

Serotonin syndrome

This information sheet will help you understand more about serotonin syndrome. It is not a substitute for talking with your doctor, nurse or pharmacist.

Serotonin syndrome develops when there is too much serotonin in the brain. It is associated with the use of some medicines. It can present with a variety of symptoms from mild to potentially life-threatening.

What is serotonin syndrome?

Serotonin syndrome (also referred to as serotonin toxicity) is associated with the use of some medicines. A list of medicines linked to serotonin syndrome is shown in Table 1. Serotonin syndrome is more likely if you take more than one medicine listed in Table 1.

Serotonin is a chemical found naturally in the body. Some medicines can increase the amount of serotonin. Serotonin syndrome develops when there is too much serotonin in the brain. This can occur when:

- a medicine in Table 1 is started or the dose is increased
- two or more medicines from Table 1 are taken together
- an overdose of a medicine from Table 1 is taken.

What medicines can cause serotonin syndrome?

Medicines that may cause serotonin syndrome include over-the-counter medicines as well as prescription medicines (see Table 1 for a list of medicines).



Medicines that are possibly linked with serotonin syndrome are some antimigraine agents (sumatriptan, rizatriptan, zolmitriptan) and anti-nausea agents (ondansetron, granisetron).

Table 1: Medicines and supplements linked to serotonin syndrome (list not exhaustive)

Medicine/drug group	Examples
Selective serotonin reuptake inhibitors (SSRIs)	citalopram, escitalopram, fluoxetine, fluvoxamine, paroxetine, sertraline, dapoxetine
Tricyclic antidepressants (TCAs)	clomipramine, imipramine, amitriptyline, nortriptyline
Serotonin-noradrenaline reuptake inhibitors (SNRIs)	venlafaxine, duloxetine
Other antidepressants	mirtazapine
Monoamine oxidase inhibitors (MAOIs)	moclobemide, phenelzine, tranylcypromine
Analgesics (pain killers)	pethidine, fentanyl, tramadol
Herbal products	St John's wort
Miscellaneous	Methylene Blue (dye for diagnostic procedures), linezolid (antibiotic), dextromethorphan (cough suppressant)

How do I know if I have serotonin syndrome?

Serotonin syndrome includes a range of different symptoms (effects), outlined in Table 2. You may only experience some of these symptoms. The most important symptom that doctors use to diagnose serotonin syndrome is muscle spasms you can't control.

Symptoms of serotonin syndrome usually occur within hours to days of the person taking the medicine or changing the dose of the medicine.

What should I do if I think I have serotonin syndrome?

If you are worried about the effects of your medicine, seek medical advice immediately.

Where can I find more information about my medicines?

Talk to your doctor, nurse or pharmacist.

You can also find more information in the consumer medicine information section of the Medsafe website: www.medsafe.govt.nz/consumers/cmi/CMIForm.asp

Table 2: Symptoms of serotonin syndrome

Alterations of mental state

Agitation or restlessness

Confusion

Anxiety

Effects on functioning of internal organs (autonomic effects)

High blood pressure (hypertension)

Rapid heart rate (tachycardia)

Raised body temperature (hyperthermia)

Rapid breathing (tachypnoea)

Dilation of the pupil of the eye (mydriasis)

Profuse sweating (diaphoresis)

Shivering

Vomiting

Diarrhoea

Irregular heart rate (arrhythmia)

Effects on nerves that control voluntary muscle movement (neuromuscular effects)

Tremors

Muscle spasms you can't control – usually jerks (clonus)

Over-responsive reflexes (hyperreflexia)

Muscle rigidity (hypertonia)

