too slowly. The condition has various degrees depending on the extent of the electrical signal impairment.

The third degree, or complete, heart block can be congenital or due to heart diseases and heart surgery. This type of heart block require immediate attention and will not heal over time as a child grows.

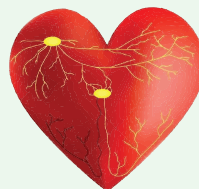


What are the symptoms of heart block disorder? How is it diagnosed?

The common symptoms of heart block are shortness of breath, feeling weak, confusion, fainting spells, change in skin colour (turning blue) and difficulty breathing when exercising.

A patient should undergo an electrocardiogram (ECG) test for 24 hours to record the heart's electrical activity.

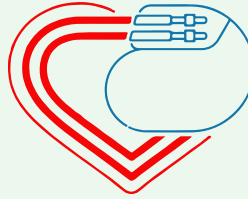
The condition is more common among newborns whose mother has an immunological illness called **Systemic Lupus Erythematosus** during pregnancy. It is best to treat the mother first to reduce the risk of the heart block on the child.



What kind of treatment is used on heart block of the third degree?

The most common treatment for patients with heart block is to implant a pacemaker in their chest or abdomen.

Whenever there's a problem preventing from the electrical impulse from reaching the pumping chambers, it causes abnormality. When that happens, the pacemaker delivers energy to trigger the pumping chamber back to normality.



How is a pacemaker implanted in children?

For young children, a pacemaker is implanted in the abdomen rather than the heart to avoid technical issues when it comes to growth rate of young patients.

Since the leads of a pacemaker come in a fixed length, the wires may stretch out when children grow if it's installed in the chest. By implanting the device in the abdomen, stretch risks are minimised.

What is a pacemaker and how different is it for children and adults?

A pacemaker is a small battery-operated microprocessor to regulate the heart's electrical system and eventually control the heart rhythm. It comes in two parts – a generator that uses a battery to power the device and two small wires called leads.

Pacemakers are programmable with functions that are adjustable to meet a patient's daily activities. It can also track and record heartbeats to inform doctors about a patient's arrhythmia.

Although most pacemakers come in one standard size, growth rate and different daily activities affect mode selection and implantation placement when it comes to children who require pacemakers



How long can a pacemaker usually last and what should be done to keep it well kept?

The pacemaker's generator can generally last for up to 10 years but its longevity depends on the type of heart disease. If the heart disease is severe, it may cause the generator to overwork, affecting its longevity.

We always recommend that the patients do follow-up screening every six months to check the generator, its battery life and the overall heart health. If the generator requires replacement, they will undergo a minimally-invasive key-hole surgery.

What type of activities should be avoided for those living with a pacemaker?

It is important for patients to keep a healthy lifestyle to avoid any infections or diseases that may affect the heart. However, active children should avoid aggressive physical activities such as martial arts as it may damage the generator or the wiring.

