

PANS, PANDAS and Trauma - Understanding and Healing



Dr Naomi Fisher
Clinical psychologist

Section one

Trauma and the brain

What happens in our brains when we experience trauma?

So many parents contact me with strange symptoms, both in themselves and in their children. They say that they are jumpy, or that they have nightmares about getting emails. They feel on a knife edge all the time. They ask me whether it could be PTSD – but then it doesn't usually meet diagnostic criteria. That's because in order to get a diagnosis of post-traumatic stress disorder (PTSD) an event has to be 'Criterion A' – i.e. involving the exposure to death, threatened death, actual or threatened serious injury, actual or threatened sexual violence. This exposure can be direct or indirect.

However, psychological trauma isn't just about exposure to injury and violence. It's about the way our brains and bodies react to events. And for that, it's not so much what actually happened which matters, it's what you experienced that matters. If you think that you are in danger and not safe, that can cause long term negative effects, even if actually you are never at risk.

This is because of the way our survival system works.

The Survival System

We all have a system in our body designed to keep us alive. When our brains think that something dangerous is happening, this survival system gets triggered. It prepares our bodies for fight, flight, freeze or fawn – essentially, all ways to keep ourselves safe from an attack by a wild animal.

This response is triggered by the amygdala, a small almond shaped part of our brain. The amygdala is triggered by what it perceives to be dangerous – and it's a quick-fire system. There's no time to lose if you might be attacked by a lion. Your brain needs to react before you can think it through.



In order for our amygdala to effectively predict the things which are dangerous, it collects memories of times when we felt under attack. If you've ever been in a car accident, or been mugged, those memories will have been stored in your amygdala.

The amygdala uses those memories as clues, in order to better detect danger in the future. It looks for matches between those memories, and the world around us. If there's a match, then it triggers the survival system.

This is why, after a car accident, many people are scared to get back in the car, or to walk along a busy road. The amygdala is reacting to every car as a threat. It sets off the alarm and your body goes into fight, flight, freeze or fawn. From the perspective of survival, it's much better to be regularly scared by something which isn't dangerous than for the amygdala to miss a dangerous situation.

The memories in the amygdala are stored in a different way to other memories. They are a bit more chaotic, fragmented, and often there is not much of a story. Other memories are stored in our hippocampus. Memories there are stored in a way which is like a filing system. There are clear stories, and we can choose to think about them when we want to. When we think of those memories, we can tell they are in the past. Amygdala memories are different. When they get triggered, it feels like it's happening all over again. It's more like the cupboard under the stairs, where the memories have been crumpled up and shoved in.

Can you think of a time when you had a frightening experience, and then afterwards you were scared of something which before you hadn't found scary? This can happen for all sorts of things. Lifts, buses, spiders, the sea – I've even worked with someone who was scared of baked beans after a nasty experience where one got stuck up his nose...

This is your amygdala doing its job. It's trying to keep you safe, by using your past experiences to predict what might be dangerous in the future. It would rather keep you alive than let you stay calm.