

## ARTICLE ONE

### STRESS AND YOUR BODY

I avoided using the word *stress* in the seminar because of its popular misconceptions and ambiguities. In these articles we will look at this topic in more depth and will use the common terms used in stress research. Technically, what I have been referring to as pressures and demands are called *stressors*. The effect on our minds and bodies because of our response to stressors is called *stress*.

Whatever terms we use, most of us have a sense of what stress is. For most of us it is the tension we feel when the demands of life—relational, vocational, physical, financial, spiritual, and so forth—seem to exceed our resources. I have called the spiritual and mental tension from these demands “noise in the soul.”

In session 1 you learned that “a noisy soul promotes the destruction of the body.” Many people do not realize how wrongly handled pressure *may* contribute to the following:

1. Unexplained weight gain—“*Why is it that no matter what diet or exercise program I use, I can't lose weight?*”
2. Sleep disorders—“*No matter what I do or what medicine I take, I still can't seem to 'click off' at night. I lie awake for hours, and when I do fall asleep, I wake up at the slightest noise.*”
3. Chronic exhaustion—“*No matter how many hours I sleep, I still wake up fatigued!*”
4. Autoimmune dysfunction—“*It seems like I am susceptible to every 'bug' in the atmosphere. I have developed allergies I never knew existed, and nothing my doctor gives me really helps.*”
5. Aggravation of preexisting pathologies—“*The doctor says there isn't any real explanation for why I experience so much joint pain when my arthritis isn't that bad.*”
6. Promotion of new disease and dysfunction—“*It seems like every month I am facing some new disintegration in my body. Am I just 'disease-prone'?*”

To be sure, every one of the above problems may have other causes, but most physicians are in agreement that stress is at least an aggravating culprit in many of these maladies. The immediate goal of this discussion is not to help you diagnose the cause of physical problems, nor is this an attempt to blame all physical problems on wrongly handled pressures. But if you have a physical problem, wrongly handled pressure will complicate and exacerbate that condition even if its original cause was not mishandled stressors.

We know that God never intended for fallen man to be disease free. He did intend for us, however, to be good stewards of our bodies, and He desires that we think biblically about life's challenges. To ignore our bodily, mental, and spiritual stewardship is to invite disaster. Therefore, no matter what the original cause of our physical ailments, we can profit physically from the right spiritual approach to the demands and pressures of life. More importantly, learning to handle these issues biblically glorifies God—regardless of whether we profit physically.

To understand what is happening in the “stress response”—and what we will discuss later in the “relaxation response”—we must review some basic biological facts we learned in high school. This is not extraneous information. It is vital to your understanding of why wrongly handled stressors are so harmful to the body. The information below comes straight from a high school biology text.

### THE BODY ON “AUTOMATIC PILOT”<sup>1</sup>

All internal organs (glands, blood vessels, the heart, and the smooth muscle tissue in the walls of internal organs) are under the control of the **autonomic nervous system (ANS)**, the involuntary part of the peripheral nervous system. These parts function automatically without conscious control.

The ANS helps maintain a steady internal condition in the body. For example, the ANS carefully regulates the internal body temperature (keeping it an almost constant 98.6°F) and the pH of the blood (keeping it within the narrow range of 7.35–7.45). It also regulates the heart-beat, perspiration, breathing rate, and other body activities.

There are two divisions of the autonomic nervous system: the *sympathetic* and the *parasympathetic*. These divisions have generally opposing influences on body organs. While both divisions function at all times, one usually dominates at a time, depending on the environmental stimuli.

The **sympathetic nervous system** is composed of neurons whose fibers originate in the thoracic and lumbar portions of the spinal cord. It helps the body adjust to stressful or frightening experiences. It is “sympathetic” to problems during times of emergency; it helps a person “gear up” in order to survive and be successful.

For example, if a person suddenly sees a snake move across his trail while he is hiking, his sympathetic division instantly activates his body. Primarily, the adrenal glands release a rapid surge of the hormone epinephrine (adrenalin). The adrenalin stimulates a quick increase in heart and breathing rates and causes a rise in the blood sugar needed for muscle action. The pupils of the eyes dilate quickly so that he can see where he is running. His digestive system is “shut off.” (“I can finish digesting food later; now I must save the body.”) His entire nervous system is put on emergency standby, making him jumpy.

The **parasympathetic nervous system** is composed of neurons from the brain stem and the sacral portion of the spinal cord. Its overall function opposes that of the sympathetic nervous system. It serves the “business as usual” functions of the body. It stimulates proper digestion, absorption of food, and elimination of wastes. It also maintains slower, normal heart and breathing rates as well as lower blood pressure. These functions are performed best when a person relaxes in a pleasant, peaceful environment. The best example of the control of the parasympathetic system is its control over a person who sleeps after eating a delicious meal.

The sympathetic and parasympathetic nervous systems are both necessary, but both can be misused. A person who is almost constantly in stressful situations, stimulating the sympathetic nervous system and having the body on alert most of the time, may damage his body. If a person is constantly “tense,” he may not be able to meet the demands of an emergency because he has exhausted his supply of reserves. Peace and rest are necessary for a properly functioning human body.

### SIGNS OF STRESS<sup>2</sup>

The following lists are indications that you may not be handling the demands of life in a biblical fashion. They reveal that the body and mind (the top two beams in the bridge illustration in session 3 of the seminar) are not holding up well under the pressures. These lists certainly do not constitute a scientific diagnosis but should cause you to examine what is going on in your life and how well you are handling it. The presence of several of them indicates a noisy soul if other medical causes for them have been ruled out.

<sup>1</sup>*Biology for Christian Schools*, 2<sup>nd</sup> ed. (Greenville, SC: BJU Press, 1999), 588.

<sup>2</sup>Lists from Cyalene P. Bryce, “Insights into the Concept of Stress” (Washington, D.C.: Pan American Health Organization, 2001), 19–21.

*Common physical signs and symptoms of stress:*

- Rapid heart rate
- Elevated blood pressure
- Nausea and/or vomiting
- Chest pain (urgent medical evaluation indicated)
- Difficulty breathing (urgent medical evaluation indicated)
- Fainting (urgent medical evaluation indicated)
- Dizziness
- Tremor
- Increased perspiration
- Headaches
- Muscle twitching
- Thirst
- Weakness
- Fatigue
- Grinding teeth
- Visual difficulties
- Hearing difficulties
- Non-specific body complaints

*Common cognitive signs and symptoms of stress:*

- Poor concentration
- Memory impairment
- Increased or decreased awareness of one's surroundings
- Difficulty making decisions
- Poor abstract thinking
- Difficulty identifying familiar objects or people
- Loss of time, place or person orientation
- Racing thoughts
- Disturbed thinking
- Intrusive images

*Common emotional signs and symptoms of stress:*

- Apprehension
- Uncertainty
- Fear
- Agitation
- Anxiety
- Severe panic
- Anger
- Feeling overwhelmed
- Irritability
- Hopelessness
- Emotional shock

- Guilt
- Grief
- Depression
- Denial
- Inappropriate emotional response

*Common behavioral signs and symptoms of stress:*

- Change in activity levels
- Sleep disturbances
- Erratic movements
- Change in usual style of communication
- Loss of interest in previously pleasurable activities
- Change in eating habits
- Emotional outbursts
- Antisocial behavior
- Inappropriate use of humour
- Suspiciousness
- Hyperarousal
- Substance use (e.g., caffeine, nicotine or alcohol use)
- Deterioration in performance and effectiveness
- Accident proneness
- Nervous mannerisms (e.g., foot tapping, nail biting, teeth grinding, hair pulling, hand-wringing, etc.)

Suppose you were to go out to your car in your garage, set the parking brake, put the transmission in park, start the engine, and push the accelerator to the floor. The engine would race and eventually overheat. All the energy produced by the engine was designed to be turned into motion to get you from one place to another. When your car is parked with the engine full speed, the energy is turned into heat only. Eventually some component in the car will fail—a seal will rupture, a water hose will burst, a bearing will seize, or something else catastrophic will destroy the engine.

The stress-response mechanisms of the body respond in a similar fashion. If they are overloaded for an extended period of time, some bodily function will begin to disintegrate. The lists above are some of the signs that the “engine is overheating.”

As you can see from this brief overview, God has created the human body with a remarkable mechanism to handle the emergencies of life. That same mechanism can become destructive, however, if it is continually activated.