



Staten Island, NY

Researchers: Biology may be to blame for panic attacks

By Judy Foreman

Carol Brown had her first panic attack when she was 16, in an elevator. Out of the blue, "my heart started racing, my hands were sweating, my breathing was shallow," said Brown, 54, who lives in Belmont. "I thought I was losing my mind. It lasted maybe a minute, maybe a minute and a half, but it was enough to begin the pattern of events."

That pattern is horribly familiar to the 2.4 million Americans who get panic attacks.

In a panic attack, a person feels a rush of fear or distress with no sense of its cause. This is often accompanied by heart palpitations, shortness of breath or "air hunger," numbness or tingling, light-headedness, fear of going crazy, depersonalization (feeling like you are not really there), flushes, chills, nausea, sweating, trembling or shaking. Many people rush to the hospital emergency room, fearful they are having a heart attack.

The first attack often makes a person so afraid of another attack that she -- and women do get panic attacks more than men -- soon avoids anything associated with it.

For Brown, who works as director of program and resource development at the Cole Center at **McLean Hospital** in Belmont, that meant elevators. Then, after an attack on the highway, driving. Then the supermarket. Then agoraphobia, the fear of being trapped in any situation or place where a panic attack might happen, even situations where no attack has occurred before.

Years ago, doctors might have attributed panic attacks like Brown's to some deep psychological problem. Now, they suspect biology.

"The biological hypotheses for panic disorders are based on several observations," said **Dr. Srin Pillay**, director of the panic_disorders research program at McLean.

"Pharmacologic medications can stop panic attacks and panic attacks can be induced by various compounds," he said. Panic attacks also occur "out of the blue, suggesting some sudden alteration in chemistry." They also can occur when a person is not anxious, and even occur during sleep, "suggesting panic attacks may be tied to biological rhythms."

Family history plays a role, too, he noted. If you have a parent or sibling with panic attacks, you have four to eight times the normal risk of getting them, too.

In laboratory experiments, for instance, researchers have shown that panic attacks can be induced by sodium lactate or carbon dioxide, which change the acid-base balance in the brain, triggering shortness of breath, one of the hallmarks of panic attacks.

And panic attacks respond extremely well to medications like Paxil, an SSRI, or selective serotonin reuptake inhibitor, which boosts the effectiveness of serotonin, a mood regulator. Indeed, while SSRIs are about 60 percent effective against depression, they are effective 80 percent to 90 percent

of the time in panic disorder, noted Dr. Alexander Neumeister, a psychiatrist at the Yale University School of Medicine.

Carol Brown can vouch for that: When she began taking Paxil 12 years ago, her panic attacks vanished.

Panic attacks also seem to occur in people who have overly-sensitive "suffocation-alarm" systems that cause the brain to perceive a shortage of oxygen when there is none.

These alarm signals, generated in the brain and in special receptors called carotid bodies in the large arteries in the neck, have a "periodic tendency to get fired off too easily and to misinterpret ordinary fluctuations as signals of suffocation," said Dr. Donald Klein, a professor of psychiatry at Columbia University Medical Center who coined the term "panic attack" more than 40 years ago.

"In panic attacks," Klein said, "there is this acute sense of 'air hunger,' of struggling to breathe, which is not part of normal fear."

Moreover, scientists are closing in on the brain regions that may be involved in panic attacks. In a study published this year, researchers showed for the first time, using PET-scanning technology, that people who get panic attacks have fewer serotonin receptors in their brains.

In people with panic attacks, but not in those without them, five areas of the brain showed up as deficient in serotonin receptors, said Neumeister, the study's leader. "I think that people are born with this reduction" in receptors, he said, and that other factors subsequently "contribute to the fact that they develop symptoms."

The good news is that, terrifying as they are, panic attacks are not in themselves harmful and rarely last more than a few minutes, although they can lead to dysfunctional behavior, such as drinking, avoiding normal life activities and unnecessary visits to the emergency room.

"Anywhere from 60 to 80 percent of people with panic attacks are vastly improved by cognitive-behavioral therapy or medications or both," said Dr. Chris Hayward, an associate professor of behavioral sciences and psychiatry at Stanford University School of Medicine.

And some therapists, like Kamila White, director of the behavioral medicine program at Boston University's Center for Anxiety and Related Disorders, argue that as many as 80 percent of people who have panic attacks, with or without agoraphobia, can be helped with behavioral treatment alone.

At BU's center, people with panic attacks are taught to deliberately induce feelings of panic and distress -- making themselves dizzy by spinning in a chair or breathless by breathing for several minutes through a straw. The goal, White said, is to learn that feelings of panic can be lived through, and that "even when you have extreme symptoms at the highest levels, you don't lose control."

But perhaps the best strategy is to combine medication and behavioral therapy, said Dr. Joe Bienvenu, a psychiatrist at Johns Hopkins University School of Medicine. Even after panic attacks

are controlled by drugs, he said, people often "have not learned that they will not have more. This really requires going there and dealing with this anticipatory fear."

The previous article also ran in:

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