Stress Management

Objectives:

1. **To become aware of what stress is.**
2. **To become aware of the signs and symptoms of stress.**
3. **To understand how stress and brain chemistry interact.**
4. **To understand why people react differently to stress.**
5. **To become aware of when stress becomes an anxiety problem.**
6. **To learn what can be done to reduce stress.**

What is stress?

Stress is the non-specific response of the body to any demand. A stressor is anything that causes you stress – any demand on your mind or body.

What are some examples of things that cause stress? (on board)

Characteristics of Stressors

Stress can be viewed in a number of ways. For example:

Unpleasant	Flat tire, getting sick, being fired, having a fight with a friend
Pleasant	Having new furniture delivered, getting married, having a baby, promotion at work
External	Cold weather, a menacing dog, dominating spouse, high altitude
Internal	When you expect perfection in everything, push to work faster at something
Too many	Working two jobs, going to all the holiday parties, having all your relatives over
Too few	Watching TV all day, sitting around doing nothing much of the day, boredom
Chronic	Chronic illness, constant noise from airport traffic, unhappy marriage
Acute	Delivering a speech, entertaining guests for dinner, fixing a leaky faucet
Familiar	Second time to get a root canal, third time to face a tornado
Unfamiliar	Getting a root canal for first time, facing tornado for first time
Changeable	Car that breaks down, poorly fitting shoes, a bad marriage
Unchangeable	Permanent physical disability, death of loved one

Your body has a broad definition of stress. To your body, stress = change. Anything that causes a change in your life causes stress. It does not matter if it's "unpleasant" or "pleasant," "external" or "internal." Imagined changes, or things you worry about happening, are just as stressful as if they did happen.

What are the signs and symptoms of stress?

How stressed are you?

Events and circumstances, both external and internal, can cause stress. Although no assessment tool or device can truly capture the level of stress that one experiences, there are some scales that have been developed to "estimate" the degree to which one experiences "common" stressors.

What happens if I'm over-stressed?

Over-stress will eventually make you sick. Carrying too heavy a stress load is like running your car engine past the red line, or leaving your toaster stuck in the "on" position. Sooner or later, something will break, burn up or melt down. So, it is important for you to know when you are becoming over-stressed.

Stress can affect you on several different levels. It can affect your physiology (body), your psychology (mind) and your behaviors (activities).

Physiological Effects of Stress

The three systems most directly involved in physiological stress symptoms are the cardiovascular, digestive and muscular systems.

Cardiovascular

- Symptoms: elevated heart rate, high blood pressure, fluctuations in heart rate
- Disorders: coronary artery disease, hypertension, strokes, rhythm disturbances of the heart

Digestive

- Symptoms: burning sensation, nausea, butterflies, appetite loss, diarrhea, indigestion
- Disorders: irritable bowel syndrome, colitis

Dermatological

- Disorders: eczema, neurodermatitis, acne

Auto-immune

- Disorders: chronic fatigue syndrome, fibromyalgia

Psychological Effects of Stress

Examples: free-floating anxiety, nervousness, apathy, emotional tension, urge to cry, urge to run and hide, depression, excessive worrying, excessive anger, nightmares, irritability, indecisiveness.

Behavioral Effects of Stress

Examples: increased use of medicines (aspirin, sleeping pills), increased smoking, increased drinking, accident proneness, impulsive behavior, laziness, blaming others, yelling at others, inability to concentrate.

How does stress and brain chemistry interact?

What does brain chemistry have to do with stress?

On a typical day, trillions of messages are sent and received in the brain. Chemical messengers carry the messages between brain cells. In other words, the chemical messengers allow brain cells to talk to one another.

There are "happy" messengers in the brain (Serotonin, Noradrenaline, Dopamine). As long as you can produce enough "happy" messengers to keep up with the stress in your life, you will find stress to be fun, exciting, enjoyable, and challenging. In fact, without stress you would be bored.

But when the amount of stress in your life is so great that you begin to run out of happy messengers, then a state of chemical imbalance can occur. This can lead to poor sleep, aches and pains, sadness and crying, fatigue, lack of enjoyment of life, and panic attacks.

We have all experienced brief episodes of happy messenger malfunction. At least 10% of the population feels like this all the time.

The Three Happy Messengers

Serotonin: Sets your Internal Clock

Serotonin is responsible for regulating your internal body clock and your sleep. If stress causes a disruption in serotonin, your internal body clock will stop working properly. You will not be able to obtain restful sleep no matter how hard you try. Serotonin is usually the first "happy" messenger to fail under stress. Thus, one of the first signs of over-stress may be the inability to get restful sleep.

Many physical disorders have a stress component to them. In fact, recent research suggests that as many as 70% of physical disorders have a stress component to them. Although coronary artery disease is, by far, the most prevalent of the stress-related disorders, there are other prominent diseases believed to be related to stress, to some degree.

Notes:

Sound sleep is important because it is a time when your cortisol cycle can rest and regenerate. Cortisol is one of the body's chief stress fighting hormones. When cortisol secretion is high, your body is prepared for stress conditions. Ordinarily, your cortisol drops substantially in the evening, as you relax and prepare for sleep.

Sound sleep involves a pattern of going into deeper and deeper sleep followed by going into lighter and lighter sleep. REM (rapid eye movement) sleep occurs during the lightest phase of sleep. About every 90 minutes you go through this cycle. To feel rested, you must be cycling through the various stages of sleep.

Noradrenaline: Gives You Energy

Adrenaline is released into your bloodstream by your adrenal glands. What happens when you are frightened? Your heart beats faster, blood flow is shunted away from your skin and intestines and towards your muscles, perspiration appears, you are ready for "fight or flight." A cousin of adrenaline is noradrenaline.

Noradrenaline has many functions in the body's nervous system. The one that most concerns us here, however, is the role of noradrenaline in setting your energy levels. Proper functioning of noradrenaline is essential for you to feel energized. Without enough noradrenaline you feel exhausted, tired, droopy, and without energy.

Dopamine: Pleasure and Pain

Endorphines are natural morphine-like molecules produced in the brain. This is our body's naturally occurring mechanism for regulating pain. A certain baseline secretion of endorphins occurs at all times in our body. There seems to be individual differences in endorphin levels, which would explain why people react with differing amounts of pain when suffering from the same painful stimulus.

Dopamine seems to be the neighbor of endorphins. Dopamine is concentrated in areas of the brain immediately adjacent to where the major endorphin releasing mechanism lies. When dopamine function declines, endorphin function also declines. When too much stress causes failure of dopamine function, it also causes loss of endorphins. Dopamine also runs the pleasure centers of your brain. Failure of dopamine renders the pleasure centers inoperative.

What happens with happy messenger malfunction?

When happy messengers malfunction, you can experience a number of symptoms at the same time, such as lack of sleep, and aches and pains. You feel that life is not enjoyable anymore. You feel overwhelmed by life. You may cry easily and feel depressed. You may also feel anxious. All these changes in your body can get your mind going as well. You may start to think, "What is happening to me?" It is not uncommon for you to experience periods of panic. It is during these "panic attacks" that you feel as if you cannot catch your breath.

Why do people react differently to stress?

What personality sub-types tend to lead to stress?

People who are prone to stress tend to share certain personality traits. These traits may be present to varying degrees in any one person.

Perfectionism

You have a tendency to have high expectations about yourself, others and life that are unrealistically high. When anything falls short, you become disappointed and/or critical. You tend to be over concerned with small flaws and mistakes in yourself or your accomplishments. By putting the focus on what is wrong, you tend to discount what is right. Perfectionism is a common cause of low self-esteem. It is critical of every effort and convinces you that nothing is ever good enough. It can also cause you to drive yourself to the point of chronic stress, exhaustion, and burnout.

Excessive Need for Approval

We all need approval. Yet, for some people this need is excessive. Being overly concerned with approval often arises from an inner sense of being flawed or unworthy. This leads to the mistaken belief that you are unacceptable just the way you are. In trying to be pleasing to others, they may accommodate themselves to others' expectations, ignoring their own feelings and needs. Often, they have a difficult time saying "no." The long-term consequence of always accommodating and pleasing others at the expense of yourself is that you end up with a lot of pent up frustration and resentment. This leads to stress and anxiety.

Excessive Need for Control

The excessive need for control makes you want to have everything in life be predictable. It is a kind of vigilance that requires all the bases to be covered. You may go through life, always ready to put up your defenses in response to any situation that seems to challenge your sense of security. This is extremely exhausting and leads to stress.

Each of us is a product of "nature and nurture." In other words, we are all born with a certain "personality" and we are all raised in a particular environment. So, when you put these two things together, that which you are born with and that which you are raised with, you end up with a developing human being.

Notes:

Tendency to Ignore Physical and Psychological Signs of Stress

If you are anxious or worried, you may be ignoring the rest of your body and mind. To the extent that you are out of touch with your body, you may ignore an entire range of symptoms that may be telling you to watch out. This can result in you simply ignoring that you are under high levels of stress. A possible outcome of chronic, cumulative stress is that the neuroendocrine system in your brain begins to malfunction.

When does stress become an anxiety problem?

What is anxiety?

Stress is something that you can identify. Anxiety, on the other hand, is often unidentifiable. It is more often internal rather than external. It seems to be a response to a vague, distant, or even unrecognized fear. Just like stress, anxiety can affect you on a physiological, psychological and behavior level. Anxiety can range from a mere twinge of uneasiness to a full-blown panic attack.

What is an anxiety disorder?

Anxiety is an inevitable part of everyday life. Anxiety disorders are distinguished from everyday, normal anxiety in that the anxiety is more intense, lasts longer, and leads to phobias that interfere with your life. There are a number of anxiety disorders including: Panic Disorder, Agoraphobia, Social Phobia, Specific Phobia, Generalized Anxiety Disorder, Obsessive-Compulsive Disorder, Post-Traumatic Stress Disorder and Acute Stress Disorder. Of all the anxiety disorders, Agoraphobia (fear of not being safe) is the most prevalent.

What is a panic attack?

The simultaneous occurrence of four or more of these symptoms:

- Shortness of breath
- Heart palpitations
- Trembling/shaking
- Sweating
- Choking
- Nausea
- Numbness
- Dizziness
- Feeling of detachment
- Hot flashes/chills
- Fear of dying
- Fear of going crazy

What can be done to reduce stress?

What can you do to reduce stress in life?

Stressor
Type + Intensity + Frequency + Duration
+
Environment
Context/Situation
+
Person
Brain Chemistry + Personality + Coping (Attitude/Perception)

Is there anything I can do to change the stressor, environment or my brain chemistry?

Unhealthy Long-Term Strategies

There are a number of things that we may do to try and make ourselves feel better. In fact, there are a lot of substances that can temporarily make you feel better when you are stressed. All of these "pick-me-ups" work by chemically boosting one or more of your "happy" messenger levels. Pick-me-ups are capable of directly stimulating the pleasure center of your brain. If a person already has a steady supply of "happy" messengers, the additional stimulation is nice but not compelling. But, if a person is overstressed and has deficiencies in "happy" messengers, than the effect of the pick-me-up can be significant.

Sugar

Simple sugars are tiny molecules that are easily absorbed by the body. A sudden rise in blood sugar can lead to an immediate boost in "happy" messenger levels. Simple sugars are, by far, the most popular and most widely used pick-me-up.

Caffeine

Caffeine also causes a boost in your brain's "happy" messengers. Caffeine is a brain-activating drug. It is the second most widely used pick-me-up. Caffeine is found not only in coffee, but also in chocolate, sodas and many teas.

Notes:

One of the most powerful and effective methods for reducing stress and anxiety is aerobic exercise.

Tobacco, Marijuana, Cocaine, Amphetamine, Heroin

These are all widely used and have extremely potent effects on the functioning of "happy" messenger levels.

Alcohol

Alcohol affects a number of functions in the brain. It can help people sleep, help people feel energized and aggressive, diminish pain sensations, and increase pleasure sensations. That is why some people have a drink to go to bed, a drink to get going in the morning, a drink to feel no pain, and/or a drink to make social gatherings more fun. Alcohol is the third most widely used pick-me-up.

Your Own Adrenaline

Adrenaline release instantly boosts noradrenaline function. People will use high-risk or high-excitement activities (workaholic, shopping sprees, gambling sprees, thrill seeking) as a pick-me-up. Instead of reducing stress levels, these people use their own adrenaline to boost their levels of "happy" brain messengers.

Benzodiazepines and Barbiturates

Medicines that temporarily force the body to relax or to sleep are put-me-downs. Benzodiazepines include Valium, Tranxene, Serax, Xanax, Centrax, Ativan, Paxipam, and Librium. Barbiturates include Phenobarbital, Seconal, and Butalbitol. These do not work via the "happy" brain messengers but rather through their own receptor sites. Problems include adaptation and severe withdrawal if used over any length of time.

Healthier Long-term Strategies

Physical Exercise

One of the most powerful and effective methods for reducing stress and anxiety is aerobic exercise. Regular exercise reduces muscle tension, produces more rapid metabolism of excess adrenaline, enhances oxygenation of the blood and brain, and stimulates production of endorphins.

Relaxation Exercises

Deep relaxation, which is different from relaxing while watching TV, can have a significant impact on your physiological reaction to stress. It can lead to decreased heart rate, respiration, blood pressure, muscle tension, metabolic rate, and alpha wave activity in the brain, which all can lead to reduction of stress and anxiety.

SSRIs (Serotonin Specific Reuptake Inhibitors)

These medicines can be very effective re-balancers. The nice thing about these medicines are that they have relatively few side effects, do not alter your natural REM sleep architecture, and are not habit forming.

Is there anything I can do to change my personality?

Perfectionism

- Let go of the idea that your achievements and accomplishments determine your worth.
- Recognize and overcome perfectionist thinking styles.
- Stop magnifying the importance of small errors.
- Focus on positives.
- Work on goals that are realistic.
- Cultivate more pleasure and recreation in your life.
- Develop a process orientation.

Excessive Need for Approval

- Develop a realistic view of other people's approval.
- Deal with criticism in an objective fashion.
- Recognize and let go of the tendency to put other people's needs before your own.

Excessive Need for Control

- Be accepting of the outcome.
- Cultivate patience.
- Trust that most problems will eventually work out.
- Develop a spiritual approach to life.

Tendency to Ignore Physical and Psychological Signs of Stress

- Recognize and identify your own symptoms of stress.
- Decide not to ignore them.
- Work on stress management techniques.

Is there anything I can do to change my coping?

Negative Self-talk

Self-talk is so automatic and subtle that you often do not notice it or the effect it has on your mood. You react without noticing what you told yourself right before you reacted. Thus, it is important to step back and see the connection between what you say to yourself and how you react to situations. The most effective way to deal with negative self-talk is to counter it with more functional self-talk.

Notes:

Questions?

Your questions are important. Call your doctor or health care provider if you have questions or concerns. UWMC Clinic staff are also available to help at any time.

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Countering involves writing down and rehearsing more accurate and functional thoughts. It's a form of mental programming. Sometimes this comes easily, and other times it takes some practice.

Questions to Ask Yourself to Expose Negative Self-talk

- What is the evidence for this?
- Is this always true?
- Has this been true in the past?
- What are the odds of this really happening or being true?
- What is the very worst thing that could happen? What is so bad about that? What would I do if the worst happened?
- Am I looking at the whole picture?
- Am I being fully objective?

Distorted Thinking

There are an infinite number of distorted errors in thinking that we can make. Some common examples are:

Overgeneralizing

To overgeneralize is to assume (falsely) that because you have had one bad experience, in a particular situation, your bad experience will always repeat itself in similar situations.

Filtering

Filtering involves selecting out and focusing on one negative aspect of a situation so that you ignore any positive aspects.

Emotional Reasoning

Emotional reasoning refers to the tendency to judge or evaluate something illogically, totally on the basis of your feelings. Of course, there may be instances where relying on feelings alone can be useful and appropriate. In many other cases, though, going only on feelings and suspending your reasoning can lead to wrong conclusions and decisions.

"Should" Statements

"Should" statements cause pressure on you to meet some self-imposed expectation that is unreasonably high.

Catastrophizing

Thinking that if a negative outcome did occur, it would be catastrophic, overwhelming and unmanageable. This is often accompanied by underestimating your ability to cope.

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