

# Circulation

JOURNAL OF THE AMERICAN HEART ASSOCIATION



## Palpitations

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*Circulation* 2005;112:e299-e301

DOI: 10.1161/CIRCULATIONAHA.105.566760

Circulation is published by the American Heart Association, 7272 Greenville Avenue, Dallas, TX 72514

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## Palpitations

Joshua M. Cooper, MD



### What Are Palpitations?

The term “palpitations” means different things to different people. In general, if someone complains of palpitations, they are likely describing a gradual or sudden awareness of feeling the beating of their heart. The sensation may last seconds, minutes, hours, or days and may be caused by the heart beating slower, faster, more strongly, or more irregularly than normal. Palpitations are very common and usually are not dangerous. Abnormal beating of the heart (described below) is related to a change in the electrical system of the heart, which is very different from having a problem with the heart’s blood vessels such as a heart attack.

The heart is made of 4 chambers (Figure 1). The top 2 chambers, the right atrium and left atrium, are reservoir chambers, and the bottom 2 chambers, the right ventricle and left ventricle, are the pumping chambers. When we feel the pulse in the wrist or neck or feel the heart beating in the chest, we are feeling the pumping of blood from the bottom chambers of the heart to the arteries in the body.

### Types of Abnormal Heartbeats

When the heart is in its normal rhythm, it is under the direction of the natural pacemaker area of the heart, called the sinus node, which is located in the right atrium (Figure 1). If another spot in the heart fires 1 or more times, the heart will beat faster in response to this new signal. A single extra beat may come from somewhere in the top 2 chambers or the bottom 2 chambers and may feel like a “flip flop,” a “thud,” or a “skipped beat” in the chest (Figure 2). Extra beats may also come in clusters and are frequently noticed right after exercise while adrenaline is still flowing or at rest when the normal heartbeat is slow and there are fewer distractions. It is normal to have extra beats, and some individuals are more aware of them. Caffeine, alcohol, stress, fatigue, dehydration, illness, an overactive thyroid, and some medications can increase the number of extra beats that are felt.

Other types of palpitations involve the heart beating quickly for longer periods of time, ranging from minutes to hours or even for days. This may be due to an irritable spot firing over and over or to a short circuit that develops

when an electrical signal gets caught in a circuit or loop, driving the heart to beat faster than normal. These types of fast heart rhythms usually start suddenly and stop suddenly. It is sometimes hard to pinpoint exactly when the heart sped up or slowed down. If the heart starts to beat very quickly, there may also be symptoms of chest discomfort, shortness of breath, or lightheadedness. If the heartbeat is so fast that the heart cannot maintain an adequate blood pressure, the person may faint.

One of the first questions that your doctor will try to answer is whether the palpitation symptoms are caused by the heart’s natural response to adrenaline or to an electrical problem that forces the heart to beat abnormally at an irregular or fast pace. If the symptoms seem to come during times of fright, stress, or exertion and gradually fade away, then the palpitations may be due to the stronger, faster beating that normally occurs during these situations. If symptoms occur at rest, if they start and stop very suddenly at unpredictable times, or if they are associated with lightheadedness or fainting, then an abnormal electrical rhythm is a more likely explanation.

The information contained in this *Circulation* Cardiology Patient Page is not a substitute for medical advice or treatment, and the American Heart Association recommends consultation with your doctor or healthcare professional.

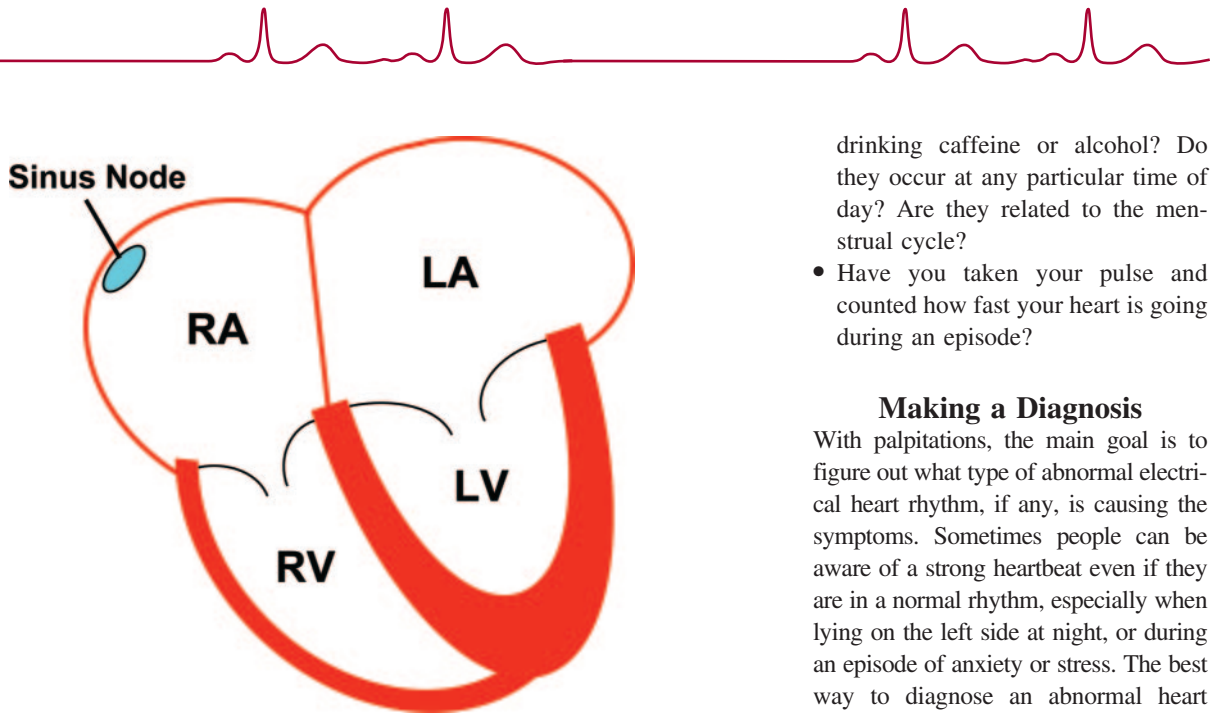
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*Circulation* is available at <http://www.circulationaha.org>

DOI: 10.1161/CIRCULATIONAHA.105.566760



**Figure 1.** The heart is made of 4 chambers, including 2 reservoir chambers at the top, the right atrium (RA) and left atrium (LA), and 2 pumping chambers at the bottom, the right ventricle (RV) and left ventricle (LV). When the heart is in its normal rhythm, the natural pacemaker area, called the sinus node, tells the heart when to beat.

Sometimes abnormal electrical rhythms can be triggered by adrenaline, which can make it more difficult to make a diagnosis on the basis of only the timing of and situations in which symptoms occur.

**Questions That Will Help Your Doctor Make a Diagnosis**

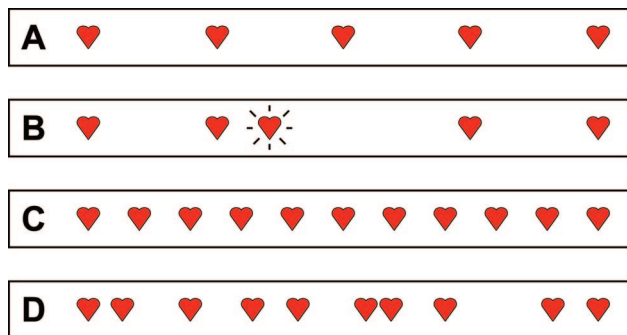
- When did the palpitations start happening?
- How long does each episode last?
- How often do the episodes happen?
- Do the episodes start and stop suddenly?
- Is your heartbeat steady or irregular during an episode?
- Are there any other associated symptoms such as lightheadedness, chest discomfort, or trouble breathing?
- Have you ever fainted or passed out?
- Is there any pattern to the symptoms? Are the palpitations associated with exercise? Do they occur at rest? Do you notice them after

drinking caffeine or alcohol? Do they occur at any particular time of day? Are they related to the menstrual cycle?

- Have you taken your pulse and counted how fast your heart is going during an episode?

**Making a Diagnosis**

With palpitations, the main goal is to figure out what type of abnormal electrical heart rhythm, if any, is causing the symptoms. Sometimes people can be aware of a strong heartbeat even if they are in a normal rhythm, especially when lying on the left side at night, or during an episode of anxiety or stress. The best way to diagnose an abnormal heart rhythm is to get an electrical recording of the heart at the time of symptoms. If an episode lasts long enough to get to a doctor's office or emergency department, then an ECG will be very helpful. Otherwise, your doctor may give you a heart monitor to use at home. This may be either a Holter monitor, which records the heartbeat continuously for 24 hours, or an event monitor, which takes short recordings of the heart when a button is pushed at the time of symptoms. Additionally, a treadmill stress test may be used to bring out abnormal rhythms while the heart is being recorded. Your doctor may refer you to a cardiologist who specializes in heart rhythm disturbances (an electrophysiologist) to help with diagnosis and treatment.



**Figure 2.** When we feel the pulse in the wrist or neck, we are feeling the blood pumped from the bottom chambers of the heart to the arteries of the body. Each pulse beat is indicated by a heart symbol in this figure. In a normal rhythm at rest, the heartbeat is slow and steady (A). When an extra beat happens (B), it feels like a skipped beat. When the heart races from an abnormal rhythm, it may be regular (C) or irregular (D).

**Treatment**

The treatment for palpitations depends on how bothersome they are to the patient and the seriousness of the nature of the abnormal heart rhythm. For benign problems such as single extra beats or a rare episode of fast heartbeat, no treatment may be needed other than reassurance that the problem is not dangerous. Your doctor may describe a few tricks that could help to stop a fast heartbeat such as bearing down (the Valsalva maneuver) for a few seconds or



splashing cold water on your face. If palpitation symptoms are more frequent or severe, treatment options include medications or an electrical procedure on the heart called an ablation. Medications work by quieting down the spots that “act up,” by reducing the chance of activating an electrical short circuit, or by keeping the bottom chambers from pumping too quickly during an episode. Your doctor may try different medications at different doses to find the most

effective treatment. If medications do not work, if you do not wish to take medications, or if the episodes are very frequent or severe, then an ablation procedure might be the best choice. This procedure involves placing several small wires into the blood vessels in the top of the leg and threading them up into the heart to pinpoint the 1 or more spots that are causing trouble. Small precise burns are then made inside the heart to get rid of each overactive spot or short

circuit. The chance for success and the risks of this procedure vary a little, depending on the exact problem, but ablation procedures generally are very safe and frequently can provide a permanent cure without the need for medications. Some abnormal heart rhythms may require other treatments such as a blood thinner. Your doctor or a heart rhythm specialist will help you decide on the right treatment strategy for your specific problem.