We all know that too much stress hurts our health, our relationships, and our productivity at work. The good news: New research reveals that controlling stress is easier than you thought.

Pull the Plug on Stress

by Bruce Cryer, Rollin McCraty, and Doc Childre

These days, stress is even more rampant than it was in 1983, when Time magazine declared it to be "the epidemic of the eighties." Stress is growing. According to a survey by CareerBuilder, an on-line recruitment site, the overall percentage of worker stress increased by 10% between August 2001 and May 2002. And stress hurts the bottom line: In 1999, a study of 66,000 workers published by the Health Enhancement Research Organization, or HERO, revealed that health care costs are 147% higher for those individuals who are stressed or depressed, independent of other health issues. The study, which included employees from Chevron, Hoffman-La Roche, Health Trust, Marriott, and the states of Michigan and Tennessee, also found that health care costs generated by stress and depression exceeded those stemming from diabetes and heart disease—both stress-related illnesses.

But what exactly is stress? Generally speaking, "stress" refers to two simultaneous events: an external stimulus called a stressor, and the emotional and physical responses to that stimulus (fear, anxiety, surging heart rate and blood pressure, fast breathing, muscle tension, and so on). Good stressors (a ski run, a poetry contest) inspire you to achieve.

In common parlance, though, stress usually refers to our internal reaction to negative, threatening, or worrisome situations—a looming performance report, a dismissive colleague, rush-hour traffic, and so on. Accumulated over time, negative stress can depress you, burn you out, make you sick, or even kill you. This is because, as our research shows, negative stress is both an emotional and a physiological habit.

Of course, many companies understand the negative impact of cumulative stress and do their best to help em-
employees counteract it. Some offer on-site yoga classes and manage; others provide stress management seminars; still others require workers to take a vacation every year. The problem is that the overall company culture, exacerbated by the stress in people's private lives, works against such approaches. Stressed-out employees are unwilling to take precious time away from work, even for an hour, to partake of amenities that they—and their bosses—generally regard as optional. Moreover, those who use the employee wellness programs are the ones already most willing to confront their stress head-on. Those in the greatest need often don't show up.

Since 1991, we have studied the mind-body-emotion relationship—specifically, the physiological impact of stress on performance, both at the individual and organizational levels. (Thoughts and emotions have different types of physiological responses, so we distinguish between thoughts, which are generated by the mind, and emotions, which are produced throughout the body.) Our goal, in large part, has been to decode the underlying mechanics of stress. We've sought to understand not only how stress works on a person's mind, heart, and other body systems but also to discover the precise emotional, mental, and physiological levers that can counteract it. Having worked with more than 50,000 workers and managers in more than 100 organizations, including Boeing, BP, Cisco, Unilever, Bank of Montreal, and Shell, we've found that learning to manage stress is easier than most people think. And stress reversal can do a lot of good for your organization.

Our research has spawned "inner quality management," a system of tools, techniques, and technology that organizations can use to reduce employee stress and boost overall health and performance. In this article, we'll use the story of someone we'll call Nigel, a senior executive with whom we worked, to describe how these techniques reduce stress in the real world. Among the things Nigel learned was a specific technique for lowering his body's stress response within a minute or two. Like Nigel, you can practice this technique virtually anywhere, even during a tense meeting or while laboring under a tight deadline. By doing so, you can reverse the toxic effect that stress has on your body, your mind, your mood, and your overall effectiveness and productivity.
MANAGING YOURSELF • Pull the Plug on Stress

Nigel's Story

When we first met Nigel, he was a mess. A 31-year-old engineering executive at a global oil company in Britain, Nigel was irritable, pale, and occasionally short of breath. He had dark circles under his eyes, and he complained of stomach problems. In fact, he was under a terrific amount of stress. His company was in the grips of powerful geopolitical and competitive pressure. It also faced internal challenges resulting from global restructuring efforts, intense demands to develop new sources of oil, and a string of acquisitions. In addition, one of Nigel's managerial reports was making his life difficult, and his division's performance was dropping. Endless international travel, combined with family concerns involving aging parents and a troubled teenager, took their toll. Though he had endured this situation for years, Nigel had no idea how much the underlying stress had affected his health and performance.

He did have a hint, however. For 15 years, Nigel had suffered from high cholesterol and high blood pressure. Since both conditions are significant risk factors for heart disease and stroke, Nigel's physician prescribed a straightforward, but not so simple, treatment: Reduce your stress.

But how? The work environment was such that Nigel didn’t feel he could afford to take time out to exercise or time off to recuperate from stress. He also doubted that such strategies would provide lasting solutions. In fact, on those occasions when he was able to take time away from the office, he felt so flattened by exhaustion that he wound up getting sick. Moreover, even when he did manage to relax, he correctly guessed that his blood pressure would shoot up again as soon as he returned to work. He didn't know what to do, and that sense of hopelessness discouraged him even more. Secretly, he even nursed fantasies about having a heart attack—at least if he landed in a hospital he could finally get some rest. Then, of course, he would chide himself for entertaining such ideas, knowing how much his company, his colleagues, and, most of all, his family depended on him.

Physiologically speaking, here's what was happening to Nigel. As Daniel Coyle and Richard Boyatzis explain in their article “Primal Leadership: The Hidden Driver of Great Performance” (HBR December 2001), the brain's mood-management center contains two limbic systems: first, the open-loop system that depends on connections to other people, and second, the closed-loop, self-regulating system that transmits neurological, hormonal, blood pressure, and electromagnetic messages among organs within the body. In Nigel's case, constant stress had hijacked his closed-loop limbic system. This kept the emotional center of the brain, the amygdala—the locus of emotional memory—stuck in a perpetual state of fight or flight so that he never had a chance to fully recover.

The amygdala's primary job is to eavesdrop on incoming sensory information, looking for a match between the memory of a previous experience and an event in the here and now. For example, if a colleague ignored or was curt with Nigel, his amygdala remembered the negative experience; then, when he received an e-mail from the same colleague, he would misread its intent as threatening because his brain had found a match.

Every time Nigel felt threatened, his automatic fight-or-flight response set off a chain reaction of roughly 1,400 biochemical changes. For example, cortisol, the so-called stress hormone, would flood his autonomic nervous system. Scientists have found cortisol to be a major culprit in heart disease and diabetes. Worst of all, Nigel's body had, over the years, adapted to living in a perpetual state of stress. Simply put, his brain constantly strived to maintain a match to stressful patterns, which kept his blood pressure and cortisol levels constantly set at high. That's why taking a vacation never really seemed to help him.

To stop this physiological chain reaction, Nigel needed to find a way to manage his stress from moment to moment and day by day. We taught him to practice a technique we call “freeze-frame.” It is based on the concept that conscious perception is like watching a movie, and

Heart Rhythms

Results of a laboratory heart-rate variability analysis show how different emotions affect heart rhythms. So-called negative emotions such as frustration cause more chaotic heart rhythms, part of a physically harmful chain reaction. However, focusing on a positive emotion such as appreciation creates smooth, and beneficial patterns. Negative emotions create cortical inhibition, or “chaos,” whereas positive emotions generate cortical facilitation, or “coherence.” When physiological coherence occurs, the brain associates it with feelings of security and well being. That's why simply taking several slow, deep breaths can quickly diminish the feeling of stress-breathing modulates heart rhythms.

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we perceive each moment as an individual frame. When a scene becomes stressful, the technique allows you to freeze that perceptual frame and isolate it in time so you can observe it from a more detached and objective viewpoint—similar to pausing the VCR for a moment. Here are the five steps of the freeze-frame technique:

Recognize and disengage. Take a time-out so that you can temporarily disengage from your thoughts and feelings—especially stressful ones.

Breathe through your heart. Shift your focus to the area around your heart. Now feel your breath coming in through that area and out your solar plexus.

Invoke a positive feeling. Make a sincere effort to activate a positive feeling.

Ask yourself, "Is there a better alternative?" Ask yourself what would be an efficient, effective attitude or action that would de-stress your system.

Note the change in perspective. Quietly sense any change in perception or feeling and sustain it as long as you can.

Once Nigel mastered these steps, he was able to block the immediate stress response and, as a result, to get his mind, heart, and body systems to work in sync again. Within weeks of first studying the technique, Nigel conquered his habitual stress: His blood pressure returned to normal and stayed there, and his depression cleared. Nigel began to regain control of his life and take pleasure in his work. Within six months, he had become an effective leader again. Here's what he did.

**Step One**

**Recognize and Disengage**

Nigel was introduced to a computer-based heart monitor, which, like a biofeedback program, revealed the impact of stress on his cardiovascular system in real time. The monitor showed him how, when he was caught in the grip of a stressful emotion, his heart responded by beating more rapidly and irregularly. (The exhibit "Heart Rhythms" shows the correlation between different emotional states and heart rhythms.)

Seeing his own chaotic heart patterns convinced Nigel that he needed to make some changes—and soon. He began his stress reduction program with one small project: He focused on Martin, the exasperating manager whom he reported to. Though Martin had started out as an effective manager, he had fallen behind on several deliverables, forcing the rest of Nigel's team to pick up the slack. In addition, Martin had an irritating personal style. He talked too much, constantly about himself and always in a tone that alternated between whining and bragging. When he made presentations in group meetings, Martin would drone on without ever appearing to get to the point. Twice, Nigel became so irritated that he actually shouted at Martin to "get on with it!"

Nigel noticed that he felt irritated—and had the physical signs of stress, particularly a knot in his stomach—whenever he saw or spoke with Martin. To disengage from this stressful reaction, Nigel would recognize the stomach knot and then push a mental button, as if pausing his mental VCR. In other words, Nigel learned to freeze the irritation whenever he thought of Martin. (This ability to instantaneously switch mental gears is something we practice all the time, just as we jump from mulling over an e-mail message, scanning the next item on our to-do list, and listening to a presentation.)

Our research on stress response has shown that this simple process of recognizing and disengaging interrupts the amygdala's ability to match patterns and helps us gain objectivity.

**Step Two**

**Breathe Through Your Heart**

After freezing the stressful moment, Nigel consciously focused his attention on his heart. At the same time, he inhaled deeply for about five seconds, imagining the breath flowing in through his heart; then he exhaled for about five seconds, visualizing the breath flowing out through his solar plexus. In the process, he began letting go of the negative emotion Martin had aroused in him.

Though many stress management techniques involve shifting one's attention to a sound, phrase, or the breath, numerous studies have shown that you can produce physiological change by...