

I Need a Pacemaker—What Are My Options?

The electrical system of the heart usually sends a signal for the heart muscle to beat, but as you age, it can become weak and fail, resulting in a heart rate that is too low.

What Is a Pacemaker?

A pacemaker is an implantable electronic device that ensures a minimum acceptable heart rate at all times. The beat from a pacemaker is the same as your heartbeat—painless and not noticeable.

Pacemakers are used to (1) treat symptoms related to slow heart rate, (2) allow medications important for strengthening the heart muscle, prevent myocardial infarctions, and prevent fast arrhythmias, which may slow the heart rate, and (3) prevent and manage heart failure.

A pacemaker is different from a defibrillator, which has a built-in pacemaker and also treats rapid or unstable heart rhythms. More than a million patients receive a pacemaker each year worldwide.

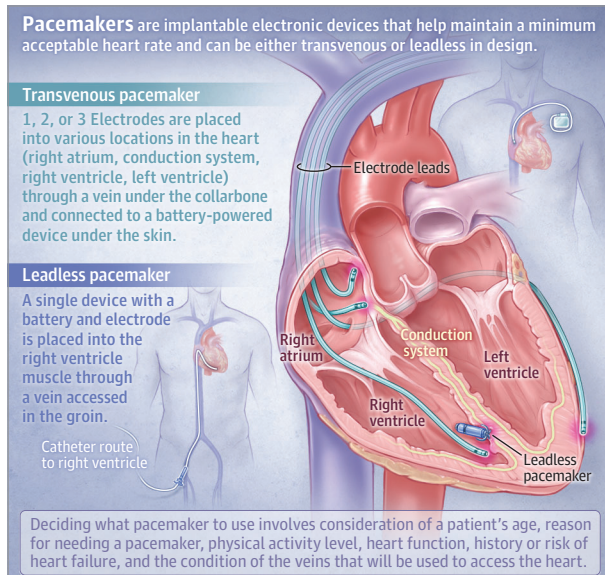
What Are the Different Kinds of Pacemakers?

In a transvenous pacemaker, the pacing wire(s) are inserted through a vein under the collarbone into the chambers of the heart and connected to a battery-operated device, which is placed under the skin, usually on the left side. There are 2 factors to consider with a transvenous pacemaker. The first is the number of leads: 1 (single chamber, either upper chamber [right atrium] or lower chamber [right ventricle]), 2 (upper and lower chamber), or 3 (right atrium, right ventricle, and left ventricle). The second factor is the location of lead in the lower chamber, either conduction system (His bundle or left bundle location) or standard (right ventricular muscle location).

A leadless pacemaker is a single piece, about the size of a vitamin tablet, consisting of the pacing electrode and battery. The device is placed into the muscle of the right ventricle through a vein that is accessed in the groin. There is no incision or scarring.

Which Pacemaker Is Right for Me?

The variables that will be considered are age, indication for pacemaker, level of physical activity, heart pump function, history or risk of developing heart failure, risk of developing an infection, prior history of infection, how often pacing is needed, and the quality of the veins through which leads will be introduced. Professional guidelines have been developed to tailor the right device for patients and to identify patients who do not benefit from a pacemaker.



Almost all new and recently implanted transvenous and leadless pacemakers are compatible with magnetic resonance imaging (MRI).

How Much Follow-up Do I Need?

Patients are seen in the office a week later to assure adequate wound healing and about a month later. Remote monitoring allows most pacemakers to be checked from home. In-office follow-up is required once or twice a year. Follow-ups are designed to check battery life and pacemaker function and to determine if any abnormal heart rhythms have occurred. Newer devices connect to a smartphone using Bluetooth, which can transmit information to a web server and provide some information to the patient. Recovery is minimal, with hospital discharge the same or next day. Transient activity restrictions are imposed only for a few weeks. In rare circumstances, occupational practices may need to be adjusted after pacemaker implantation.

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