Spiders. Clowns. The Dark. Heights. Zombies. Ghosts.

These are just a few frights that can make people a little more than just uneasy. When it comes to unreasonable fears, the initial reaction might be to tell the person to “toughen up”. However, science tells us that our brain’s recreation when we are afraid, is in fact, to “toughen up”.

Even though some fears are based on cultural influences, like black cats or killer clowns, there are also natural triggers of fear. Neuropsychiatrist Dr. Katherine Brownlowe, chief of the Division of Neurobehavioral Health and The Ohio State University Wexner Medical Center, told Live Science “Typically, those [fears] are things that are going to make you die. Heights, animals, lightning, spiders, somebody running after you in a dark alley—generally, people have some kind of fear response to those kinds of things.”

These natural fears develop at a young age, influenced by environment and culture. We learn most fears as children by building them from cues from our parents. Along with the learned fear, the predisposed fear mentioned above could be due to evolution, according to **Seth Norrholm**, translational neuroscientist at Emory University, who said “Back in our ancestral age, young children learned not to pick up snakes and spiders because they’re venomous.”

There have even been studies where both children and adults were asked to point out snakes and spiders from a group of pictures. The test subjects reacted much quicker to point out the dangerous images, then when they were asked to point out non-threatening images, like flowers.

Past our young years, as an adult our fears are developed due to association. Norrholm used a severe comparison of a combat veteran who witnessed an IED in a shopping bag. Having survived the trauma, the vet is redeployed and sees another shopping bag and will have a

fight or flight response. This is an association that has been made between the cue and the fear outcome.

This observation could be part of the reason why Halloween decorations affect children so much, it is all about the context that surrounds the day. Norrhold says, “A young child may not know that a skeleton is scary, until his parents say over and over how skeleton decorations are spooky.”

The fight or flight response is a concept that we have all encountered. It is when you are faced with a fear and your body’s jolt reaction is to either run or combat the problem in front of you.

The fight and flight responses provide two roadways in your brain. One road goes to the brain’s sensory system in the amygdala. It’s when you either see, smell, or hear something that could signal fear to your brain. It is an adrenaline response that causes your heart to beat faster and beads of sweat to start dripping down your forehead.

The second road directs the fear senses to the higher cortical center in the brain. This allows the brain to rationalize the bear and has the ability to override the fear senses. Your brain does this by pulling memories based on experiences associated with the fear, allowing you to tell yourself you have seen this before, and there is nothing to worry about.

Norrholm also presents the idea that people seek out their fear in order to gain pleasure, due to the release of dopamine at the moment of fright. Dopamine is a neurotransmitter that

controls the brain's reward and pleasure centers.

So, the more thrill-seekers go after dangerous behavior, the better they are able to engage the cortical center of the brain to provide the rational context that their behavior is not actually dangerous. This is applicable to things like extreme sports.

While there are thrill-seekers who want to be scared via an action, there are also the people who genuinely enjoy being scared, like watching horror movies.

"Some people are wired to seek out highly sensational experiences." Said **Glenn Sparks**, a communications professor at Purdue University, who specializes in the cognitive and emotional impact of the media. "They get the adrenaline rush."

However, your brain is wired, be it a thrill-seeker, an adrenaline junkie, or someone who takes the option of flight, studies have shown that we can overcome most of our fears by being constantly exposed to them. This overexposure builds a tolerance for them, allowing for the cortical center of our brain to be able to rationalize the fear the next time we are confronted with it.

Being frightened isn't always a bad thing though! Don't forget that it is initially a survival mechanism for humans for millions of years, so don't worry if you never want to overcome your fear of creepy clowns.

Summary

Article Name

The Science Behind Your Fear

Description

Everyone is scared of something, be it rational or irrational. However, we will discuss what chemically happens in your brain when confronted with fear