

## When Teenagers Faint

Question: Should I be worried about my teenager's heart when she faints for no apparent reason?

A teenage girl, who attends the new childhood obesity clinic, recently shared that she'd had a fainting spell (known as syncope) earlier that day at school with her trainer and me.

The two most important things doctors and parents have to know about teenagers who faint are:

- Whether it happened while exercising
- Whether there are people in their families who've died from heart conditions, especially related to irregular heart rates

Fainting during exercise may be indicative of a cardiac cause such as obstruction of the outflow of blood from the heart (Aortic valve narrowing for example); an enlarged heart due to a genetic condition called Cardiomyopathy; or the Long QT Syndrome.

The Long QT syndrome is a congenital condition most easily diagnosed by a history of family members collapsing during athletic events. A detailed electrocardiogram (EKG) can confirm the diagnosis. A cardiology colleague once wrote that the EKG of these patients has a specific wave pattern known as "Torsades de pointes". (For more information on the Long QT syndrome see a previous article on my website [www.healthykids.ca](http://www.healthykids.ca) or e-mail me)

Fortunately, this girl's response was "No!" to both my questions about exercise-induced fainting and a family history of fainting.

So, what then, caused her fainting spell?

Well, like many of her peers, this girl did what predisposes most teenagers to fainting:

- She misses breakfast regularly
- She cuts corners on getting enough sleep
- She tends to drink caffeinated beverages throughout the day (which dehydrates her unless she replaces some of those losses with ordinary water)

Changing positions too rapidly can also cause a fainting spell. One of my colleagues told me that some teens leap out of bed in the morning and then faint. (Though none of my four kids are teenagers, I suspect that a teen leaping out of bed in the morning is an oxymoron...unless they've slept in and are rushing to catch the bus!)

In addition, there are some rare, but true, stories of children who get up from bed while half-asleep, the opportunity clock rings (pessimists call it the "alarm clock"), they're frightened by it, and they faint due to a neurologically-mediated reflex!

Sometimes teenagers will experience more episodes of syncope during a growth spurt and some teenage girls experience syncope more readily during their menses. About 25% of teenagers who experience syncope were breath-holders as toddlers.

Studies have shown that fainting occurs in 3 - 37% of the population. It is estimated that one in five individuals will have experienced a syncope episode before adulthood.

The financial cost for determining the causes of fainting for these patients is very high. It is estimated that a total of six diagnostic tests are done in the average Emergency Room.

Approximately 40% of patients who present to the pediatric ER are hospitalized for further investigations.

Later in life, syncope may take its toll further. Studies have shown that there is twice the incidence of panic disorders in adults with recurrent syncope than in adults in a control group.

If your child has fainted, seeing a doctor is essential. The doctor should get a complete history and pay special attention to your child's blood pressure. The doctor should do a cardiovascular examination and determine your child's neurological status.

The history should rule out any possibility of syncope due to exercise and all that that indicates.

Taking a careful blood pressure (BP) reading is important to rule out orthostatic hypotension. The patient should have the first BP taken lying down; they should remain in this position for at least 5 to 10 minutes; then they should be asked to stand up. If the BP drops greater than 20/10 mm mercury, they most likely have orthostatic hypotension. This explains why some teenagers collapse when they get up from the sitting position. (Giraffes, incidentally, never collapse when they lift their long necks up after drinking water; they have sensors which rapidly adjust their heart rate and cardiac output to compensate for the fast height changes)

Treating syncope involves lifestyle changes such as:

- Staying well hydrated
- Getting enough sleep (too much sleep may actually aggravate the problem)
- Never missing breakfast (I usually recommend a pre-made "smoothie" drink - the recipe can be found at [www.leankids.com](http://www.leankids.com) - that is rich in fat, protein, fruits and vegetables and is only drinkable with a thick straw, if your teen refuses to eat breakfast)
- Ingesting a bit more salt
- Employing isometric exercises such as crossing the legs or tensing the muscles when the patient feels he/she's about to faint

When all of the above maneuvers fail, you can always try a medication called, Florinef, which helps to retain salt and water. Some cardiologists may use beta blockers, but they are contraindicated in patients with asthma and a common side-effect is depression.

The good news for children who faint, and their parents, is that 90% of pediatric patients eventually have a spontaneous resolution of their symptoms without any intervention!

Access [www.healthykids.ca](http://www.healthykids.ca) for a terrific new resource in helping families raise healthy children - **Healthy kids with Dr Nieman** will optimize your child's complete health.

An **informed** parent is.....an **empowered** parent"