

Keeping pace

Here's what to expect with a pacemaker

After leading a pacemaker clinic at OSF HealthCare for 13 years, James Borbely, RN, knows how the tiny devices make a big difference for heart patients.

"These devices are one of the things that man had made that change and save lives," Borbely says. "Some of these diagnoses of certain heart blocks, without the pacemaker, many of those people wouldn't be alive."

To put it another way, Borbely says a pacemaker "is kind of a one-trick pony" to pace a slow heartbeat, which can cause fatigue, shortness of breath and fainting. People with atrial fibrillation (or AFib, when the heart's rhythm and electricity are irregular) can also be candidates because AFib medication can slow the heartbeat.

A typical pacemaker is small enough to fit on a Post-it note. Some new models are the size of a jellybean.

"The battery and circuitry – the brain of the device – is all built in and sealed with titanium. There's a header. We put a couple wires called leads in there and tighten them down with screws," Borbely explains.

A cardiologist implants the device in the upper chest, and the leads wind their way to and through the heart. One lead is typically in the right atrium, and the other winds to the right ventricle.

"They sink into the tissue, and the body heals around it," Borbely explains.

The pacemaker creates electrical currents to keep the heart beating at a normal rhythm.

Soon after getting a pacemaker, a person typically has an X-ray to make sure the leads have not dislodged. The person can usually leave the hospital the same day, but not before they see a clinician like Borbely to schedule follow-up appointments.

"We teach them more about how the device works, why they got it, expectations and the bodily changes they may see with it," Borbely says. "I show them how their home monitor works."

That bedside monitor – no bigger than a dinner plate – is a key part of the puzzle to ensure the person can live a better life. The pacemaker wirelessly transmits data to the monitor about how the device is working, and Borbely can see that data. A couple of companies have even pioneered a smartphone application that takes the place of the box-like monitor.

"If they have an arrhythmia [an abnormal heart rhythm], the device can catch it on a self-check it does every day. It communicates with the monitor. If it shows something is out of parameters, it'll send me a message."

Thanks to technological advancements like that, Borbely says most people only need to see him once a year. But there are everyday things to keep in mind.

While most gadgets won't cause trouble, Borbely says to keep things like cellular phones at least six inches away from the pacemaker. That means don't carry your phone in your breast pocket.

"They don't damage the pacemaker permanently. But they can influence the way it performs. It changes some of the programming when it's too close," Borbely warns. Specifically, cell phone interference can change the heartbeat pace when it's not needed, wearing down the battery.

"It's not dangerous," he reassures. "But people may be symptomatic." Symptoms include heart palpitations and loss of consciousness.

You may also set off a metal detector at an airport or arena. Borbely says your provider will give you a card to explain your condition, and security typically takes you aside for a pat-down.

What to avoid:

- Arc welding. The high voltage can permanently damage the pacemaker.
- Skydiving. The guidance is something that doesn't sit well with some of Borbely's patients.

"When you pull the chute and the G-forces kick in where that harness is," Borbely says, gesturing on his chest where a pacemaker would be. "It can physically pull those leads out of place.

"Get it done early, kids," he adds with a smirk. "Once you have a pacemaker, you probably want to take that off your bucket list."

Long term, pacemaker parts need to be replaced when they reach the end of their life or if a complication, like scarring, infection or broken leads, arises. A cardiologist will [perform a procedure](#) on an inpatient or outpatient basis, depending on each person's circumstances.

All these things on your "pacemaker keep in mind" list are a small price to pay for a new lease on life.

"Patients went from 'I couldn't walk to my mailbox' to running a 5K," Borbely says.

If you or your loved one is a candidate for a pacemaker, you can learn more on the [OSF HealthCare website](#).