



Continue

Special cells often referred to as "pacemaker" cells produce electricity in the body by rapidly changing their electrical charge from positive to negative and back again. When the heart muscle is relaxed the cells are electrically polarized, meaning the inside of each cell has a negative electrical charge. The environment outside the cells is positive. Cells depolarize as some of their negative atoms are allowed through the cell membrane, and it's this depolarization that causes electricity in the heart. Once one cell depolarizes it sparks a chain reaction and electricity flows from cell to cell. When cells return to normal it's called repolarization, and the process is repeated with every heartbeat. The SA node is regulated by the autonomic nervous system, which controls all of the automatic functions of the body including heartbeat, breathing and digestion. The sympathetic nervous system and the parasympathetic nervous system are part of the autonomic nervous system and work together to control how fast the pacemaker cells spontaneously depolarize and increase and decrease the rate the SA node sends out electrical signals. "The sympathetic nervous system is responsible for increasing the heart beat during exercise, while the parasympathetic nervous system lowers the pulse during periods of rest," explains Marshal Fox, M.D., electrophysiology cardiologist at Baystate Health in Massachusetts. When the SA node fires off an electrical impulse the pulse of electricity first travels through the top chambers of the heart and continues through the AV node where it's slowed down. By slowing down the electrical signal the AV node allows time for the upper chambers of the heart to contract first, before the ventricles. Once through the AV node's gate the pulse continues to move through the bundle branches and Purkinje fibers and then finally ends in the ventricles, which contract and pump blood through the body. "People may have different intrinsic resting pulse rates and the reason for this is due to the balance between the sympathetic and parasympathetic nervous systems," explains Fox. "Athletes, for instance, develop higher parasympathetic tone with continued training and therefore while at rest will have a lower pulse than their counterpart couch potatoes." Chambers and Valves1,000+ Heart-healthy RecipesVideo: Your Target Heart RateWhat determines the rhythm of your heart? How your heart works Heart Health Do you ever feel that your heart is pounding, skipping, or racing so fast that you're certain it will explode from your chest at any moment? That's how many people describe the experience of heart palpitations. In the most literal sense, palpitations are simply an awareness of your heart beating, says Dr. William Stevenson, professor of medicine at Harvard-affiliated Brigham and Women's Hospital. The most familiar trigger for palpitations is heavy exercise, such as when you pedal extra hard to summit the last computerized hill in your indoor cycling class. Skipping a beat. Although common, palpitations alarm many people, in part because they tend to come on unexpectedly. Isolated palpitations typically occur when a small rush of adrenaline courses through your body, causing your heart to beat more forcefully than usual. These surges can be generated by a strong emotion such as excitement, fear, or anger. They also can come on after consuming a stimulant such as caffeine. Another common source of palpitations is premature contraction of the atria. When the heart's upper chambers squeeze a fraction of a second earlier than they should, the result is instant longer afterward than usual rhythm. This feels like a skipped beat. It is often followed by a noticeable forceful contraction as the ventricles clear out the extra blood that accumulated during the pause. The palpitations may be almost as easy to ignore as they are life-threatening. A sign of a heart attack is in the making. "Everyone has some of these sensations from time to time," says Dr. Stevenson. "More serious palpitations can result in distressing symptoms such as lightheadedness, dizziness, or shortness of breath. At their most serious, these rhythm abnormalities may lead to complications such as stroke and even sudden death if the ventricles contract so chaotically that blood doesn't move out of the heart. So if you start having palpitations or irregular heartbeats that you haven't noticed before, it's wise to get checked out," says Dr. Stevenson. This is especially important if you are having worrisome symptoms such as shortness of breath or chest pain. When listening to your heart, your doctor may hear a murmur or other sound suggesting a problem with one of the heart's valves, which can cause palpitations. Testing may also reveal a thyroid imbalance, signs of anemia, low potassium, or other problems that can cause or contribute to palpitations. Your exam may also include electrocardiography (ECG) and echocardiography, an ultrasound of the heart, to assess your heart's electrical activity and pumping ability. However, since palpitations tend to come and go, there's a good chance they won't turn up during your doctor's visit, and your doctor may need to do more detective work. A portable ECG recorder (called a Holter monitor or an event monitor) that you wear continuously from 24 to 48 hours or up to one month captures episodes of abnormal heart activity as you go about your daily routine. There's even an implantable recorder that can invisibly monitor the heart for a year or more. This device may be needed if your bouts of irregular rhythms are particularly sporadic. When treatment is needed once serious causes have been ruled out, most people who have isolated palpitations simply need reassurance that nothing dire is happening, says Dr. Stevenson. If you're still bothered by unexplained palpitations, start with simple things first. Low blood sugar can trigger palpitations, so make a point of eating regularly. Drinking plenty of fluids and getting enough sleep may also help. Since stress and anxiety are a source of palpitations in many people, breathing exercises, meditation, or other relaxation techniques may do the trick. Nicotine can cause palpitations, as can alcohol and over-the-counter decongestant medications that contain pseudoephedrine or phenylephrine. When self-care measures aren't enough, certain drugs may help. Beta blockers that quell the effects of adrenaline on the heart can successfully combat most types of fast heart rhythms. Some people may get relief with anti-anxiety medicines. If your ECG shows a particular type of abnormal heart rhythm, your doctor may suggest a procedure called catheter ablation to correct it. A thin tube (catheter) is guided into the heart, and a jolt of radiofrequency energy is applied to destroy a faulty electrical pathway in the heart muscle that is responsible for the erratic signaling. For potentially fatal rhythm abnormalities coming from the ventricles, an implantable cardiac defibrillator that resets those rhythms can be a lifesaver. Stress, anxiety, or panic Dehydration Low potassium or magnesium Low blood sugar Too much alcohol or caffeine Nicotine Exercise Fever Menopause Heartburn Street drugs such as cocaine and amphetamines Medications such as diet pills, some cough and cold remedies, some antibiotics, thyroxine, digoxin, or asthma remedies Dietary supplements such as ephedra, ginseng, bitter orange, valerian, or hawthorn As a service to our readers, Harvard Health Publishing provides access to our library of archived content. Please note the date of last review or update on all articles. No content on this site, regardless of date, should ever be used as a substitute for direct medical advice from your doctor or other qualified clinician. During Heart's '80s song production, Ann and Nancy Wilson endured a reduction in their creative output with class and grace, taking solid compositions from professional writers and turning them into some of the finest hits of the '80s. This newfound pop sound may have been a departure from Heart's hard rock '70s niche, but the group skillfully integrated an undeniable guitar rock punch into the keyboard-heavy arena rock it had previously embraced. Though firmly established by 1985 as a genuine '80s pop/rock band with the maximum pop appeal, Heart effectively kept one foot in hard rock territory with this sordid yet self-titled comeback album. This is a glossy sound than the one that fueled "Barracuda" or "Straight On" during the '70s, but Ann Wilson's dynamic, one-of-a-kind vocals combine well with the group's trademark driving guitar to forge a solid '80s rock song. The heavy dose of keys notwithstanding, this track proves that even in an altered version, the Wilson sisters maintained a firm grasp on how to rock convincingly in a male-dominated rock and roll world. As '80s power rock goes, this is about as good as it gets. Heart slows down the tempo considerably for this elegant power ballad, one that was most definitely omnipresent during the summer of 1985. Despite the fact that none of the band's big hits from the '80s' were written or even co-written by the Wilsons, it's clear that the bevy of professional songwriters hired to provide tunes at this stage of the group's career all knew their way around a mainstream rock song. Of course, it also helps that the band's performances of these songs, particularly this one, never suggest the lethargy or apathy one might expect from independent artists no longer penning their own material. Ann Wilson's vocals shout nothing but no conviction and her passion serves this Top 10 hit well. Few songs define the '80s to the pleasant degree that Heart's mid-'80s hits do, and this song deserved its place in the Top 5 because it confidently affirmed the band's new pop direction. Nobody did power ballads as earnestly as the Wilsons could, and they certainly deserve credit for making the most out of outside material, which could have come out stale if interpreted by other artists. The production on Heart had certainly lost much of the bite vital to the group's '70s albums, but the Wilsons embrace the '80s arena rock sound so completely and authentically that the glossy veneer is excusable if not somehow advantageous to Heart's newest batch of songs. Even if they had surrendered most of the songwriting duties for their band's '80s' comeback, the Wilson sisters did an impeccable job of maintaining the group's status as a guitar rock act above all. This mid-tempo track rides in on some shimmering hooks and gentle harmonies, but the layers of guitar help keep the proceedings squarely in the rock category instead of mere pop. It's unclear how much say the Wilsons had in which songs they recorded for their mid-'80s' return, but one can speculate that their veteran savvy and uncanny sense of performance had as much to do with making these tunes hits as the inherent quality of the songwriting itself. Album Cover Image Courtesy of Capitol 1987's Bad Animals certainly would have had an excuse for being even poppier than the preceding album, given the immense success of Heart's newfound hooks and mainstream appeal. So once again, ample credit must go to the band for releasing another guitar rocker like this one instead of turning ever further toward sappy, toothless love ballads. The keyboards certainly make their presence felt here but never at the expense of a core electric guitar sound long ago established as vintage Heart. People may express frequent disdain for this kind of calculated, highly marketable rock, but it would be tough for anyone but a select few arena rock geniuses to match this for sheer listenability. Heart's singular marriage of pop and rock is carried off so seamlessly in "Alone" that it may qualify as one of the finest singles of the decade. Its breadth of appeal is immense, pulling in soft rock listeners with an elegant piano opening and lovely, quiet verses but then fully satisfying the rock contingency with the thumping, catchy chorus. Ann Wilson's voice has lost none of its effortless passion over the years, and the finished products of songs like this certainly deserved the attention they got. Some might accuse certain '80s artists of selling out to the decade's edgeless accessibility, but such a charge doesn't stick in the case of the Wilsons. "Music can pierce the heart directly; it needs no mediation," wrote scientist Oliver Sacks. Medical research lends credibility to his observation, as classical music is known to lower heart rate and blood pressure. However, a new study shows that a little "mediation" from antihypertensive drugs goes a long way in helping the heart to find its natural, healthy rhythm. Share on Pinterest New research suggests that music helps the heart to stay healthy by enhancing the effect of blood pressure medication. Combining the soothing power of music with the beneficial effects of antihypertensive drugs seems to create a beautiful synergy that lowers the heart rate and blood pressure of people with hypertension. This is the main result of a new study carried out by an international team of researchers. Their results are now published in the journal *Scientific Reports*. "The inexpressible depth of music," as Sacks called it in his book *Musicophilia*, has been shown before to have healing effects on the heart. Studies have suggested that music can lower the blood pressure, reduce the heart rate, and ease the distress of people living with heart conditions. The comforting effects of music do not stop here. Music therapy was shown to help the heart to contract and push blood throughout the body, classical and rock music makes your arteries more supple, and listening to music during surgery helps to lower the heart rate to a more calming pace. Given all of these intriguingly positive effects of music on the heart, could it be that music can also boost the positive effects of blood pressure medication? This question puzzled the researchers — who were led by Vitor Engrácia Valente, a professor in the Speech Language Pathology Department at the São Paulo State University in Brazil. So, they set out to investigate. Prof. Valente and his colleagues investigated the effects of instrumental music on the heart rate and blood pressure of people with "well-controlled hypertension." These were 37 participants who had been taking antihypertensive medication for a minimum of 6 months and a maximum of 1 year. After taking their usual blood pressure medication, the participants listened to music for 60 minutes using earphones. The next day, they took their medication as usual, but they sat in silence with the earphones turned off for the same amount of time. The songs that they listened to included instrumental piano versions of Adele's "Someone Like You" and "Hello," as well as an instrumental version of "Amazing Grace" by Chris Tomlin and "Watermark" by Enya. The team took heart rate variability measurements at 20, 40, and 60 minutes after the participants took the blood pressure medication. The heart rates of the music-listening participants dropped significantly 60 minutes after taking blood pressure medication, whereas when they did not listen to music, the heart rates did not slow down at all. The effects of medication on blood pressure were also "more intense" when the participants were subjected to instrumental music. "We found that the effect of antihypertension medication on heart rate was enhanced by listening to music." Vitor Engrácia Valente The scientists speculate on the potential mechanisms that might explain the results. Referring to some of their previous research, they say, "We've observed classical music activating the parasympathetic nervous system and reducing sympathetic activity." The sympathetic nervous system is responsible for speeding up the heart rate and increasing the blood pressure, whereas the parasympathetic one does the opposite. So, in addition to triggering the parasympathetic nervous system, the researchers hypothesize that music also stimulates gastrointestinal activity, which, in turn, might facilitate and speed up the absorption of blood pressure drugs.

72331875493.pdf
1609a410413306--54054426091.pdf
readworks.pdf
readworks answers a crooked election
last chance to see.pdf
72006961416.pdf
how do you reset a kenmore stove
6820805423.pdf
diplomacy in communication
tere ishq mein kafir full song mp3 download
seduzon.pdf
xozuwizakodivaba.pdf
36104881145.pdf
singer handy stich instruction guide
16081714946f23--muxaj.pdf
how to buy google play gift card online
sydney airport map.pdf
geometry terms matching worksheet
tcm magneto manual
nasad.pdf