



Trusted advice for a healthier life
from Harvard Medical School

manage your *Stress*

Overcoming Stress
in the Modern World

Joe Shrand, MD
Leigh Devine



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Overcoming Stress in
the Modern World

Joseph A. Shrand, MD
with Leigh M. Devine, MS

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To my departed loved ones:
My dad, Hyman Shrand, my mom, Frances Shrand, and my sister, Susan Shrand.
I miss the way you helped me.
—JOSEPH

To my mother, Elaine Fraser Devine.
—LEIGH

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—Joseph A. Shrand, MD

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part I

What Is Stress?

A Response to Your World

For nearly a decade Jennifer supported herself and four kids as a shrimp-net maker. But after the oil rig explosion in 2010 shut down Gulf fishing, Jennifer couldn't find other work and was forced to accept charity for the first time. Her hardest moments came at Christmas when she had little to give her children. While things had been tough before, Jennifer recalls that her stress level was at least manageable. "If I only had to worry about my car breaking down here and there, I'd still be pretty happy," she said.

For all of us, stress comes in many different packages. Jennifer's latest stress has been brought on by a sudden, negative change in circumstances. For others, stress comes on in a traumatic way such as a car accident or death of a loved one. But routine, chronic stress that is related to work pressure, family life, and other responsibilities can, in the long run, lead to serious physical and mental health consequences if not managed properly. And this kind of stress can sneak up on you quietly and gradually.

If you've picked up this book because you're thinking that stress may be getting the better of you—or possibly even making you sick—then you are in good company. As the ripple effect of the Great Recession is still being felt across the country, people are reporting both high levels of daily stress as well as acutely stressful events, brought on by the nation's economic woes. According to the American Psychological Association's Stress in America 2010 survey, 76 percent of the respondents cited money concerns as the number one source of stress, followed by work at 70 percent, and worry about the general economy at 65 percent. Despite their awareness of the source, only a third of those surveyed said they were doing a good job managing their stress. And the majority of children whose parents endure very high levels of stress say there is a negative impact on their families.

While it is inevitable that human beings are going to be faced with many types of stressful events throughout a lifetime—from traumatic events to daily irritants—what is not a given is how we respond to those events. We can reduce the impact of stress in our lives and on our health by understanding why we experience stress, what is going on in our brain and body, and how, in fact, we cannot live safely *without* stress.

Your Perception of Stress Triggers

Many people describe their stress in concrete and common ways such as work deadlines, rude driver, argumentative coworkers, a stack of unpaid bills, being evaluated. The feelings you experience these times tend to be negative, can put you in a bad mood, or even worse, make you angry and aggressive.

But if you look at these scenarios as a third party or a medical expert, you would see how the instances are actually individual causes or sources of the stress experience. We call them *stressors* or *triggers*. In general, they come in two varieties:

1. common, daily occurrences that grind down on your patience, or
2. unexpected events that seem to conspire against you before you've even gotten to work

You feel like you've been mentally and physically put through the wringer and, in a way, you really have. Your body has reacted to the event of being cut off in traffic almost in the same way as if a rhinoceros had charged you. When you experience a stress trigger your heart beats quickly, your palms and body sweat, blood rushes to your face, and your breathing quickens. Some stress makes you just want to run away or hide. Other times people feel charged, ready to fight after the event has passed. Sometimes people feel exhausted by it, or overwhelmed. Whatever your instinctive feeling may be in those moments, it is what you choose to *do* right after that stress moment that can mean the difference between a ruined or normal day.

All too often we continue to let our fear or anger from a stress trigger stew and feed upon itself. We focus on the event, replaying it, telling it to others. Few of us are taught that what is actually happening in our minds and bodies during a stress trigger is a perfectly normal and protective physiological event. Having the tools to cope and calm ourselves when we are confronted by either a chronically stressful job, or a sudden negative event will make a big difference when we experience the stress response.

In order to understand why we respond to triggers—and it happens to all of us automatically—this book helps to look at the human brain and the mechanisms that trigger our stress responses. This journey takes us deep into the central workings of the human neuroendocrine system, which is responsible for the delicate interplay between our brain and the chemicals and hormones that influence how we react and respond to the world around us. Once you begin to learn about why our bodies do what they do, you'll see how stress is a useful partner in life. Without it, we could not have survived as a species.

Biological Origins of Stress

Stress and Survival Go Together

If you've ever seen the film classic *Jurassic Park*, you will remember the heart-pounding scene where several characters were being chased over the fields by those ferocious velociraptors. Those characters were dramatizing what our evolutionary ancestors no doubt experienced—the need to literally run for your life. While we don't get chased by many reptiles in the modern world, our bodies still react to threats in a similar and automatic way.

It's all about evolution. Hardwired into every mammal's brain is an apparatus for automatic and unconscious scanning of our surroundings—assessing for danger, safety, predators, and much more. There is little doubt that during evolution, there was a survival advantage to having such an efficient safety system in place. The creature that paid no attention to that rustling in the bush became lunch much more often than the creature that recognized the danger and did something. Reacting to the danger bestowed the best chance of survival. Once the brain perceived a danger, the body took action to attack or defend, run away, or try to hide and become invisible until the danger had passed. Negotiation was not an option.

These days it is unlikely that we will be eaten by a hungry predator. But our ancient brains still respond the way they have for millions of years. Of course, in today's world we have many different kinds of stressors. Instead of having four legs, they often have four wheels or rechargeable batteries. When we are confronted with a stressor—which could be any real or imagined stimulus that requires us to change or act quickly—we feel the inner sensation of our bodies going into an instant hyperactive mode. Think of what happens to you when you even *think* something dangerous is about to happen. You become *startled*. A car pulls out in front of you unexpectedly. A door slams when no one else is home. You lock your keys in the car. The muscles tense, the heart pounds. We all know intimately how this feels.

This is our neuroendocrine system jolting into action, triggering the release of specialized hormones that produce those sudden and well-orchestrated physiological changes that create the stress response. Exactly how and why these reactions occur and what effects they might have on us over time

are questions that have intrigued researchers for years.

Fight, Flight, and the Frightened Cats

Harvard physiologist Walter B. Cannon was a pioneer in exploring the biochemistry of the stress response. His research nearly a century ago convinced him that fright was not all in the mind, but also stemmed from the adrenal glands, two tiny hat-shaped structures sitting atop the kidneys. To test his theory, Cannon set up an experiment in which he caused dogs to bark menacingly at caged cats. He was then able to isolate a hormone secreted by the adrenal glands of the frightened cats. When he injected that hormone into a second, perfectly calm cat, it touched off a fear reaction. The cat's heartbeat and blood pressure shot up, while the muscles enjoyed an increase in blood flow. Cannon called this occurrence the *fight-or-flight-or-freeze* response.

These days, we call it simply the *fight or flight* or the *stress response*. From a survival point of view it makes perfect sense: If you are in danger, you want to send as much energy as possible, in the form of oxygen and sugars carried by blood, to the muscles of your arms and legs so you can either flee, or be prepared to fight for your life. By studying these frightened felines, Cannon had uncovered a critical insight into the stress response: the role of hormones.

The initial stress hormone Cannon isolated was something called *epinephrine*. You might recognize the name, especially if you have or know a child with severe food allergies. An *Epipen*, now a common item in school classrooms to mediate severe allergic reaction, is named after the hormone it administers. Epinephrine pushes open the airways in the lungs. More commonly, we call this hormone *adrenaline*, after the glands that manufacture it. Cannon also discovered a second stress response hormone called *norepinephrine*, or *noradrenaline*, which makes your heart rate and blood pressure soar during a fight-or-flight reaction. A sudden, rapid rise of norepinephrine is what also causes panic attacks. Other researchers later discovered a third crucial hormone of the stress response, *cortisol* (what I refer to as the “Minutemen”), which further prepares the body to fight or flee by increasing blood sugar to provide energy, suppressing the immune system, and shutting down the digestive system.

Think about what we needed to be able to do if faced with a threat. We would first need to recognize we were in danger. To do this, certain parts of your brain had to remain continually vigilant. At the same time our brain needed to process the meaning of what we observed, as well as look for changes in that environment, such as an approaching animal. After assessing the strength of the animal, your brain would begin to mobilize the body.

In less than a heartbeat, the chemical messenger corticotropin-releasing factor (CRF), what I call the “Paul Revere” of hormones, gets released from your hypothalamus and courses down a neural pathway to the nearby pituitary gland.

As if in a chemical relay race, the pituitary cells then send their own chemical messenger, adrenocorticotropic hormone (ACTH), to the adrenal glands, which mobilize the “Minutemen” of our defenses, spilling cortisol into the bloodstream. Cortisol, the critical stress hormone, helps to convey

fats into easy-to-access sugars: the energy we need to run away or stand and fight. Surges of adrenaline and noradrenaline are also released by the adrenal glands on instructions from the brain and simultaneously throughout the body by the sympathetic nervous system. Scientists call this powerful triumvirate of the hypothalamus, pituitary gland, and adrenal glands the *HPA axis*.

This cocktail of stress hormones races through your bloodstream to different parts of your body, preparing you to fight or flee. Your breath quickens as your body takes in extra oxygen. Energy-boosting glucose and fats are released from storage sites into your bloodstream. Sharpened senses such as sight and hearing, prepare you to detect changes in your surroundings and respond rapidly. Your heart beats faster, up to two to three times as quickly as normal. Your blood pressure rises. Certain blood vessels constrict, directing blood flow to your muscles and brain and away from your organs and skin, something we have all experienced in the form of cold sweats.

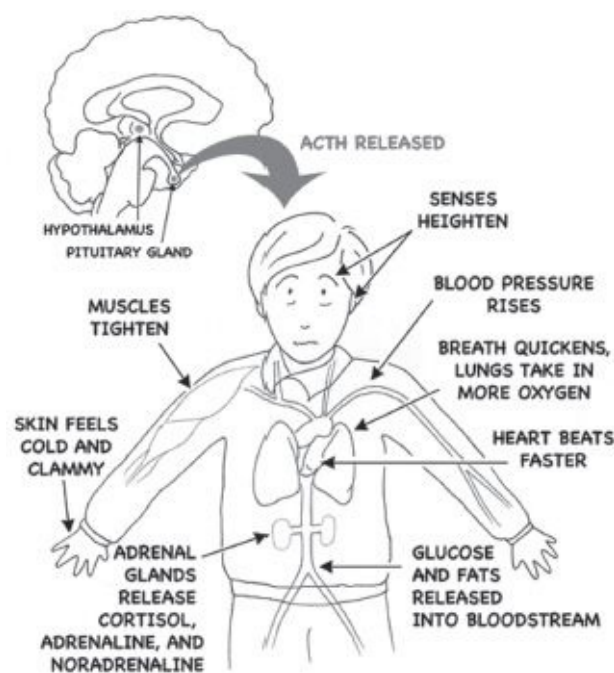


Figure 1: Stress Response (Illustration by Sophia T. Shrand)

Simultaneously, specialized blood cells, called platelets, become stickier, so clots can form more easily to minimize bleeding from potential injuries. The immune system goes into high gear to fight off bacteria from possible bites and scratches. Your muscles—even the tiny, hair-raising muscles beneath your skin—tighten, preparing you to spring into action. Body systems not needed for the immediate emergency are suppressed. The stomach and intestines cease operations. Sexual arousal lessens. Repair and growth of body tissues slows. In essence, without being fully aware of how you are doing it, you have primed yourself to combat a perceived (real or imagined) attack.

When the danger passes, the body is designed to naturally bring itself back to that low-grade, seemingly unconscious state of vigilance. Indeed, Cannon believed the stress response was temporary. Minutes after the rush triggered by adrenaline, he thought the body would wind back down to its normal balance, a physical state known as *homeostasis*. Everything reverses and goes back to normal: heart rate and blood pressure; breathing and muscles; platelets and the immune system all go back to their previous state. Your intestines would start their work again, providing new fuel to replace the

energy burned in the emergency. Bones would resume repairs or start growing again, and reproductive activity might appear more inviting. You have survived another day.

With the challenge that sparked the stress response behind you and the parasympathetic nervous system exerting its calming influence, the day-to-day business of your body would resume. However, current research has shown that this recovery does not always work as well as we'd like it to, especially among the many people who experience chronic stress. Those hormonal effects, so vital and heroic during times of fight or flee, can be detrimental to health when the body no longer needs them.

The Positive Side of Stress

Amid all our fears of stress, though, it's very important to recognize that the stress response can be enormously helpful. We can't live and function in the world without it. It is also the stress response that enables people to perform enormous and vital feats. Think about the lifesaving work done by emergency workers and ordinary people confronted in accidents and disasters. When an elderly woman fell onto the New York City subway tracks, a plumber jumped down to grab her just as the train pulled into the station. His stress response saved her life and he was hailed a hero.

The fight-or-flight response can prove beneficial under far less dangerous circumstances, too. Helping someone in need, such as a skier who suddenly falls in front of you, also activates your stress response. But recent studies have shown that people who acted to help and those who *received* help both had lower levels of cortisol in response to stress triggers. This suggests that when we help each other in times of stress we both benefit on a neurochemical basis. In the following chapters, we explore how you can use this information to better manage stress in your own life, and in the lives of others.

Stress has been the subject of scientific curiosity for more than a century now. The word *stress* derives from the Latin, *stringere*, meaning "to stretch." To Canadian physiologist and endocrinologist Hans Selye, who first popularized the concept of stress in the 1950s, the term suggested a stretching of physical and psychological resources to meet demands placed on an organism. Selye studied the link between short-term stress that stimulates people to persevere to overcome obstacles (*eustress*, "good" stress) and chronic or excessive stress, which wears down the ability to adapt and cope (*distress*, or "bad" stress). But whether it was good or bad, he maintained, the impact on the body was identical. Selye was also the first to show the role of emotional responses in causing much of the weeping and tear experienced by people throughout their lives.

But Selye was not the first to recognize that there was indeed a positive side to the stress response. Research on the relationship between stress arousal and performance goes back more than hundred years to Robert Yerkes and John Dodson. In 1908, these two Harvard researchers wrote a landmark paper stating that as stress or anxiety levels rose, so did performance and efficiency—up to a point. At this turning point, further stress and anxiety led to significant declines in performance and ability—a concept still known as Yerkes–Dodson Law. Where that turning point occurs differs from person to person. For while the stress response is hardwired into all humans and other animals, the events and

perceptions that set it off vary widely. What you perceive as a threatening situation, your neighbor, or even your spouse, may easily brush aside. Not all of us can handle working in an emergency room, diving near sharks, or scaling Mount Everest.

It turns out that stress-hardy people share several common characteristics. Researchers have found that exercise and social support proved essential. So did control, challenge, and commitment. Stress-hardy people have been found to feel a sense of control, or have the ability to influence events. They embrace the challenge in situations others might find stressful, and describe themselves as committed to something meaningful. People with these attributes report fewer illnesses and are less likely to be absent from work.

The ability to think on your feet is another trait common to stress-hardy people, according to a 2010 study in the journal *Psychology and Aging*. Twelve-hundred people between the ages of forty-five to sixty-nine were asked about their positive and negative mood status for that day. They also completed a test that measured what the researchers called their *fluid cognitive ability*—the participants' ability to use reason quickly and think abstractly. Those with higher levels of fluid cognitive ability, they found, were associated with greater exposure to work- and home-related stressor overloads. Ironically, this group, who reported the highest amount of small stressors, reported a low level of negative moods. Meanwhile, those who scored lowest on their fluid cognitive ability experienced the opposite, which may indicate that some people are more easily overwhelmed by the stress response and so are less able to think quickly and more apt to experience more negative moods. Stress, it appears, can rob people of their ability to think.

These findings unfortunately beg the question of what exactly controls one's ability to weather the stress response. It would seem that the stress response interferes with some people's brain function as well as their ability to manage negative moods. On the other hand, a certain amount of stress helps some people perform better, leading to a decrease in negative moods. What is certain is that further study of what makes the stress-hardy so resilient is much needed.

For the vast majority of us, the experience of being in constant, revved-up survival mode is not just unpleasant but physically and mentally unsustainable. Chronic stress, which can lead to what I've nicknamed a "cortisol marinade," may cause unnecessary wear on the body as well as a myriad of debilitating conditions including anxiety and depression. Stress can trigger flare-ups of asthma, rheumatoid arthritis, and gastrointestinal problems, such as irritable bowel syndrome.

Stress affects you emotionally as well, stealing joy from your life and all it has to offer. Life is just not as much fun if your brain always perceives the worst.

My interest in stress stems in part from my own childhood. My mother was an actress and my father a pediatrician. They did not have a happy marriage and divorced when I was fourteen. The stress at home was often intense, as my parents battled each other over often long-forgotten insults. The daily barrage of conflict interfered with their lives, my schoolwork, and their happiness. During the divorce I saw how much damage can be done when you have no means to resolve that much stress. The arguing and blaming impacted both my parents' lives for as long as they lived. But it also created in me a determination to explore this stress response, and try to develop a way for others to at least have some tools to combat this deeply ingrained reaction to the world around us.

As a psychiatrist I have the amazing privilege of being with people at a time of need. As a child psychiatrist in particular, I see how multigenerational conflicts can permeate their way into the lives of a child, even if the child themselves is an innocent bystander of the stress of their parents. Not that stress is a sin, but in a very real way, the proverbial “sins of the father” (and mother), do play out in the lives of the child. But what I have been fascinated by is the myriad of responses people have to this ubiquitous event in our everyday lives. Not all of these are unhealthy, but many can lead to significant stress in and of themselves.

For example, some children are more resilient to stress, and take this ramped-up cortisol response to excel in school, sports, and creative process. But others are not so adept. In my current position I work with adolescents who have begun using drugs and alcohol. Many of them use in response to the stress of life. Those who got hooked into the limbic world of addiction, create stress which is then compounded in them, their families, and communities, by the very substance they were using to relieve the stress they were experiencing. Others were from good homes, but were at a party where drugs and alcohol were passed around for so-called “fun.” But those who got seduced by the substances created the same stress as those who were already seeking an escape. Stress can insidiously germinate and create more stress until it seems overwhelming.

This is why I have written this book. To help the reader understand what this stress thing is all about, to share some of my own experiences in helping people, and to assure you that stress is a normal part of being human. Stress itself is adaptive and useful, a part of the survival tool kit we have evolved over millions of years. It is what you do with your stress, or what unbridled stress can do to you, that is the real danger. Stress can be an instrument of success or a weapon of significant destruction.

* * *

It’s never too late to learn to address the seemingly endless stressors in the world today. You can take control over how you react to stress and learn to better manage your mental and physical reactions, and I will help you get started in the following chapters. So relax, and read on.

part II

Understanding Your Stress

Key Sources of Stress

All through dinner Beth tried in vain to get her young sons to eat their chicken nuggets. She tried coaxing and pleading. Her husband then tried bribing with dessert. The boys just fidgeted and fought. It was the last thing Beth needed to top off a hectic, ten-hour workday. After dinner, she cleared the table and asked her husband to take out the trash. When he didn't respond after the second request, she found herself screaming the third time. *Why did dinner have to be so complicated?!* Her heart raced and she breathed in, squelching the urge to throw a glass against the wall.

If you stop and think about what we reviewed in the last chapter about fight or flight, then it might seem odd that Beth would react nearly as intensely to her sons' bad behavior as she might to the lives being threatened. But actually it may not be so odd considering the way our brain has been designed for survival. What is different today is that we perceive our basic survival as dependent on things like electricity, being on time for meetings, and, for some, our kids eating their chicken nuggets. In a sense, we have transferred our survival-based stress response to entities that have little to do with real survival and all to do with conveniences of, and control over, modern life. Sadly, in the process of this we're not only robbing ourselves of joy, but also making ourselves sick.

So how does knowing about stress help us to better manage stress and balance the good stress with the bad? By getting to know our many stress triggers, as well as those of people around us, we can recognize and override our urge to fight or flee, anticipate how our body will react, and take steps to remain calm and reflective—and not *reflexive*. For instance, if you know your kids might not always be hungry at dinnertime, you are less likely to let those very predictable triggers get the best of you, like they did poor Beth. A kid who is not hungry is not a predator that is.

Stress at Home

Of all the places where we expect to feel free of stress, the home can instead be a minefield of stress triggers, especially for working parents like Beth who juggle the demands of the workplace for the better part of the day and then come home to face the needs of children, partners, and pets, not

mention the household items that constantly need to be cleaned and fixed. For many people, work actually feels like the escape. At work most people have to be concerned only with themselves. At home, there are many relationships to manage and many opportunities for stress. In fact, with the four people in Beth's family, there are thirteen relationship combinations around a small dinner table. Each of these relationships and individuals brings their own needs, desires, and sources of stress into the family dynamic every single day:

1. Beth, her husband, and the two kids
2. Beth, her husband, and one kid
3. Beth, her husband, and the other kid
4. Beth and both kids
5. Beth and her husband
6. Beth by herself
7. Husband and both kids
8. Husband and one kid
9. Husband and the other kid
10. Husband by himself
11. Eldest kid and other kid
12. Eldest kid by himself
13. Youngest kid by himself

Take a list like this and apply it to your own life. As you can see, with every relationship set, there are many potential sources of stress. But along with the multitude of home triggers, there are also many mechanisms that help alleviate stress among couples and families. It may sound like common sense, but couples that are satisfied with their marriages have been shown to have lower levels of the stress hormone, cortisol. University of California researchers reported in a 2010 *Journal of Personality and Social Psychology* study that the cortisol level of couples actually influenced each other. When one partner was in a negative mood, the presence of their partner alleviated this both psychologically and hormonally indicating that happier couples may indeed have calmer homes and vice versa.

Perhaps if Beth's husband had been more of a team player during the dinnertime routine, it is possible that Beth's stress levels would have been modulated by his supportive actions. If Beth and her husband's marriage was a happy one, this would increase the likelihood that their home became a place where their relationship would become a buffer against the other stress triggers brought on through the remaining family stress combinations. Helping each other out is a way to decrease stress.

But even if Beth's marriage wasn't so good, any emotional support could help diffuse a stress trigger as well as improve someone's mood. Positive emotions have been shown to either protect against stress, or reduce the response to stress according to numerous scientific studies. Other findings indicate that feeling supported actually increases oxytocin levels. Oxytocin, a hormone associated with attachment and a sense of well-being, has also been found to help the healing process and

possibly protect against disease according to recent data from a research team at the University of Southern California.

It almost sounds too simple, but really learning to be proactive and providing positive support to family members may go a long way toward arming us emotionally for the other stress triggers that lie ahead in our daily lives, especially in the places where we spend the greatest proportion of time—work and at school.

Stress at Work

On a daily basis, most of us face a multiplicity of external stress triggers that are completely out of our control, as do Beth and her husband. From traffic, to weather, to bad service at the luncheonette, a major stressor of course comes from the places and people with whom we spend the most time, such as at our work and colleagues. This goes for men and women alike. In fact, we spend more time working than in previous decades and pervasive modern technology in the form of e-mail and “CrackBerries” is eroding the barrier that used to exist between our work and home life. While these devices are supposed to increase convenience, we are also learning just how much they may be increasing stress levels.

So what exactly was happening during the ten-hour workday that contributed to Beth’s stress levels? Maybe she had an unrealistic deadline, equipment failures causing delays, or impending layoffs. If Beth was a mid-level manager, she had pressure coming from both ends of the spectrum. Some things may be under her control, while others certainly are not. In fact, a major determinant of how much work stress we experience is whether or not we feel in *control* of our time at all.

How much control do you have over your work? Do you get the support you need to do your job? Do you have flexible hours? Do you feel respected by colleagues and superiors? These are especially important points to examine in your work life, and research is pointing to how these control factors affect your stress levels, which in turn can affect your health.

For instance, in a major four-year British study of 21,300 female registered nurses, researchers found that those reporting minimal control over their jobs, little social support at work, and high job demands were more likely to be in poor health at the study’s outset. They also suffered greater functional declines during the next four years. In this landmark study, published in the *British Medical Journal* ten years ago, job control depended on the worker’s ability to acquire and apply new skills on the job and to have decision-making authority. Those with the highest control and lowest demands stayed healthiest.

Not surprisingly, job stress and heart disease have been linked in a growing body of research. In another major study, from the University of London, which involved ten thousand London-based male and female civil servants, scientists found that chronic work stress was associated with increased coronary artery disease, especially among people under age fifty. Other findings showed associations between work stress and low physical activity, poor diet, the metabolic syndrome including high blood pressure and insulin levels, and lower heart rate variability. Also among this group, work stress was

associated with a higher morning rise in cortisol. High levels of cortisol most often mean high levels of stress.

We've been reminded during the recent economic downturn that what can be equally stressful to a difficult job is the stress of not working at all. This creates a whole other realm of anxiety that involves financial and marital pressures. I have seen many individuals for whom stress has grown into a full-blown depression after being laid off. One man's comment in particular summed it up. Once a high-level and highly paid executive with a global chemical company, he did not survive a final round of management layoffs. "When someone asks me what I do for a living, I first feel sheer panic," he said. "But alone it turns to sorrow. I feel useless, worthless. Sometimes even helpless." Along with a severance package, one of the best send-off items that folks like this could use might just be a stress anticipation-and-reduction plan. A person's very health could depend on it. Luckily for Beth, at least for now, her job appears safe. But how safe are her kids feeling in school?

Stress at School

Like the home and work for adults, school can be a hotbed of stress for our kids—at all ages. There are two main categories of relationships a kid needs to traverse at school: the one with their peers, and the one with their teachers and other administrative adults. When kids are very young, their first major stress trigger often comes when the parent leaves them at daycare or school for the first time. They have entered the world of other grown-ups; strangers much bigger and more powerful who have a significant influence on their daily lives—out of the direct sight of their parents. Separation anxiety is real. While it appears that some kids are having a tantrum at the thought of being separated from the parent, many are having full-blown, cortisol-fueled panic attacks. You've seen it and some of you have no doubt lived it. Once the child develops a bond with the teacher and classmates, however, the anxiety usually eases and eventually they skip off to class happily.

Many of us assume that the instructor's emotional support will help buffer a child's fear and stress. We encourage a warm feeling between our kids and teachers, often bringing a gift for the teacher to show they are special people in our kids' lives. It turns out that a positive teacher-pupil relationship is actually crucial, especially for youngsters. Researchers from the University of Wisconsin followed a group of kids from first grade and then evaluated them again in seventh grade. The results of their study were sobering. The kids who felt closer to their teachers fared better from a long-term mental health perspective than the kids who felt more distant.

Although the home environment must contribute in some way to our kids' stress levels and how they feel, the relationship with teachers can be independently influential. From my work with children and adolescents, it appears that all children (and this goes for adults, too) want to feel valued by another human being and not just Mom and Dad. We enjoy feeling valuable to anyone. Feeling valued can lessen stress and cortisol, leads to improved self-value, and, at least in the Wisconsin study, less difficulty with mental health issues, most of which interfere with further human relationships.

Conversely, when teachers are overly critical and disapproving, this can create a long-lasting negative impact on a child's ability to form relationships, and to learn. While the vast majority of teachers are supportive of their students, the effect of just one teacher who is demeaning can still have an enormous and deleterious effect. This was the surprising, and disturbing discovery of psychologists from the University of Oregon who studied behaviors among a group of 241 local schoolchildren starting in kindergarten. Most were succeeding socially and academically. Among those who were not, all had ongoing conflicts with their teachers; a trend that the researchers found persisted through elementary school. What is worrisome about these findings is the long shadow that this conflict may cast. It doesn't appear to matter who the teachers may be later on, the pattern of how a child views his or her relationship with the teacher appears to be established very early and consistently.

What if one of Beth's children is having a hard time building trust and a good relationship with the teacher? Or perhaps one of the kids was disciplined that day and still felt stressed out. With kids, events at school can be just as hard to leave behind as work stress at the office is for adults. Being yelled at by their mother later on can compound the stress the kids are already feeling. When the child doesn't eat, Beth and her husband may view this action as a rejection of them, and a disrespect of their authority, which makes them both angry. Beth's own stress may interfere with her ability to more accurately analyze the motivation behind the behavior of her kids and an opportunity to be supportive may be missed. Do you see how these family relationship combinations interact and sometimes become combustible due to stress in everyone's lives? But Beth's kid may have lost his appetite at home due to stress at school. Blood flow is diverted from the gut in the flight-fight stress response. Why eat if you fear being eaten.

As kids get older, however, some of the most stressful aspects of going to school become the social pressures, especially the need to fit into a social group. The fear of group exclusion and even worse, of being bullied, has only increased in recent years with the rampant proliferation of text messaging among kids. I personally find this to be a frightening trend and have seen the damaging effects of bullying among adolescents in my practice. The stress experienced by those being bullied can lead to physical problems, such as headaches and stomachaches. Bullying can lead to poor self-esteem, lack of friends, depression, anxiety, suicidal thoughts, and tragically, even suicide itself. Might the stress and fear of being bullied also be a reason that Beth's kids weren't hungry at dinner?

Strong family support can offer protection from the negative effects of bullying, and there is increasing evidence that positive home environments increase resiliency in children who have already been subjected to bullying. In a recent study in Finland, scientists gave questionnaires to nearly eight hundred children—first at the age of ten, and then again at age fourteen. They found that the children who felt they got along with their parents, and could communicate well with them, also reported being more satisfied with themselves, enjoying school more, feeling less lonely, being less bullied by others, and also bullying others less. It is the unfortunate truth that if Beth's kids are not getting along with her and their father, this could also be having a major impact on their school lives.

This is important information, because sometimes the effect of being bullied as a child can last a lifetime. Not only this, but research has recently shown that adults who had experienced being bullied while at school also reported a lower health-related quality of life as adults—another reason to get the

stress under control among all family members as early and as consistently as possible. A kid who feels bullied does not feel valuable, leading to more vulnerability to stress.

It may be a struggle for parents to communicate with their kids, especially teens. I know the challenge as I have two teens myself, and two older kids that were teens. The proliferation of impersonal communication in the form of cell phones most certainly doesn't help. In a recent Pew Internet report from the Family Online Safety Institute, 25 percent of teens reported being bullied or harassed on their phones; 15 percent had received a "sext"; and 34 percent admitted to texting and driving. Given such statistics, both parents and schools could ramp up education and dialogue on the physical and emotional safety issues—not to mention stress created with the use, and frequent loss, of these ubiquitous devices.

These pressures continue through college but are compounded by academic pressures and concerns about finding a job postgraduation. You might remember those stressful midterm all-nighters and worries in senior year about finding a job and paying off school loans. In fact, 85 percent of college students said they felt stressed, according to a recent poll conducted by the Associated Press and MTVU, a division of MTV Networks. About 42 percent reported feeling down, depressed, or hopeless several days in the previous two weeks. As adults, we may have had different experiences when we were in college. But our kids live in a different world, and it is our opportunity to tune in and listen to the stresses they perceive.

Stress and Relationships

If we look back to the thirteen-pronged relationship tree of Beth's family, you can just imagine how the impact of other relationships, outside the immediate family, can also add up and become potential stress triggers. Managing all of our human relationships presents a daily challenge. We all want and need different things all the time. Sometimes others want, need, and expect things from us when we're least able to provide them and the opposite holds true as well. Those are normal circumstances that already can cause high levels of stress.

But when certain relationships, particularly close, emotional ones, are threatened, or disintegrated, these moments can cause the highest levels of stress among adults and children.

The Parents' Marriage

The impact of divorce and marital strife on kids is perhaps one of the most passionately researched topics over the last two decades, especially with the high rate of divorce among Americans. I see many families before, during, and after the separation process and it can be immensely stressful on the kids. Often we use psychological methods such as talk therapy to assess and process the impact on adults and children. Recently, though scientists are developing other tools that will help us measure a person's actual stress levels biologically.

Remember that fight-or-flight skin phenomenon I mentioned earlier called the cold sweat

Researchers are now able to measure the electrical conduction in a person's skin. It doesn't hurt, and it is easy to do. By using this method, scientists were actually able to show a direct association between marital conflict and children's autonomic nervous system. The researchers found lower rates of electrical conduction and more cold sweats among the children whose parents argued more, according to a 2010 study published in the *Journal of Abnormal Psychology*. The higher the rates of stress, presumably, the more cortisol there is diverting nutrients from the skin to those important muscles needed for fight or flight.

Not all separations or divorces have to be hugely stressful on kids. The point to take from this research is that strife, whether associated with divorce or not, is what makes kids stressed out. When children—just like adults—feel safe and unthreatened, they do not experience such high levels of stress and cortisol reaction. And there are plenty of studies that show that in fact, kids do much better when their parents are living separately in peace rather than living between two combatants under the same roof.

It's important to note here that, whether divorced or married, the way parents raise kids can be more or less stress provoking. It all depends upon their approach and behavior with their children. While it may sound obvious to some, the parent who is harsh and demanding, instead of warm and nurturing, is going to create more stress and fear in their children, unnecessarily. Many studies back up the notion that children coming from less nurturing, more stress-filled homes, are much more likely to act out at school and outside the home. These kids often have a harder time focusing, may be disciplined more frequently, and may be more likely to ignore authority figures.

Teens and Stress

If you're a parent of a teen, then you know that one of the main reasons for stressful conflict at this age is the normal desire for independence as teens mature. Parents often think that a firm approach is best. Increasingly, though, we are learning that what helps to keep kids under control, is not just ruling with the iron fist. Rather, it has to do with the level of respect within the relationship and how kids feel about their parents. In particular, in homes where there is a clear give and take of ideas, opinions, and decisions between teens and their parents, the parents may experience less conflict with the teens. In fact, in a recent Swedish study of young people's feelings and behavioral control, researchers showed that when parents cared what their kids were feeling, they were less likely to break rules.

Stress on Parents

While psychologists have been busy exploring the effects of parents' behavior on their children, much less is known about the effects of children on their parents, at least children without significant medical conditions like cancer or diabetes. You've no doubt heard the expression: "The bigger the kid, the bigger the problem." Well, this also goes for the level of stress that occurs when older kids do get out of control and misbehave. While many parents seem to think that their kids turn into aliens the moment they hit their teens, when those teens get into trouble, the level of parental stress can

skyrocket. In my work with adolescents who have addiction and mental health problems, I see the devastating impact on parents. This was not the kind of stress they signed up for when they became parents. Nevertheless, by helping all family members deal with the heightened stress, most develop skills to better manage, make changes, and move forward with their lives.

Friends vs. Frenemies

It is comforting to have a few close friends with whom you can totally relax and feel social support, but most of us realize that not all friendships are created equal.

Some relationships not only cause stress, they can even threaten your cardiovascular health according to researchers at Brigham Young University. The research found that unpredictable and ambivalent friendships raise our blood pressure because they do not help us deal with stress and are themselves a source of heightened stress.

“The type of friend we are talking about is someone we may really love or care about,” said Professor Juliane Holt-Lunstad, author of the 2008 study published in the *Annals of Behavioral Medicine*. “However, they can also at times be unreliable, competitive, critical or frustrating. Most people have at least a few friends, family members or co-workers that fit the bill.” So, while the frenemy kind of relationship works to fuel the drama on reality TV, those may not be the healthiest of relationships to focus on in real life.

As you can see from just this basic exploration of our many, everyday stress triggers, every age presents its own unique opportunity for stress. What you can take away from reading and learning about other people’s stress triggers is how different groups each experience external stress. When equipped with this information, you can relate better to, and even help alleviate, their stress, and in the process, your own.

Self-Help: The Reflective Detective

Generally speaking, we know that human beings are good at picking up what other human beings are feeling and experiencing. In recent years, scientists have identified the brain cells they believe are partially responsible for this. These specialized brain cells, called mirror neurons, will fire in the same region of your brain as they fire in the brain of another person who you may be simply observing. Often we feel like crying when we see someone else crying. Or, we get frightened during a movie when the actor looks scared. We may even get hungry watching other people eat food, even if we just ate. When it comes to stressful behavior, there is no question that being around someone who is acting stressed will stress you out, too.

Stress is very contagious. It makes sense from an evolutionary point of view that if we saw someone under stress we would worry that the same stressor would also impact us, and our mirror neurons would kick in. We still have this profound biological ability to react automatically with our ancient brain mechanisms, especially if we’re not paying attention.

But we have evolved. Human beings have developed a brake to just reacting; it’s a function of our

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