Fear and Excitement

If you enjoy horror movies, you know that fear can be exciting. Many people enjoy being afraid -- the arousal that comes with the fight-or-flight response can be pleasurable and can even mimic sexual arousal. It's no wonder so many people go to see scary movies and ride [roller coasters](http://www.howstuffworks.com/roller-coaster.htm) on dates.

There is actual scientific evidence that supports the fear-attraction connection. Psychologist Arthur Aron conducted a study using the very common fear of heights. Aron had one group of men walk across a 450-foot-long, unstable-feeling bridge suspended over a 230-foot drop; he had another group of men walk across a perfectly stable-feeling bridge over the same height. At the end of each bridge, the men met Aron's very beautiful female assistant. She asked each subject a set of questions related to an imaginary study and then gave him her phone number in case he wanted more information. Of the 33 men who'd walked across the stable bridge, two called the assistant. Of the 33 who'd walked across the swaying bridge, nine called. Aron concluded that the state of fear encourages sexual attraction.

**Common Fears**

|  |
| --- |
| PhobiasA phobia is an intense and persistent fear that is not based on any rational sense of imminent danger and prevents participation in activities that might arouse it. There are three main types of phobia: **Agoraphobia**: fear of places where escape might not be easy or where help might not be readily available if something bad happens **Social phobia**: fear of encounters with other people **Specific phobias**: fear of a particular thing or situation, such as snakes, public speaking, heights or the sight of blood |

A Gallup Poll conducted in 2005 reveals the most common fears of teenagers in the United States. The top 10 list goes like this:

1. Terrorist attacks
2. Spiders
3. Death
4. Failure
5. War
6. Heights
7. Crime/Violence
8. Being alone
9. The future
10. Nuclear war

Most of these basic fears are carried into adulthood. Other common fears include public speaking, going to the dentist, pain, [cancer](http://health.howstuffworks.com/cancer.htm) and [snakes](http://health.howstuffworks.com/snake.htm). Many of us fear the same things -- so are there such things as universal fears?

Some studies show that humans might be genetically predisposed to fear certain harmful things like spiders, snakes and rats -- animals that once posed a real danger to human beings because they were poisonous or carried disease. Fear of snakes, for example, has been found in people who have never even been in the presence of a snake. This makes sense if you think about fear as an evolutionary instinct embedded in the human consciousness. This idea of the universal fear is supported by such reputable sources as popular television: NBC's "Fear Factor" offers a weekly $50,000 prize to the contestant who can perform tasks like sticking his head into a box filled with hundreds of spiders and eating a blended rat smoothie.

The idea is also supported by scientific research. Psychologist Martin Seligman performed a classical conditioning experiment in which he showed subjects pictures of certain objects and then administered an electric shock. The idea was to create a phobia (an intense, irrational fear) of the object in the picture. When the picture was of something like a spider or a snake, it took only two to four shocks to establish a phobia. When the picture was of something like a flower or a tree, it took a lot more shocks to get a real fear going.

But while there may be "universal fears," there are also fears that are particular to individuals, communities, regions or even cultures. Someone who grew up in the city probably has a more intense fear of being mugged than someone who has spent most of his life on a farm. People living in South Florida may have a stronger fear of [hurricanes](http://health.howstuffworks.com/hurricane.htm) than people living in Kansas, and people in Kansas probably have a deeper fear of [tornadoes](http://health.howstuffworks.com/tornado.htm) than do people in Vermont. What we fear says a lot about our life experience. There is a phobia called *taijin kyofusho* that is considered in the psychiatric community (according to the [DSM IV](http://health.howstuffworks.com/framed.htm?parent=fear.htm&url=http://allpsych.com/disorders/dsm.html)) to be a "culturally distinctive phobia in Japan." *Taijin kyofusho* is "the fear of offending other persons by an excess of modesty or showing respect." The intricate social rituals that are part of life in Japan have led to a Japanese-specific fear.

Experiencing fear every now and then is a normal part of life. But living with chronic fear can be both physically and emotionally debilitating. Living with an impaired immune response and high blood pressure causes illness, and refusing to participate in daily activities because you might be confronted with heights or social interaction doesn't make for a very fulfilling life. So what can we do about our fears?

**Overcoming Fear**

|  |
| --- |
| Fear disordersAccording to the [National Institute of Mental Health](http://health.howstuffworks.com/framed.htm?parent=fear.htm&url=http://www.nimh.nih.gov/), 19 million people in the United States alone suffer from mental illnesses that involve irrational fear responses. These disorders include generalized anxiety disorder, panic disorder and post-traumatic stress disorder. |

Studies have shown that rats with damaged amygdalas will walk right up to cats [[ref](http://health.howstuffworks.com/framed.htm?parent=fear.htm&url=http://www.sfn.org/index.cfm?pagename=brainBriefings_fearAndTheAmygdala)]. Most of us aren't too keen on the prospect of going at our amygdala with an ice pick, though. So scientists are exploring other ways to overcome fear.

**Fear extinction**
Whereas Little Albert learned to fear white rats in the 1920s, rats learned to fear a simple noise more than 80 years later. Scientist Mark Barad of UCLA performed an experiment in which he and his team combined a noise with an electric shock. They would play the tone and then immediately apply a shock to the metal floor of the rats' cage. It was classical conditioning, and it didn't take long for the rats to brace themselves for the shock as soon as they heard the sound. At that point, their amygdalas paired the sound with the shock, and the sound created a fear response. The researchers then began the process of fear-extinction training, in which they made the sound but did not apply the shock. After hearing the sound very often without the shock, the rats stopped fearing the noise.

Fear extinction involves creating a conditioned response that counters the conditioned fear response. While studies situate the amygdala as the location of fear memories formed by conditioning, scientists theorize that fear-extinction memories form in the amygdala but then are transferred to the **medial prefrontal cortex** (mPFC) for storage. The new memory created by fear extinction resides in the mPFC and attempts to override the fear memory triggered in the amygdala.

Most behavioral therapies for fear extinction focus on **exposure**. For instance, therapy for a person with a fear of snakes might involve visiting a snake farm repeatedly and taking small steps toward touching one. First, the person might get within 10 feet of the snake and see that nothing terrible happens. Then he might get within 5 feet of the snake. When nothing terrible happens within 5 feet of the snake, he might get close enough to touch it. This process continues until new, fear-extinction memories are formed -- memories that say "snakes are not going to harm you" and serve to contradict the fear of snakes that lives in the amygdala. The fear still exists, but the idea is to override it with the new memory.