Chapter 1

Do You Know the Meaning of Stress?

One day I suggested to my research team that we venture outside our laboratory to conduct a "field" survey. So on a Saturday afternoon we went to a very busy shopping center with the goal of asking the first 100 people we met three questions and then studying their answers.

The first question asked was, "Do you know what stress is?" Ninety-nine people responded "yes," the hundredth being too busy shopping to answer our question! The second question was, "What is stress?" The 99 individuals told us that stress was "time pressure"—people feel stressed when they do not have time to do all the things they want to do in the time available. The last question was, "Which group do you think is the most stressed: the elderly, children or adults?" The 99 blithely replied, "No question! Adults!"

This answer reflects common sense. If stress is a consequence of time pressure, adults are clearly the most stressed group, given the pressure of schedules, the 100,000 jobs to do, children to take to and from daycare, the work that never ends, children's sports activities in the evenings and on weekends, aging parents who need assistance, and the list goes on!

This reaction reminded me of the early days of my research career, when I was studying stress among the elderly. Many people appeared skeptical when I told them about my PhD thesis. I was told, "Oh great! You're working on the stress of the elderly. Not exactly a thrilling research project. You would do better to study us, the adults, with our crazy jobs, our lives as stressed-out parents and everything else!"

Why do these people have the impression that the elderly and children suffer less from stress than they do? It's precisely because their definition of stress revolves around time pressure. Since older people are retired, they have all the time they could want and therefore time pressure cannot be causing them stress. In addition, we often stereotype the elderly: they walk slowly; they drive slowly; in short, they do everything slowly. They therefore cannot possibly suffer from time constraints and, by extension, cannot be more stressed than we are.

Similarly, our children also do not appear to suffer from time pressures. They do not have a domineering boss, or urgent bills to pay at the end of the month, or rushed shopping to do; they have only to spend time with their friends and pursue their favorite activities. So they too would not experience stress.

Here is the first myth in the public perception of stress: because we consider stress a consequence of time pressure, we conclude that the elderly and children are necessarily less stressed than adults are. This is wrong.

Scientific discoveries during the last two decades show that the opposite is in fact true. The elderly and children are actually much more vulnerable to stress than adults. Their brains are much more affected by stress than ours. In fact, this vulnerability increases among the elderly as a result of the impact stress has on a brain that is aging and slowly deteriorating—it has been shown that stress has the capacity to accelerate the aging of the brain in the elderly.

Children's brains are also very vulnerable to stress because their brains are still developing. It has also been shown that stress can delay the development of some parts or functions of the brain in children.

Along with the myth of time pressure as a cause of stress, there is a variant that has appeared in recent years, this time associated with children. According to this belief, parents are constantly pushing their children to rush to do all sorts of activities: go to school, do their homework, engage in one sport or extracurricular activity after another, both during the week and on the weekend. So, parents themselves are

creating time pressures for their children. You see this repeated all the time in newspapers and magazines, which suggest the possibility that the many sports and cultural activities in which our youth are enrolled in the evenings and on weekends cause them to rush and therefore have become a source of stress. Since stress is time pressure, the link is obvious: children, like adults, are stressed.

The poor parents, in addition to having to manage their own stress, must now consider whether getting their children involved in sports activities—given the persistent message that exercise represents the key to preventing obesity in young people—could create stress for them. One day a totally distraught parent expressed his confusion on the subject: "It's crazy. Either we stress out our children, or we make them obese!"

But is it really time pressures that put stress on our children? Children are bundles of energy, and sports often replace the distance that children in another era would have walked to school. Not only do they no longer go to school on foot, but video games are now a major part of their activities. So, before concluding that sports activities create stress for children because they generate time pressure, it's best to ask whether stress is really due to time pressure. I state clearly that it is not!

Stress Is Not the Same As Time Pressure

To reassure you about registering your youngest in the next hockey camp, allow me to demolish the first myth about stress. Stress is not generated by time pressure. Let's examine the evidence to the contrary.

If stress is strictly the result of time pressure, then how is it that we can be stressed during a visit to the dentist on a day off? In such a case, you will agree that time is not a factor because you are off work. And the receptionist or dental hygienist will not rush you, stopwatch in hand, to the dentist's chair! Yet the average person is stressed by a visit to the dentist, and the stress is considerably eased on leaving the dentist's office, even with a hefty bill.

Consider some more examples. What about the enormous stress you experience when you learn that you or someone you love has a serious illness? Or when you are summoned to the boss's office during a major corporate restructuring? Or when your mother-in-law shows up on a Friday night and announces that she has come to spend the weekend, when you have been looking forward all week to having a

restful few days? How do we explain stress in these situations in terms of time pressure?

I am sure that in all these situations, you will see a surge of stress at least as significant as if you were late to pick up the children at daycare. Yet in each case, there is no time pressure involved. Therefore, stress is not the result of time pressure.

But then, what is it that causes stress? The most thorough way to answer this question would involve stepping back in time to see how the concept of stress arose, how it has evolved over the decades and how scientists perceive it today.

I know, I know, you're in a hurry to get to the heart of the subject and read more in depth about what will induce a stress response. That is why I will not bore you with a long chapter on the history of the science of stress. However, if you are interested in better understanding how researchers have come to discover the information that I summarize in this book, you can go to Appendix 1, where this history is recounted.

In the meantime, I'll just list some very important facts that have marked the evolution of the science of stress during the last century. Researchers have understood that it is not our emotional sense of pressure that forms the basis of physical and mental disorders associated with stress. Actually, these disorders have their origin in the physical: they are related to stress hormones produced in response to situations that the brain has identified as posing a threat.

As we shall see in later chapters, our brain plays a critical role in helping us survive: it helps us detect threats in our environment. When the brain detects a threatening situation, it triggers a series of actions that result in the production of stress hormones. These hormones enable us to do the only two things one can do in the face of danger: fight or flee.

Both of these actions require energy. The two stress hormones give us the energy to fight the threat or flee if the risk is too great. It is this wonderful response that allowed us to hunt mammoths in prehistoric times or flee successfully when they were too big.

However, research has also shown that when secreted, these hormones have the capacity to return to the brain and affect our memory and our emotional control by acting on regions of the brain involved in these functions. Because of the effect of stress hormones on the body and the brain, ongoing and significant production of these hormones forms the basis of various physical and mental disorders associated with chronic stress.

And here is the most important information that has emerged from the scientific study of stress in the last century. Researchers have shown that a situation must contain at least one of four characteristics to induce a stress response that could have long-term deleterious effects. With any of these four characteristics, it does not matter who you are—whatever your gender, your age or your work, you will produce stress hormones, and you will do so every time.

The researchers also demonstrated that a situation need not necessarily contain all four characteristics to induce a stress response, but the production of stress hormones increases the more a situation has these elements. These four characteristics are discussed throughout this book, and I hope they prove an effective tool for lowering the extent of your reaction to stress.