

About Fibro Fact Sheets

Information on Fibromyalgia Syndrome Fact Sheet 3

What Causes Fibro?

The root cause of Fibro is as yet unknown, but research continues to explain the mechanisms behind what happens with Fibro.

Research has shown that there may be genetic factors involved in Fibro that could lead to a genetic susceptibility to the condition. If you have a close family member with the condition, you are more likely to develop Fibro, but you will not definitely do so^{3,13}.

For some people, the onset of Fibro is slow or happens in early childhood, but for many people Fibro is triggered by a known event or series of events, such as an illness or injury.^{1,3} The possible genetic susceptibility could help to explain why these traumatic events lead to Fibro in some people and not others and a high genetic susceptibility may mean that a lesser trigger is needed for someone to develop Fibro, or that they could develop a more severe case of Fibro.³

Pre-existing conditions (even if the other diagnosis comes after the Fibro diagnosis), such as Hypermobility Syndrome, Lupus or Rheumatoid Arthritis can also lead to Fibromyalgia, when it is then often referred to as secondary Fibro.³ Hypermobility Syndrome in particular is now thought to be a risk factor for developing Fibro



Most researchers agree that Fibro is a central processing disorder with changes in the neuroendocrine/neurotransmitter systems^{2,26} (the systems that transmit messages around the body) and there is an increasing body of evidence to show that Fibro is a Central Nervous System related disorder⁴. Fibro is sometimes called a central sensitisation syndrome.²

Abnormal processing by the central nervous system causes the pain amplification that people with Fibro experience. The changes in the neuroendocrine/neurotransmitter systems also explain many of the other Fibro symptoms.³

Scientific studies continue to produce evidence about the differences to be found in people with Fibro compared to healthy people.

Key findings include:

- Increased levels of the pain-transmitting chemicals substance P and nerve growth factor in the spine¹¹.
- An extreme response to pain in the brain¹⁴: with a functional MRI scan, the parts of the brain that deal with pain are seen to light up from a significantly smaller pain stimuli in people with Fibro compared to healthy people¹⁵.
- Disrupted stage 4 (deep) sleep, meaning that sleep is non-restorative, even if the person with Fibro sleeps through the night¹⁶. Two studies have shown that artificially disrupting stage 4 sleep in a similar fashion for 3 or more nights in a row will lead to Fibro-like symptoms developing in healthy people^{12,17,18}.
- Reduced availability of opioid receptors, explaining why opioid medications are less effective in people with Fibro¹⁹.
- A subset of people with Fibro have been shown to have positional cervical cord compression, meaning that the spinal cord in their neck is compressed when they lean their head backwards. This finding is still being studied, but this positional cervical cord compression could be a reason for the autonomic nervous system to be disrupted. People with Fibro who have this particular abnormality may benefit from a specific physical rehabilitation program to stabilise the neck, but it is still relatively early days in this area of research²⁰.
- Accelerated brain grey matter loss²¹.
- Abnormalities in the dopamine systems of the brain, including a reduced dopamine response to pain. As dopamine is thought to act as the brain's "filter", these findings could help explain the autonomic dysfunction and central sensitisation of Fibro.^{22,23,24,25,26,27} A few medications that boost dopamine in the brain are used as treatments for Fibro (pramipexole/Mirapexin and nefopam/Acupan) and some people do very well with these.
- Changes to the Hippocampus, a part of the brain involved in many processes, including pain perception and memory formation^{28,29}.
- Dysregulation of the HPA (hypothalamic-pituitary-adrenal) axis, which is a complex set of interactions between the hypothalamus, the pituitary gland, and the adrenal gland. The HPA axis controls reactions to stress and regulates various body processes including digestion, the immune system, mood, and energy usage⁸.
- Dysfunction of the Autonomic Nervous System³⁰.
- Altered blood flow in the brain³¹.

References available online at: <http://www.fibroaction.org/Pages/About-Fibro-References.aspx>

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