

Glial Cells and How the Body Responds to Injury

Every now and then — and it really is rare — someone finds that using the Oska Pulse seems to make their pain worse. Typically, it works well for the first few sessions, but then the original pain returns. If they're willing to stick with it, that flare-up usually settles down again, and the Oska Pulse goes on to do its job well. So, what's going on here? Let's explain it gently.



So Why Does This Happen?

Part of the answer may lie in a particular kind of brain cell called a glial cell (sometimes just “glia”), the most common cell in your central nervous system — that's your brain and spinal cord. Unlike neurons, the cells that carry electrical messages, glial cells don't conduct electricity themselves. Their job is more of a support role: they act a bit like glue, holding neurons in place, protecting them, and keeping them nicely separated from one another.

There are several types of glial cells. Some deliver oxygen and nutrients to the neurons; others act like the body's rubbish collectors, clearing away germs and dead cells. In fact, there are five main types, but two of them — astrocytes and microglia — are thought to lead the response when tissue is injured.

Astrocytes are star-shaped cells that help form the brain's physical scaffolding and are common around insulated nerve fibres. They're real multitaskers and play a vital part in keeping the brain's wiring working. Microglia are much smaller and act as the brain's own immune system, springing into action whenever there's inflammation in the central nervous system.

Here's the interesting bit. These two cell types react to “something happening” at the site of an old injury. It's a little like poking a stick at a beehive — they raise the alarm and send a warning signal to the nervous system. Once they realise it's a false alarm and there's no real threat, they stand down and let normal healing carry on. That brief “alarm” may be what some people feel as a temporary increase in pain.

So in those uncommon cases, our advice is simple: move the Oska Pulse about 4 or 5 inches away from the sore spot for the next three or four sessions, and gently push through the uncomfortable phase. It's actually a sign that Oska is trying to do its work. A little persistence usually pays off. In our 20 years with this technology, only a very small number of people have found they couldn't get on with PEMF therapy at all.

A Closer Look at Glial Cells and Why They Matter

Glial cells — also known as glia or neuroglia — are found throughout the central nervous system (brain and spinal cord) and the peripheral nervous system (the nerves running through the rest of your body). They support and protect the neurons, the cells that do the actual job of carrying information through electrical and chemical signals. Glia keeps the neighbourhood around each neuron healthy, supplying them with nutrients and managing the fluid that surrounds them. Here are the main types:

- **Astrocytes:** these star-shaped cells help maintain the blood-brain barrier (the protective filter that decides what's allowed to pass from the bloodstream into the brain), feed the nervous tissue, keep the surrounding chemistry in balance, and help with repairs after injury.
- **Oligodendrocytes:** in the brain and spinal cord, these produce myelin — a fatty coating that wraps around the “wires” of the neurons, rather like the insulation on an electrical cable. This coating helps signals travel faster.
- **Schwann cells:** these do a similar myelin-making job, but out in the body's peripheral nerves. Each one insulates a single stretch of a nerve fibre.
- **Microglia:** the resident clean-up and defence cells of the central nervous system, clearing away waste and debris and acting as its front-line immune protection.
- **Ependymal cells:** these line the fluid-filled spaces in the brain and the central canal of the spinal cord, helping to make and circulate cerebrospinal fluid — the cushioning liquid that supports and protects the brain and spinal cord inside their bony casing.

In short, glial cells are absolutely essential to a healthy nervous system. They don't just support and shield the neurons; they also fine-tune how nerve messages are passed along, shape how efficiently the whole network runs, and, when their own function goes awry, can contribute to neurological illness.

To read more about how immune and glial cells contribute to lingering pain, have a look at the article “Beyond Neurons”, available here:

<https://oska-education.s3.amazonaws.com/Beyond%20Neurons.pdf>

Michael Hawker,
Founder, Technical Director.
Medic Technology International Pty Ltd
www.oskapulse.au www.medictechnology.com.au

20th November 2025 ©