- Brain

BETTER LIVING THROUGH SCIENCE



BRAIN FREEZE

How to use one of the body's stress responses for better decision making

Have you ever felt so stressed that you just sort of froze? It's a strange sensation. Your body goes still, you feel kind of numb but, at the same time, your senses are working overtime. You know you have to act soon, but it's as if there's a brake on the system.

If you know the feeling, there's a good chance that a moment of great stress triggered it. Psychological freezing is an adaptive defence response to stressful or dangerous situations. Like our fight-or-flight response, it evolved in animals as part of the automatic reaction our nervous system mounts when we experience either real or imagined threats.

When we freeze, our heart rate drops, our breathing slows and our blood pressure changes. Our pupils might dilate and our muscles can tense. A cascade of hormones and neurotransmitters surge through our bodies to prime us for action. It can all happen within seconds.

While fight-or-flight makes a certain amount of sense – to fight off an enemy or leg it from a predator – the freeze response seems a little counterproductive. It appears to momentarily overwhelm a person, making them incapable of acting or making a decision. In extreme cases, it may prevent them from moving at all.

But is that really all that's going on? Not according to Prof Karin Roelofs, a neuroscientist and clinical psychologist who studies freezing at Radboud University in the Netherlands.

"Many people think that freezing is a kind of shutdown of the system. Something happens and all of a sudden you're freezing and can't move," she says. "What we actually find is when you're in a threatening situation and you have to make rapid decisions, you're actually gaining more information. You're preparing your actions, you're better in perception and you're better in decision making."

In other words, freezing is something like an emergency flow state. It puts you 'in the zone' – you're alert, but not panicking. The parasympathetic nervous system kicks into action and gives you a degree of calm when you need it the most. "It's a very beneficial state," Roelofs says.

What's really intriguing is that she believes this system can be trained and even induced in a person. It can be a tool to pre-emptively deal with stress or to improve performance in a range of different scenarios. Roelofs offers two very different examples of people who are able to control the freeze response to their advantage.

One is living statues, those street performers you see in tourist hotspots who are able to stay almost unnaturally still. The other? Snipers. Military marksmen also stay incredibly still, while simultaneously making critical decisions about accuracy and when to take a shot in a life-or-death situation.

It's something Roelofs has replicated in the lab and her work has also been integrated into training for the Dutch police. She created a virtual reality shooting game where players "have to make decisions on a threat and we force them to keep their heart rate in a certain area."

"We found that the stronger the magnitude of the freezing [based on measurements of players' heart rates], the better they were at the game and the faster they were in their decisions."

It's tempting to think that if you freeze in a stressful situation, your response will be slower. The opposite is true because the freeze provides a moment of clarity, Roelofs says. "There is less noise in our brain. And we have increased perception. What we showed is that you're actually making better decisions faster, and you have a sharper view of the potential costs and benefits of your actions."

But let's say you're not a sniper, or don't spend your weekends as a living statue. What if you're about to take an exam or lead a big business meeting? What if you're an athlete needing a big performance? Those situations may not be life or death, but Roelofs has shown that the freeze response can still help, because it's not only triggered by physical threat, but in social situations as well. Her research found that even an angry face can cause a freeze response.

Exploit that response – learn to train and maintain it, Roelofs says. "The maintenance of this state is something we can train via breathing," she says. "Do the opposite of hyperventilating. Have a strong focus on a very slow exhalation. If we can stay in the same rhythm, we keep the heart rate low, increase parasympathetic activity and have less noise in the brain."

Instead of feeling out of control, you can master it and – sniper or not – take your best shot. **SF**

by **IAN TAYLOR**
Ian is a freelance science writer and the former deputy editor of BBC Science Focus.

"FREEZING IS SOMETHING LIKE AN EMERGENCY FLOW STATE. IT PUTS YOU 'IN THE ZONE'"

ILLUSTRATION: MARTA LANUZA

https://www.pressreader.com/uk/focus-science-and-technology/20250610/page/90 1/1