

# Management of Stress

Radu V. Saveanu, MD  
Chair, OSU Department of Psychiatry

## Further Definitions of Stress

Stress can be brought on by:

1. An internal state (conflict)
2. An external event (marriage, divorce, accident, natural disaster)
3. An interaction between an individual and his/her environment

Mason, JW. Journal of Human Stress 1:6-27 (1975)

## How to we define stress?

- Stress ensues when events or environmental demands exceed an individual's ability to cope
- Stressor: a stimulus that activates the hypothalamic – pituitary – adrenal (HPA) axis and/or the sympathetic nervous system (SNS) to help an organism to adapt physiologically to deal with a threat
- Stressors can be categorized by
  - ✓ Duration
  - ✓ Course (discrete vs. continuous)
  - ✓ Intensity

Black, PH. The inflammatory response is an integral part of the stress response: implications for atherosclerosis, insulin resistance, Type II diabetes and Metabolic Syndrome X. Brain Behav. Immun. 17, 350-364 (2003)  
Segerstrom, SC, Miller, GE. Psychological stress and the human immune system: a meta-analytic study of 30 years of inquiry. Psychol. Bull. 130, 1-37 (2004)

## How do we assess stress?

- Measure negative thoughts
- Measure negative emotions that assess symptoms of general distress, anxiety or depression
- Assess the number and type of recent significant stressful life changes/events
- Use a scale that includes questions such as:
  - ✓ How frequently in the past week did you feel you could not control important things in your life
  - ✓ How often did you feel that things were piling up so high that you could not overcome them

Cohen, S et al. Psychological stress and susceptibility to the common cold. N. Engl. J. Med. 325, 606-612 (1991)

## How Much Stress is Too Much?

1. No definitive answer
2. Holmes and Rahe constructed a Social Readjustment Rating Scale in an attempt to quantify stressful life events:
  - a) Promotion = 31 LCU's (Life Change Units)
  - b) Marital separation: 56 LCU's
  - c) Death of a spouse = 100 LCU's
  - d) An accumulation of 200 or more LCU's in a single year increases incidence of psychosomatic disorders

Holmes, T.H., Rahe, R.H. Journal of Psychosomatic Medicine 11:213-218 (1967)

## Depression

- Depressive symptoms increase risk of a first heart attack 1.5 to 2 fold
- Mortality among patients who suffer an MI is 4 times higher among those with depressive symptoms
- Chronic depressed mood is linked to cancer risk
- Depressed mood is a risk factor for all cause mortality in medical inpatients
- Depressed mood can magnify pain – and pain can increase disease severity and mortality

Glassman AH, Shapiro PA. Depression and the Course of Coronary Artery Disease. *Am. J. Psychiatry* 155:4-11 (1998)  
Frasure-Smith H et al. Depression following myocardial infarction: impact on 6-month survival. *JAMA* 270: 1819-25 (1993)  
Herrmann C. Et al. Diagnostic groups and depressed mood as predictors of 22-month mortality in medical inpatients. *Psychosom. Med.* 60:570-77 (1998)  
Staats, PS. Pain, depression and survival. *Am Fam. Physician* 60:42-43 (1999)

## Stress and Negative Emotions

1. Stress frequently leads to feelings of:
  - Depression
  - Anxiety
  - Hostility / Anger
2. Negative emotions are associated with increased morbidity and mortality
3. Different emotions may make unique contributions to some disease processes
4. What is the impact of positive emotions on morbidity and mortality?

Ryff, CD, Singer, BS. The Contours of Positive Human Health. *Psychol. Inq.* 9:1-28 (1998)  
Kiecolt-Glaser, JK, et al. Emotions, Morbidity and Mortality: New Perspectives from Psychoneuroimmunology. *Annu. Rev. Psychol.* 53: 83-107 (2002)

## Anxiety

- Individuals with significant anxiety have double the risk of fatal CHD and nonfatal myocardial infarction in both men and women
- Anxiety has negative consequences for recovery from surgery

Kawachi I. et al. Symptoms of anxiety and risk of coronary heart disease. The Normative Aging Study. *Circulation* 90:2225-29 (1994)  
Kiecolt-Glaser JK, Et al. Psychological influences on surgical recovery: perspectives from psychoneuroimmunology. *Am. Psychol.* 53:1209-18 (1998)

## Hostility / Anger

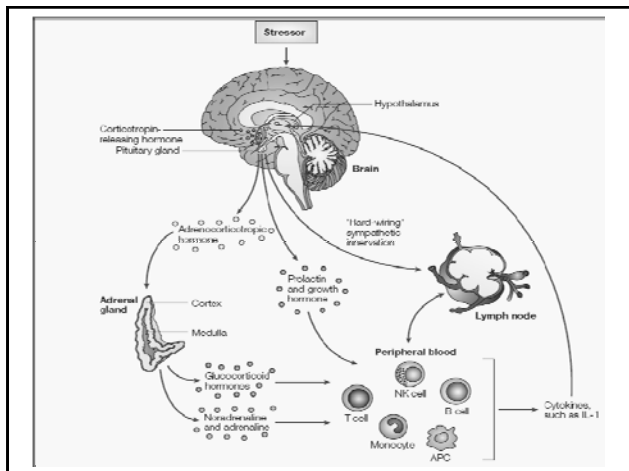
- 9-year population-based study found that men high in hostility had more than twice the risk of all-cause and cardiovascular mortality
- Meta – analysis concluded that hostility is a robust factor for CHD, as well as for all-cause mortality

Everson SA, et al. Hostility and increased risk of mortality and acute myocardial infarction: The Mediating Role of Behavioral risk factors. *Am. J. Epidemiol.* 146: 142-52 (1997)  
 Miller PJ, et al. A meta-analytic review of research on hostility and physical health. *Psychol. Bull.* 119: 322-48 (1996)

## Psychological Stress

- Slows wound healing
- Alters the immune response to antiviral and antibacterial vaccines (influenza, Hepatitis B, rubella, pneumococcal vaccine)
- Increases risk of reactivation of several viruses (herpes, EBV, CMV)
- May be a factor in cancer risk and progression

Kiecolt-Glaser, JK, et al. *The Lancet*, 346:1-3 (1995)  
 Kiecolt-Glaser, JK, et al. *Proc. Natl. Acad. Sci. USA*, 93:3043-3047



## Stress and the Metabolic Syndrome

- **Metabolic Syndrome:** Combination of impaired glucose and lipid metabolism, obesity, and hypertension
- It increases risk for morbidity and mortality from CVD, diabetes, and all-cause mortality
- Study showed that depressive symptoms and stressful life events predicted MS among middle-aged women
- Marital dissatisfaction, divorce, and widowhood predicted increased risk of MS over an average 11.5 years

Raikkonen K, et al. *Diabetes Care*, 30:872-877 (2007)

## Stress and HIV Infection

In HIV-infected men, stress increases the rate of disease progression

- a) A longitudinal study of HIV-positive men asymptomatic at entry to the study:
  - \* At 5.5 years after entry into the study, men who had higher levels of stress and/or lower levels of support were 2-3 times more likely to develop AIDS
- b) A study showed that gay men who concealed their homosexual identity had an accelerated course of HIV infection compared to men who did not

Leserman, J. et al. Progression to AIDS: The effects of stress, depressive symptoms, and social support. Psychosom. Med. 61, 397-406 (1999)  
Cole, SW, et al. Accelerated course of human immunodeficiency virus infection in gay men who conceal their homosexual identity. Psychosom. Med. 58, 1-13 (1996)

## Vulnerability and Resilience Factors

### A. Sociodemographic variables

1. Age
  - \* Early and late life vulnerabilities
2. Gender
  - \* Women are at higher risk for depression and anxiety
3. Socioeconomic status
  - \* Typically measured by education, income and occupation
  - \* Inverse relationship with depression and hostility
  - \* Inverse relationship with most major causes of morbidity and mortality across populations
4. Race/Ethnicity

Adler N, et al. Socioeconomic status and health. Am Psychol. 49:15-24 (1994)  
Taylor SE, et al. Health psychology: what is an unhealthy environment and how does it get under the skin? Annu. Rev. Psychol. 48: 411-17 (1997)

## Stress and Psychiatric Illness

Stress increases risk of:

- Major depression
- PTSD
- Alcohol/substance abuse/dependence
- Anxiety disorders
- Psychiatric decompensation in vulnerable individuals

## Vulnerability and Resilience Factors

### B. Personality traits and coping styles

- Reflect differences in appraisal and response to stressful situations
- In longitudinal studies, personality and coping characteristics predict physical illness and mortality
- Type D (distressed) Personality predicts cardiac morbidity and mortality over a 10-year period
- Optimism predicts better health outcomes among cardiac patients
- Positive emotions might "undo" the aftereffects of negative emotions but mechanism is not well understood

### C. Genetics

Denollet J, et al. Personality as independent predictor of long-term mortality in patients with coronary heart disease. Lancet 347: 417-21 (1996)  
Frederickson BL. What good are positive emotions? Rev. Gen. Psychol. 2: 271-99 (1998)

## Vulnerability and Resilience Factors

### D. Social relationships

- **Social isolation constitutes a major risk factor for morbidity and mortality**
- **Strong link between personal relationships and immune function**
  1. Supportive personal relationships associated with better immune function
  2. Close personal relationships that are chronically hostile or stressful can trigger depression and other negative emotions as well as persistent immune dysregulation

Kiecolt-Glaser JK, et al. Emotions, Morbidity, and Mortality: New Perspectives from Psychoneuroimmunology. Annu. Rev. Psychol. 53: 83-107 (2002)

# Management of Stress

Kenneth R. Yeager, PhD  
Associate Professor, Clinical  
OSU Department of Psychiatry

## Can Stress be Beneficial?

- **Studies in mice exposed to brief stressors (2 hours) showed better skin wound healing than non-stressed control animals**
- **In humans, short term stressors, such as public speaking, briefly increase natural-killer-cell activity and increase number of some leukocytes**
- **Absence of stress can lead to boredom and lack of meaning in life.**

Segerstrom, SC, Miller, GE. Psychological stress and the human immune system: a meta-analytic study of 30 years of inquiry. Psychol. Bull. 130, 1-37 (2004)  
Dhabhar, FS. Stress, leukocyte trafficking and the augmentation of skin immune function. Ann. NY Acad. Sci. 992, 1-13 (2003)

## So What is Stress?

- **We generally use the word "stress" when we are overloaded and wonder whether we really can cope with the pressures placed upon us.**
- **Some stresses are positive. They get you going and - without any stress at all many think our lives would be far less interesting and productive.**

## What is the Stress Response?

- It is important to note: when the stresses undermine both our mental and physical health they are bad.
- Most of us have varying interpretations of what stress is and its impact.
- Some focus on the immediate issue i.e. deadlines at work, or getting a promotion. Others think more about the event and circumstances. Still others focus on collateral issues such as the boss, or why things are the way they are.
- What really matters are how situations and the resulting thought process, as this controls how each person responds to the stress event.

## Common Signs, Symptoms and Psychological Responses to Crisis (Emotional and Behavioral)

### Emotional

- Mood swings
- Agitation/irritability
- Restlessness
- Impatience
- Feeling “on edge”
- Excessive tension
- Feeling overwhelmed
- Feeling isolated
- Feeling misunderstood
- Dystopia

### Behavioral

- Teeth grinding (bruxism) or Jaw clenching
- Hypersomnia or insomnia
- Over or under eating
- Tendency toward isolation
- Procrastination
- Increased alcohol, cigarettes, or drugs consumption to relax
- Obsessive responses (e.g. over attention to small detail)
- Overreacting to problems
- Displacement of anger and feelings of inadequacy
- Lashing out at others

## The Stress Response

- We all respond differently to a given situation for three main reasons
  - ✓ We do not all interpret each situation in the same way.
  - ✓ As a result, everyone calls on different resources to manage each situation.
  - ✓ Not all have the same resources and skill sets.

## First three steps to improve how we cope with stress

- ✓ *Understanding how you respond to stress:* recognizing our emotions and their effects.
- ✓ *Enhanced self - knowledge:* knowing our strengths and limitations.
- ✓ *Increased levels of confidence:* building a strong sense of our self-worth and capabilities.

## Understanding how you respond to stress

- Once you know how you respond to stress building coping skills around your weaknesses will strengthen your stress response.
- Focus first on your personal response.
  - ✓ Address the thoughts in your head.
  - ✓ Practice not reacting from an emotional base.
  - ✓ Practice replacing the negative “automatic thought” with a positive, e.g. “that’s impossible” replaced by “I’m up for the challenge.”

## Understanding how to manage situations and relationships

- Finally, build social skills. Be aware of social situations that lead to stress.
- Practice dealing with each challenging situation. Think first of others viewpoints. Then respond to the situation.
- Place persons around you that are supportive and understanding.
- Make every effort to understand the situation and to manage relationships.

## Understanding the situation...You’re not in this alone.

- Next build on situational awareness: Chances are good if you are feeling stress so are others.
- Understand your audience, and how your response can heighten stress or build social relationships.
- Practice building positive relationships and partnerships to answer tough situations and/or questions.

## To Sum It Up...

- Essentially: the skill set you are seeking to build is:
  - ✓ Understanding Yourself
  - ✓ Managing Yourself
  - ✓ Understanding Others and,
  - ✓ Managing Relationships

## **An overall approach to dealing with day-to-day stress**

### **Take Care of Yourself:**

- Exercise - exercise has been proven to have a beneficial effect on a person's mental and physical state. For many people exercise is an extremely effective stress buster.
- Nutrition - eat plenty of fruit and vegetables. Make sure you have a healthy and balanced diet.
- Breathing - there are some effective breathing techniques which will slow down your system and help you relax.

## **An overall approach to dealing with day-to-day stress**

### **Skip the quick fix:**

- Alcohol and drugs - alcohol and drugs will not help you manage your stress better. Either stop consuming them completely, or cut down.
- Caffeine - if your consumption of coffee and other drinks which contain caffeine is high, cut down.
- Fast food - if you think this saves time think again. Making time for a balanced home cooked meal will, in the long run lead to clearer thoughts and greater levels of productivity

## **An overall approach to dealing with day-to-day stress**

### **Ask for help!**

- Division of labor - try to delegate your responsibilities at work, or share them. If you make yourself indispensable the likelihood of your feeling highly stressed is significantly greater.
- Assertiveness - don't say yes to everything. If you can't do something well, or if something is not your responsibility, try to seek ways of not agreeing to do them.
- Talk - talk to you family, friends, work colleagues and your boss. Express your thoughts and worries.

## **An overall approach to dealing with day-to-day stress**

### **Stick with what works:**

- Time - make sure you set aside some time each day just for yourself. Use that time to organize your life, relax, and pursue your own interests.
- Maintain a balance – “All work and no play...”
- Relaxation techniques – mediation, massage, or yoga have been known to greatly help people with stress.
- Try something new - Many therapies which help you relax, such as aromatherapy, or reflexology, may have a beneficial effect.



## **In Closing**

- **Effective stress management can help you to either:**
  - ✓ **Remove or change the source of stress,**
  - ✓ **Alter the way you view a stressful event,**
  - ✓ **Lower the impact that stress might have on your body, and**
  - ✓ **Teach you alternative ways of coping.**