

A Time for Healing

Timothy Wilken, MD

Thursday Evenings 7:00 to 8:30 PM

A continuing program of lessons, meditations, exercises
and discussions on health and wellness.

Understanding Stress

January 06, 2005



Science of Mind

Opening Treatment

Understanding Stress

Today, we are all confronted with stress in our lives.

Today we all have concerns for our survival.

Not only our physical survival, but our economic survival.

How do I protect myself and family from crime and terrorism.

How secure is my job? What will I do if I get laid off?

How will I pay my bills, send my children to college, and hold my family together?

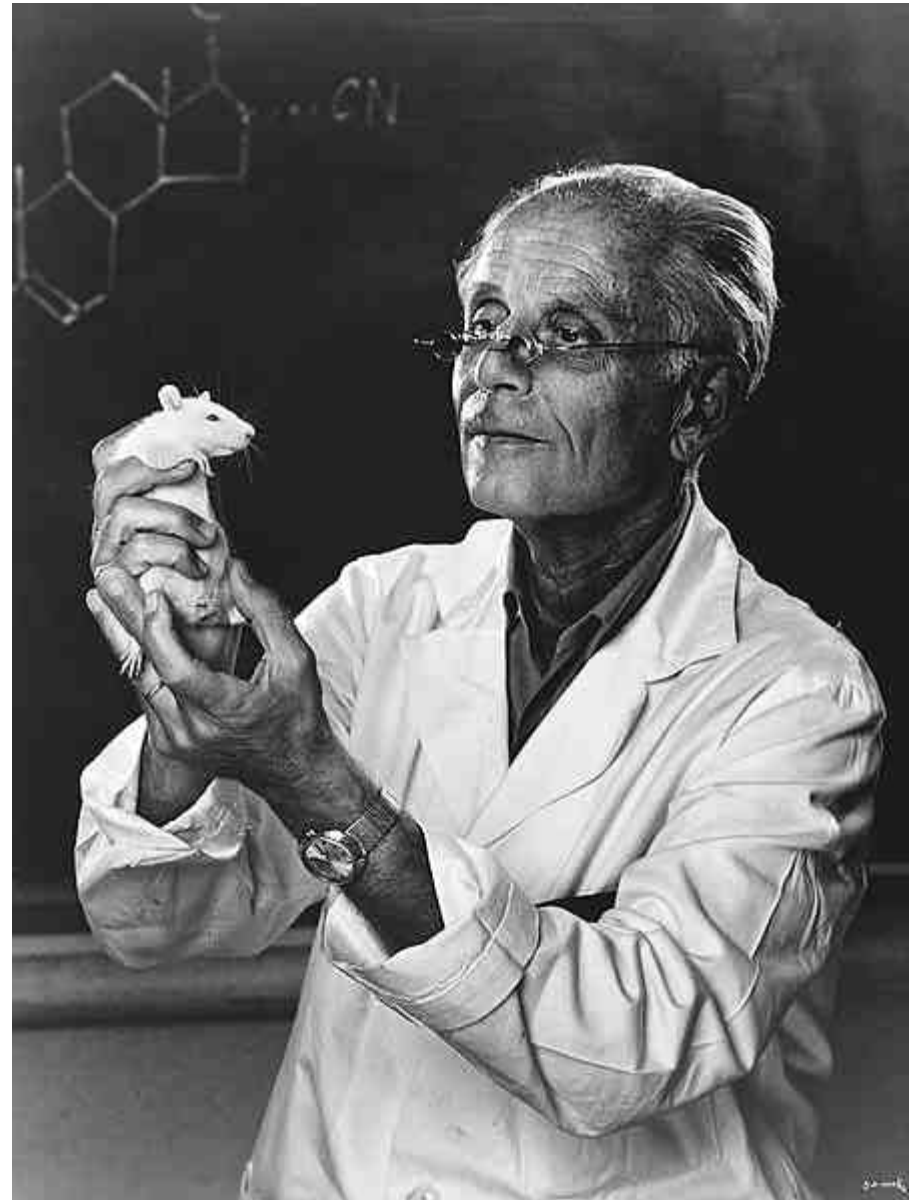
“What is stress? The soldier who sustains wounds in battle, the mother who worries about her son, the gambler who watches the races—whether he wins or loses—the horse and the jockey he bet on; they are all under stress.

“The beggar who suffers from hunger and the glutton who overeats, the little shopkeeper with his constant fears of bankruptcy, and the rich merchant struggling for yet another million; they are all also under stress. The mother who tries to keep her children out of trouble, the child who scalds himself—and especially the particular cells of the skin over which he spilled the burning coffee—they, too, are under stress. This is a fundamental question in the life of everyone; it touches closely upon the essence of life and disease.”

Hans Selye

Hans Selye

was born in Vienna in 1907. As early as his second year of medical school (1926), he began developing his now-famous theory of the influence of stress on people's ability to cope with and adapt to the pressures of injury and disease.



The Nature of Stressors

Dr. Hans Selye discusses the definition of Stress at length in many writings. His simplest and most generally accepted definition is: “The non-specific response of the body to any *demand*.”

Today science knows that the body and mind are a single system. So we should rephrase Selye’s definition as: “The non-specific response of the mind-body to any *demand*.”

And this leads to a powerful new definition: A *stressor* is any *demand* made on the *mind-body* to *adapt*.

Any Demand to Change

Anything that requires you to change in any way is a stressor. Another word for stressors is *needs*. All living systems have *needs*, and they meet those needs with *action*.

Stressors are not necessarily good or bad, they are just demands to adapt. They can be good, and not so good depending upon their effect and how we respond to them.

A good stressor is one to which we respond to by growing — by evolving — by learning — by becoming stronger.

A bad stressor is one to which we respond to by regressing — by becoming weaker — by becoming ill or injured.

Stressors — Classes & Types

Our expanded definition of stressor allows us to divide stressors into two general *classes* — *external* and *internal*.

We will first discuss the external stressors. These are all the demands made from outside the mind-body.

External stressors can be divided into three *types* — *physical*, *biological*, and *social*.

Physical Stressors

The physical stressors are any physical demand made on the mind-body to adapt. They include heat, cold, ionizing radiation, chemicals, poisons, toxins, fire, electricity, and trauma of any type.

If you bang your hand with a hammer, that's a physical stressor. If a car runs over your leg that's a physical stressor. If someone hits you in the head, that's a physical stressor.



Biological Stressors

The biological stressors are any biological demand made on the mind-body to adapt. These are primarily adversary living systems which adapt by attacking and exploiting the mind-body. They may be simple or complex. Examples include viruses, bacteria, rickettsia, fungi, parasites, and predators. When I get an infection, I'm succumbing to a biological stressor. This could be the cold or runny nose you treat at home, or the pneumonia I treat at the hospital.



Social Stressors — Coercive

The social stressors are any social demands made on the mind-body to adapt. Social stressors are of two types: *coercive* and *non-coercive*.

The *coercive* social stressors are *non-voluntary* demands made upon the mind-body to adapt. This would include assault, murder, rape, theft, arson, and any crime against an individual and his property. Another example of the coercive social stressors are the non-voluntary demands made by any form of political government such as taxation, regulation, restriction, and incarceration. This would further include all social stressors produced by action of the political government—i.e. war, inflation, recession, injustice, et cetera.

Social Stressors — Non-coercive

These are the voluntary demands made on the mind-body to adapt. They include all voluntary contractual demand relate to marriage, employee/employer relationships, personal friendships, purchase contracts, financial loans, et cetera.

The non-coercive social stressors also include the positive stressors for humankind. These are the demands we place on ourselves to achieve our goals and build our civilization. So, some stressors are good for us.

We humans are social creatures, and social stressors are the largest group of external stressors that we humans face. We modern humans seem fairly good at protecting ourselves from physical stressors, and today's medical system is pretty proficient at helping us deal with biological stressors. But our social stressors are the ones that require the most from us.

Internal Stressors

Demands from inside the mind-body are internal.

Our need for oxygen, water, and food are internal.

Our need for shelter from excess heat and cold, rest and sleep to refresh and heal our bodies are internal.

Humans require a rich psychological and social life. In two words, humans require *love* and *meaning* in their lives.

Our need for love and meaning is internal.

When we successfully meet our needs for oxygen, water, food, and shelter we survive.

When we successfully meet our needs for love and meaning we prosper.

Mal-Adaptation

Another type of internal stressors are those produced by **mal**adaptation of the mind-body to stressors. These include inappropriate negative emotions.

If a human emotion is appropriate to the provocative stressor, then the emotion serves as part of the mind-body's *stressor adaptability*. However, if the emotion is inappropriate, then that emotion becomes an internal stressor for the mind-body. Anger is the emotion that accompanies the mind-body's preparation to fight. If fighting protects you then it is appropriate. If it only gets you a bloody nose, and thrown in jail, it is inappropriate and a major internal stressor. If running will solve your problem, then fear is appropriate. If there is nowhere to run, it is inappropriate and an internal stressor.

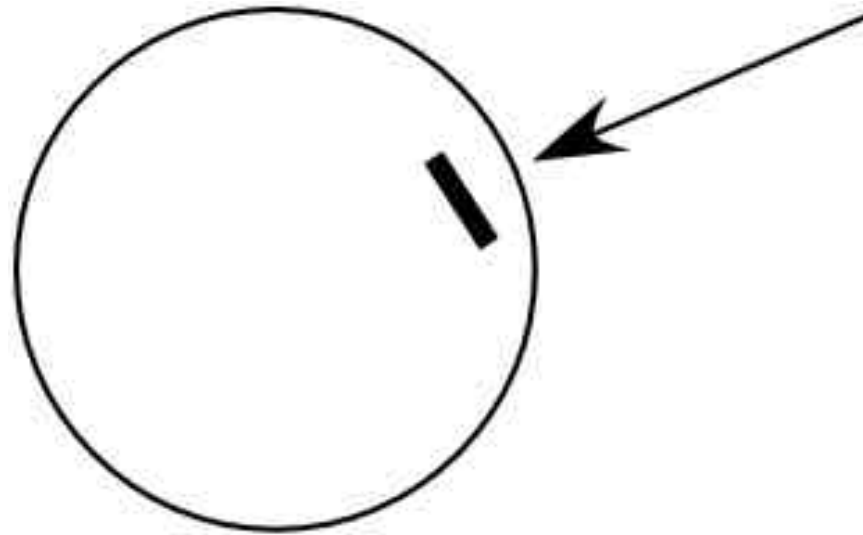
The Unified Stress Concept

Stressor Adaptability

This is our *ability to adapt to stress*—the ability of the mind-body to change in order to survive. If we have high *stressor adaptability*, we can overcome a lot of *stressors*. If we have low stressor adaptability, those same stressors may make us sick. So another factor in health and wellness is our individual stressor adaptability.

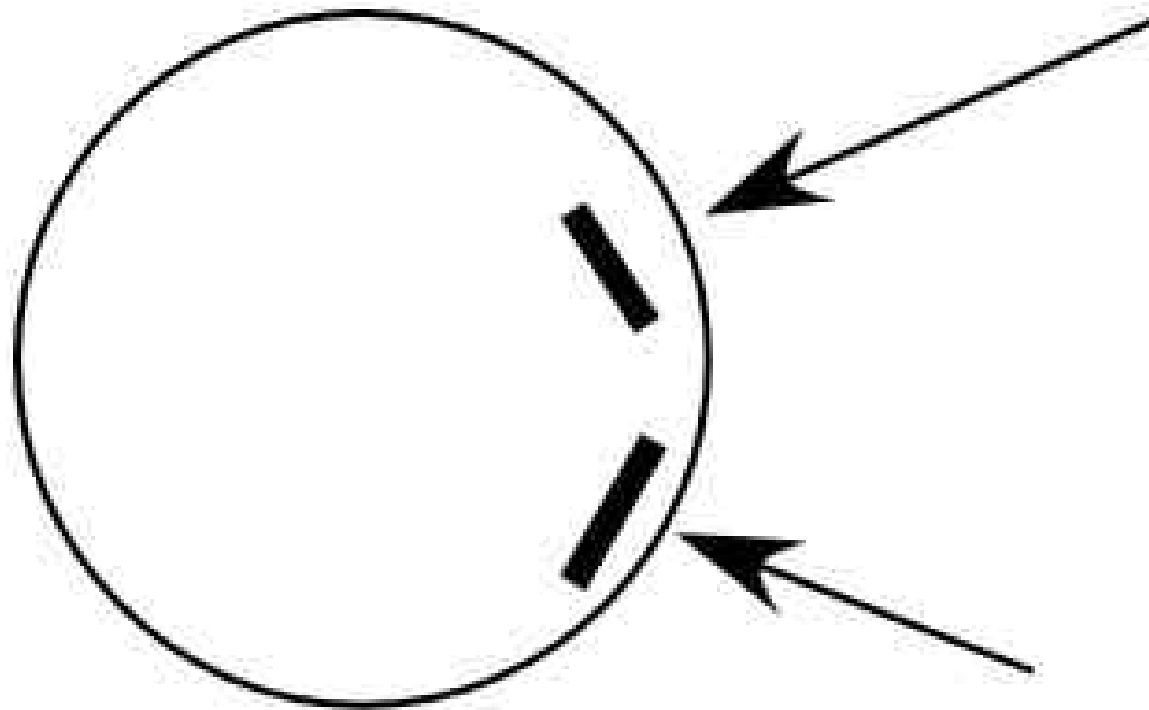
If our stressor adaptability is low, or if we don't understand how our brain and mind work, we may generate powerful emotional responses to stressors that are inappropriate and **maladaptive**. These are often the adversary emotions—anger, fear, frustration, resentment, or guilt—all of which can be powerfully distressing. And, they are rarely helpful to modern humans, since most of our problems cannot be solved by hitting hard or running fast.

Now let's use a simple drawing to help us visualize this process. Let us use a circle to represent an individual. The arrow will be a stressor. It could be a physical stressor, biological stressor or social stressor. Imagine that the stressor is coming into my system from outside of me.

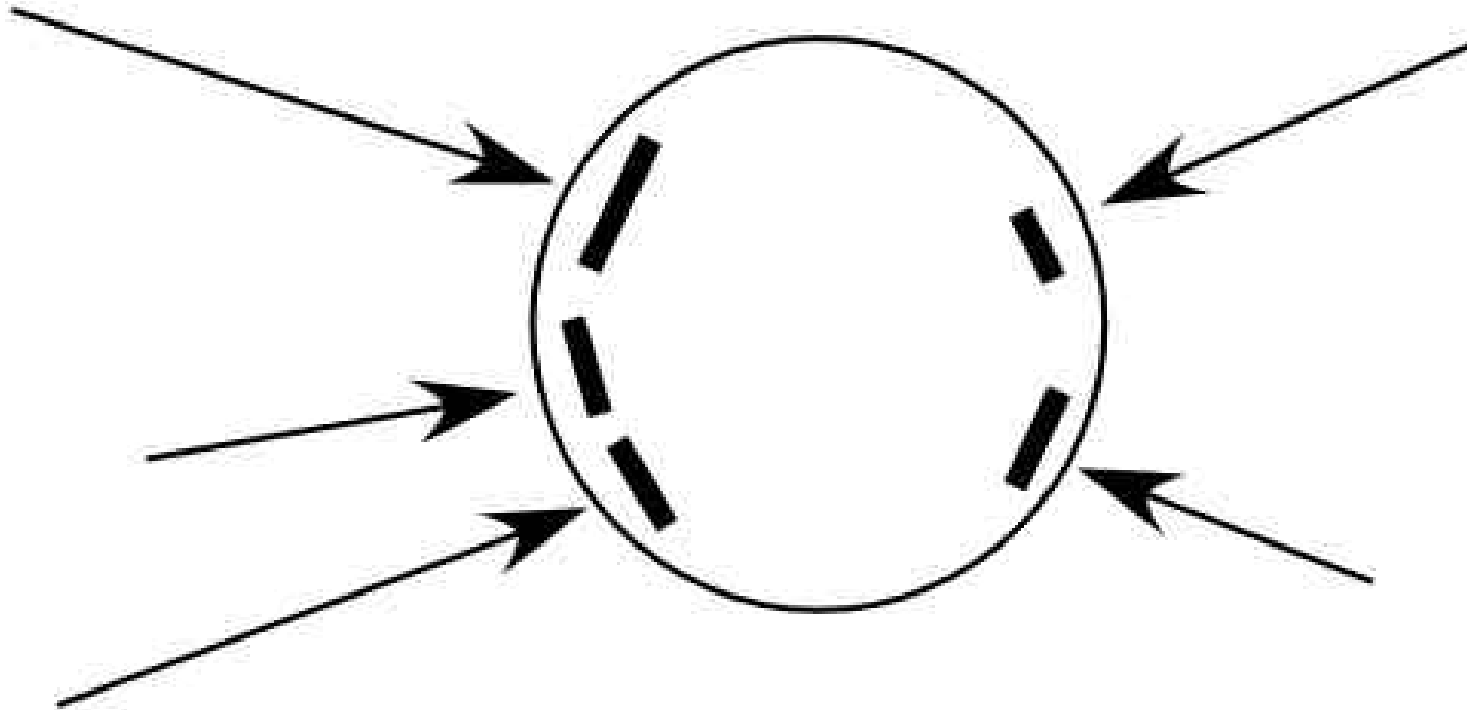


And, I will use a small bar to represent the my stressor adaptability. If I have adequate stressor adaptability, I will push some of my stressor adaptability right up there against my boundary, and by so doing protect myself from that stressor.

But life is rarely as easy as dealing with one stressor. Let us imagine there is another stressor, so immediately I must put some stressor adaptability over there to defend from that.

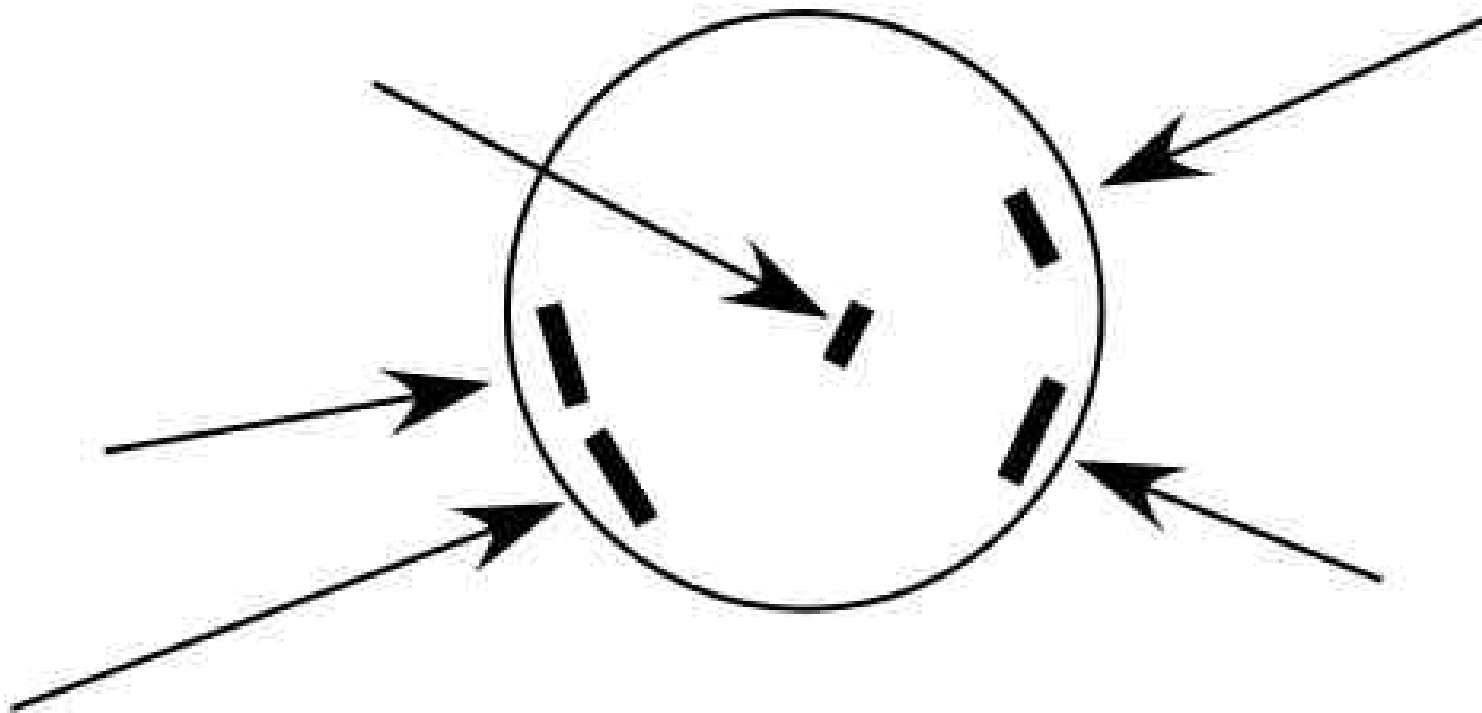


Here's another stressor, and again, and again, and again.



Perhaps, I was out on the beach too long and I got sun burned. Then I got exposed to a virus at work. So now my mind-body is trying to deal with healing itself from a burn and protecting me from a viral infection. And, at the same time deal my boss wants me to work overtime, and then there is that overdue electric bill that must be paid.

If the stressor is stronger than my stressor adaptability — than my ability to deal with it, we get a *penetration*, we get *disease*. So anytime a stressor is larger than your ability to deal with that stressor you get sick or you become injured.



In our stress diagram, disease or injury is represented by the arrow penetrating the perimeter of our living system.

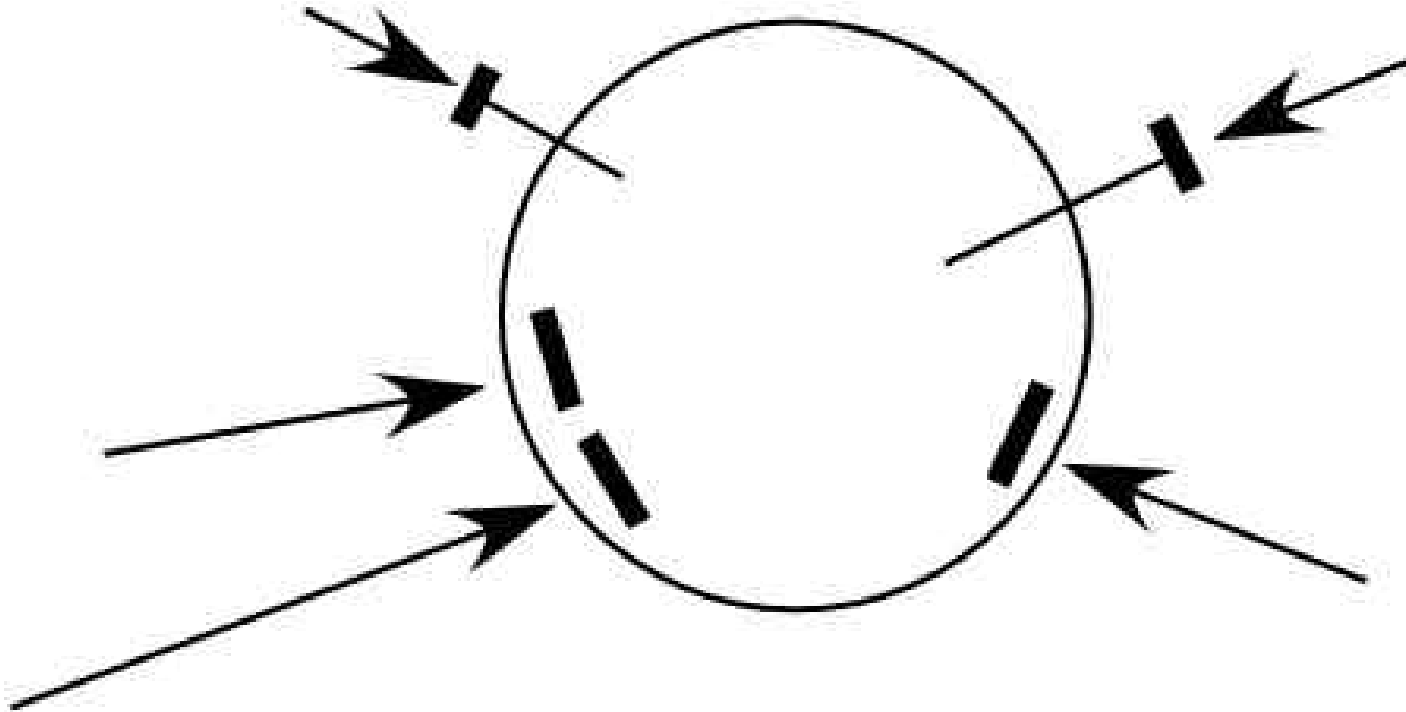
Disease

Now we can define disease. Disease results when our stressor adaptability (**sa**) is less than the sum of the stressors (**s**), acting on our mind-body.

Disease ———> when $(sa - s) < 0$

Any time your stressors are larger than your stressor adaptability then you get sick or injured.

When I am healthy, I have all my stressors taken care of, then I can push some stressor adaptability outside of myself, and use it to solve an external problem.



This is represented by the *stressor adaptability bar* pushed outside the circle of the diagram. With extra adaptability, I can complete more tasks, clean the garage, paint the house.

Health

So we can see that health is defined as being just the opposite of disease. Health is that condition when the adaptability minus the sum of the stressors acting on it is greater than zero. Health results within a living system whenever the stressor adaptability (**sa**) — the total ability of the living system to adapt to stressors—equals or exceeds the sum of stressors (**s**) acting upon the living system.

Health ————> when (sa - s) ≥ 0

So when I have extra adaptability, when I have more adaptability than I have stressors, then I am in a state of health.

Understanding Stress

We can now develop a more satisfactory definition of stress within living system.

This definition of stress is patterned after the classical definition of stress from physics. Stress in physics is defined as follows: If a steel wire is put under tension, then:

$$\text{(physical stress) } \mathbf{S}_p = \mathbf{F}/\mathbf{A}$$

F (force along the wire) divided by A (the cross-section area of the wire)

Stress in Living Systems

For living systems, I define stress as follows:

$$\text{(living system stress) } \mathbf{S}_{ls} = \mathbf{s} / \mathbf{sa}$$

\mathbf{s} (sum of stressors) divided by \mathbf{sa} (stressor adaptability)

From the above definition of living system stress, it follows that disease can be said to exist in any living system wherein the stress is greater than one (1).

$$\mathbf{S}_{ls} = \mathbf{s} / \mathbf{sa} > 1$$

Stages of Disease

Disease is an evolutionary process, and the concept of living system stress is helpful in staging disease within a living system. I find it useful to define four stages of disease that can exist within the living system as a whole or within any of the levels of organization within the living system.

The four stages of disease are defined as: Distress, Disability, Damage, and Death.

DISTRESS

Stage 1—Distress exists within a living system when the sum of stressors acting upon the living system exceeds the stressor adaptability of the system producing a localized or generalized loss of function. The living system, by using reserves and stored energy, is able to restore function without disability.

DISABILITY

Stage 2—Disability exists within a living system when the sum of stressors acting upon the living system exceeds the stressor adaptability of the system producing a localized or generalized loss of function. The living system is unable to restore function even using reserves and stored energy. This must always include functions considered essential; should include functions considered normal; and when more is known, will include functions that are considered optimal. When using this definition of disability, it is necessary to state the level of organization with the living system to which the disability refers. Disability, by definition, is reversible.

DAMAGE

Stage 3—Damage exists within a living system when the sum of stressors acting upon the living system exceeds the stressor adaptability of the system producing a non-reversible disability. Damage can exist at any level of organization within the living system or within the living system as a whole. No cure is possible at this stage of disease.

DEATH

Stage 4—Death exists within a living system when the sum of stressors acting upon the living system exceeds the stressor adaptability of the living system producing a loss of ability of the living system to produce *syntropy* or *order*. Death is irreversible.

Disease is evolutionary—first distress, then disability, then damage, and finally death.

DISEASE

The stages of disease—distress, disability, damage, and death can exist at individual levels of organization within living systems as well as the living system as a whole.

The first few stages of disease—distress and disability—are curable. The second two stages of disease—damage and death—are not curable and not reversible.

As the science of medicine progresses, disease presently considered damage may be converted to disability by new understanding and technology.

Balance

So the first lesson from your new understanding of stress and disease is to realize that you have to have balance. You have to balance your stressors with your ability to adapt. It's always a balancing act.



The body works best by balancing its *stressors* with its *adaptability*—tasks with its energy —needs with its actions.

Balancing Stressors & Adaptability

Each of us must act as our own stress manager. We need to constantly ask ourselves the following questions: “What are the stressors in my life?” “How much adaptability do I have?” “Am I doing a good job of balancing those two?”



Learning to say NO!

Sometimes the most powerful thing you can do in terms of balancing your stress and adaptability is learn to say no.

“Can you?” ... “NO!” “Can you?” ... “No I can’t.” ... “Why not?”
... “Because I am already stressor overloaded, and if I take on any more stressors, I will get sick.”

This is one of the most important things any human can learn to do. Stressor overload causes disease. Chronic stressor overload causes chronic disease and increases your risk for cancer.

So *listen* to your bodies. *Prioritize* your tasks. *Balance* your life so that your *adaptability* is always a little larger than the *sum of your stressors*.

Wellness Requires Balance

Wellness is largely learning to accept our human limits. In other words, beginning to understand that you are only able to do so much. We humans are a powerful form of life. We can do great things. But our achievements will be greatest when we respect ourselves and balance our stressors and adaptability.

How many of you are familiar with the first verse of *The Serenity Prayer* by Reinhold Neibuhr? I am sure that on some level, he understood stress.

GOD, grant me the
Serenity
to accept the things
I cannot change;
Courage
to change the
things I can;
and the
Wisdom
to know the difference.

—*Reinhold Niebuhr*



Relax

There's lots of time. ...

A Personal Time for Healing

Scheduling time for yourself.

Minimum of thirty minutes every day.

Quiet.

No phones. No noise. No distractions. Nobody.

Relaxation, Meditation, Music, Silent walk, or Stress reduction exercise

Stressor Dump Technology

- 1) Relax ...
- 2) Invite your stressors (limit to 5 to 10)
- 3) Evaluate for ownership and control, return those you don't own, and let go of those you don't control.
- 4) Prioritize the remainder (if I could only do one?, if I could only do two?, if I could only do three? ... Etc..
- 5) Always starting with highest priority, solve completely all that you can.
- 6) Next, solve partially all that you can. Do something now.
- 7) Make a plan to solve the remainder, and schedule a time to revisit and address those stressors.
- 8) Let go ...
- 9) Repeat exercise once or twice a week.

A Time for Healing

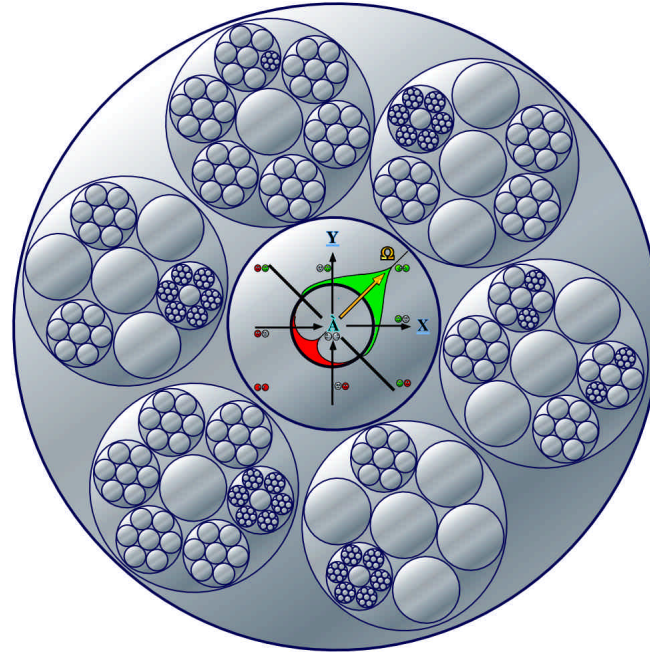
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Understanding Anger
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Local Physician, Synergic Scientist,
and Perennial Student

www.SynEARTH.net