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What Is Serotonin Syndrome?

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Serotonin is a chemical produced by the body that enables [brain](#) cells and other [nervous system](#) cells to communicate with one another. Too little serotonin in the [brain](#) is thought to play a role in [depression](#). Too much, however, can lead to excessive nerve cell activity, causing a potentially deadly collection of symptoms known as [serotonin syndrome](#).

Serotonin Syndrome Symptoms

[Serotonin syndrome](#) symptoms often begin within hours of taking a new

[medication](#) that affects serotonin levels or excessively increasing the dose of one you are already taking. Symptoms may include:

- Confusion
- Agitation or restlessness
- Dilated pupils
- [Headache](#)
- Changes in [blood pressure](#) and/or temperature
- [Nausea](#) and/or [vomiting](#)
- [Diarrhea](#)
- Rapid [heart rate](#)
- Tremor
- Loss of muscle coordination or [twitching](#) muscles
- [Shivering](#) and goose bumps
- Heavy [sweating](#)

In severe cases, serotonin syndrome can be life threatening. If you experience any of these symptoms, you or someone with you should seek medical attention immediately:

- [High fever](#)
- [Seizures](#)
- [Irregular heartbeat](#)
- Unconsciousness

Serotonin Syndrome Causes

Serotonin syndrome can occur if you are taking medications, particularly [antidepressants](#) that affect the body's level of serotonin. The greatest risk of serotonin syndrome occurs if you are taking two or more drugs and/or [supplements](#) together that influence serotonin. The condition is more likely to occur when you first start a medicine or increase the dose.

The most commonly prescribed class of [antidepressants](#), which work by increasing serotonin, are the serotonin reuptake inhibitors (SSRIs). These include [citalopram](#) ([Celexa](#)), [escitalopram](#) ([Lexapro](#)), [fluoxetine](#) ([Prozac](#)), fluvoxamine ([Luvox](#)), paroxetine ([Paxil](#)), and [sertraline](#) ([Zoloft](#)).

Other prescription and over-the-counter drugs that can raise serotonin levels alone or in combination to cause serotonin syndrome include:

- **Serotonin and norepinephrine reuptake inhibitors (SNRIs)**, a class of antidepressants including desvenlafaxine ([Khedezla](#)), desvenlafaxine succinate ([Pristiq](#)), duloxetine ([Cymbalta](#)), levomilnacipran ([Fetzima](#)), and venlafaxine ([Effexor](#)).
- **Monoamine oxidase inhibitors (MAOIs)**, a class of antidepressants including [isocarboxazid](#) ([Marplan](#)), [phenelzine](#) ([Nardil](#)), [tranylcypromine](#) ([Parnate](#)), and transdermal selegiline (EMSAM)
- **Buspirone (BuSpar)**, a drug used to treat [anxiety disorders](#)
- **Desyrel (Trazodone)**, a drug prescribed for [depression](#) or [insomnia](#)
- **Migraine treatments such as almotriptan** ([Axert](#)), [Amerge](#) ([naratriptan](#)), [rizatriptan](#) ([Maxalt](#)), [sumatriptan](#) ([Imitrex](#)), and [zolmitriptan](#) ([Zomig](#))
- **Certain pain medications**, including [fentanyl](#) ([Sublimaze](#), [Fentora](#)), fentanyl citrate ([Actiq](#)), [meperidine](#) ([Demerol](#)), [pentazocine](#) ([Talwin](#)), and [tramadol](#) ([Ultram](#))
- **Dextromethorphan** , a [cough suppressant](#) found in many over-the-counter and prescription [cough medicines](#) or cold medicines

- **Certain medications prescribed for nausea, such as** [granisetron](#) ([Kytril](#)), [metoclopramide](#) ([Reglan](#)), and [ondansetron](#) ([Zofran](#))
- **Antidepressants that affect multiple serotonin receptors, such as** vortioxetine ([Trintellix](#) -formerly [Brintellix](#)) and vilazodone ([Viibryd](#))

Some illegal drugs, such as LSD and [cocaine](#), and [dietary supplements](#), including St. John's wort and ginseng, can also lead to serotonin syndrome when combined with antidepressants that affect serotonin.

The FDA recently asked drug manufacturers to include warning labels on their products to let patients know about the potential risk of serotonin syndrome. If you are uncertain about drugs you take or have been prescribed, check the label or speak with your doctor. Don't stop any medication before talking to your doctor.

Serotonin Syndrome Diagnosis

There is no single test to diagnose serotonin syndrome. Your [health care](#) provider will ask about your medical history, including medication, supplement, and recreational drug use, and perform a [physical exam](#). Other conditions may cause symptoms that are similar to serotonin syndrome. Lab tests to exclude other causes of symptoms may be ordered.

Serotonin Syndrome Treatments

People with serotonin syndrome are typically hospitalized for observation and treatment of symptoms. For example, benzodiazepines are given to treat agitation and/or [seizures](#). Intravenous fluids are given to maintain [hydration](#). Removing the drug responsible for the serotonin syndrome is critical. [Hydration](#) by intravenous (IV) fluids) is also common. In severe cases, a medication called [cyproheptadine](#) ([Periactin](#)) that blocks serotonin production may be used.

WebMD Medical Reference | Reviewed by [Joseph Goldberg, MD](#) on February 9, 2017

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