

# Understanding How Pacemakers Work

For most of his life, Donald Williams had been physically active. The possibility of a having a heart condition never entered his mind.

*"Then one morning, I had an event in the bathroom. I fainted, fell over, fell into the tub, ended up going to the hospital."* Donald, Patient

It turns out Donald had an abnormal heart rhythm. Doctors implanted a pacemaker - a small, electronic device that helps the heart beat normally. A pacemaker has two parts. The main component is called the pulse generator. It contains a computer chip and battery. Connected to it are thin wires, called leads.

The pulse generator is implanted in the chest, below the collarbone. The leads are threaded through a vein and attached to the inside walls of the heart's chambers. Depending on your condition, leads may be attached to one or more chambers of your heart.

These leads are always monitoring the electrical activity of your heart. If they sense an irregular heart rhythm or an abnormally slow heart rate – known as bradycardia -- they send a message to the generator, which produces electrical impulses.

*"If you are prone to bradycardias or you're taking medications that cause bradycardias, making your heart rate too low, then a pacemaker will help prevent that from becoming too low."* - Nabeel Hafeez, MD Cardiologist

There are several different types of pacemakers. Your condition will determine the type that's best for you.

*"After insertion of the device, the patient should be able to return to their normal activities including exercise, sexual activities, and continue living to their fullest."* - Gabriel Breuer, MD, Cardiac Electrophysiologist

When it comes to his pacemaker, Donald takes the long view.

*"It's there because my heart needs it...actually, I'm glad it's there."* – Donald, Patient