



PALPITATIONS

What are palpitations?

Palpitations are a sensation of an unusually fast, irregular, or more forceful heartbeat. Children may describe palpitations as a “beeping,” fluttering,” or “skipping” of their heart. Less commonly, children may describe a pain in their chest.

What causes palpitations?

Palpitations are very common, but are usually not concerning. The most common causes of palpitations include sinus tachycardia (see below), premature beats, or a heightened awareness of one’s heartbeat. Sometimes, palpitations can also be due to a heart rhythm abnormality. It is usually impossible to be certain about the cause of palpitations without seeing exactly what the heart is doing *while* the palpitations are occurring. This is done with a heart monitor like a Holter monitor or a Zio patch, which can record the heart’s electrical activity during the symptoms. If a child is not wearing a monitor when the palpitations occur, then checking the heart rate by feeling the pulse or wearing a smartwatch (like a Fitbit or an Apple watch) can give important clues about the cause of the palpitations.

Sinus tachycardia

Sinus tachycardia is a term that means the heart *rate* is faster than usual, but the heart’s electrical *rhythm* is normal. We experience sinus tachycardia very frequently – for example, when we are exercising. Other, common causes of sinus tachycardia include fear, illness, feeling anxious or having a panic attack, some medications (e.g. stimulants), caffeine, or nicotine. Sinus tachycardia also occurs in patients with autonomic dysfunction, such as orthostatic hypotension or POTS. In the large majority of cases, sinus tachycardia is benign and does not require treatment.

Heightened awareness

Our heart is beating all the time, but we are usually not consciously aware of each heartbeat. This is because our brain has the ability to filter out body sensations that may interfere with our ability to recognize important outside stimuli. At times, however, we can be aware of our heart beating. The reason for this hyperawareness cannot always be identified, but it seems to be more common in children who are anxious, or are sensitive to other bodily sensations like pain or temperature. Again, this is safe and does not require treatment.

Premature heartbeats

The heart has four chambers: a right and left atrium on top, and a right and left ventricle on the bottom. In the right atrium, there is a natural “pacemaker” called the sinus node; this is a specialized group of cells that starts each electrical impulse that causes a heartbeat. Other areas of the heart can also have this ability – that way, if the sinus node should ever fail, another part of the heart can take over. Sometimes, one of these other areas causes a heartbeat that happens earlier than a “normal” heartbeat from the sinus node. If this early beat comes from the top chambers, it is called a PAC, or premature atrial contraction. If it comes from the bottom chambers, it is called a PVC, or premature ventricular contraction. PAC’s and PVC’s are very common. We do not always feel them, but when we do, they can feel like an irregular, skipped, or more forceful beat. They are not dangerous, and typically do not require treatment, unless they are happening very frequently or are bothersome to the child.

Arrhythmias

Some people have abnormal electrical connections that cause the heart to race. The majority of these are not life threatening, but a few can be dangerous. A heart monitor or electrocardiogram (EKG) are necessary to make the correct diagnosis, so that the arrhythmia can be treated appropriately. Treatment usually consists of medication, or an ablation procedure, during which the abnormal electrical connections are eliminated.