**Autonomic Nervous System**

- Parasympathetic division
  - Pupil constricted
  - Salivation stimulation
  - Decreased respiration
  - Increased respiration
  - Decreased blood pressure
  - Increased blood pressure
  - Bladder constricted
  - Bladder relaxed

- Sympathetic division
  - Pupil dilated
  - Salivation inhibition
  - Decreased respiration
  - Increased respiration
  - Decreased blood pressure
  - Increased blood pressure
  - Bladder constricted
  - Bladder relaxed

**Stress and Coping**

A Question of Balance between the divisions of the autonomic nervous system

- Richter's rats and parasympathetic overshoot
- Reason for fainting
- Cannon's investigation of "Voodoo" curses
- The Fraternity hazing accident

**Short and Long-Term Stress**

The fight or flight response of the sympathetic nervous system evolved for emergencies of short duration

- Catecholamines keep the body ready for strong physical exertion but this comes with costs in need for increased energy and body repair.
- Corticosteroids (Glucocorticoids) mobilize the body in converting fats and proteins to glucose, repair damage and decrease inflammation. Without this help (removal of adrenal gland) even a small amount of stress can kill an animal.

System built for short term stresses: long term stresses creates problems

**Hans Seyle-The Effects Long Term Stress**

Seyle found that although Corticosteroids, helpful in the short-term they deplete bodies resources in the long term Leading to:

- Show bloated adrenal glands, Stomach ulcers
- Decreased lymphocytes, suppressed immune response

Seyle, one of the first to identify stress-related illnesses of modern life

- High blood pressure, angina, ulcers, arthritis, asthma, migraines, heart disease etc.
Stress Make You Sick

One of the effects of stress is to suppress the immune system, making you more vulnerable to illness.

**Evidence:**
- Dental students given small punctures in the skin during the summer in three days before major exam (Kiecolt-Gaser, 1998).
  - Those given before the exam healed about 40% more slowly.
- Volunteers were asked to expose themselves to cold virus and report levels of stress. (Cohen et al. 1991)
  - 47% of participants living stress-filled lives developed colds.
  - Only 27% who were living free of stress developed colds.

Measuring Stress

**Holmes and Rahe Stress Inventory**

- Death of Spouse: 100
- Divorce: 75
- Jail Term: 63
- Personal injury or illness: 53
- Marriage: 50
- Fired at work: 47
- Pregnancy: 40
- Change in financial state: 38
- Foreclosure on mortgage or loan: 30
- Trouble with in-laws: 29
- Change in residence: 20
- Vacation: 13
- Christmas: 12

Life Events Approach to Stress

**Holmes and Rahe Stress inventory**
- Followed in Seykle’s tradition that stress is external, in the environment, not in the individual.
- Stress caused by positive and negative events that create change in our lives.
- Problems:
  - Are positive events really as stressful as negative events?
  - Ambiguous about what makes event stressful, is it change alone?
  - People respond very differently to the same event.
  - Doesn’t take into account how life course changes the degree of stress.

The stress of daily life

Lazarus argued that daily hassles may be more debilitating than big life events.

**Daily Hassles:**
- Household-Preparing meals, shopping, cleaning house
- Health- Illness, medications, worry about medical care
- Time pressure-Having too many things to do, not enough time
- Inner concerns-Loneliness, meaning of life, social confrontations
- Environmental-Traffic, noise, crime pollution
- Financial- Mortgage, bills, sending kids to college
- Work-Job satisfaction, getting along with boss and coworkers
- Future security-Investments, stock market, retirement

Positive events

Lazarus did not see all events create stress. Some events called “uplifts” help us to cope with stress.

**Uplifts:**
- Relating well with someone you love, or with friends
- Completing tasks
- Feeling healthy
- Getting enough sleep
- Eating out
- Meeting your responsibilities
- Visiting, phoning or writing someone
- Spending time with family

Is Stress Internal or External?

**Lazarus’s Cognitive Appraisals.**
- The event is not stressful unless we see it as so.
  - Primary Appraisal, is the event a threat or a challenge?
    - Threatening
    - Non-threatening
  - Secondary Appraisal: do I have resources and alternatives to cope?
    - Social support, physical resources, psychological: Answers question, what can I do, how do I respond.

- Stress is present if one perceives an event as threatening, and believes they do not have the resources to handle it.
Stress and Heart Disease

Two cardiologists, Meyer Friedman and Ray Rosenman, tested the idea there was a relationship between heart disease and stress.

- Measured cholesterol and the tendency for blood to clot in 40 tax accountants.
- Blood was normal during the first part of the year until they got to April, then both measures rose to clinical levels.
- However, it did not affect all their tax

Are some people more prone to Stress?

True or False?

- Do you find it difficult to listen to someone who speaks slowly?
- Do you often try to do more than one thing at a time?
- Do you often feel guilty if you use extra time to relax?
- Do you tend to get involved in a great number of projects at once?
- Do you find yourself racing through yellow lights when you drive?
- Do you need to win to enjoy games and sports?
- Do you generally move, walk, and eat rapidly?
- Do you agree to take on too many responsibilities?
- Do you detest waiting in lines?
- Do you have a strong desire to better your position and impress others?

If you answered 6 or more of the previous items as true, you have a tendency toward a Type A Personality.

Heart disease And Personality

The cardiologists hypothesized that a certain manner of responding to stress was part of the problem.

Study of 3000 men between the ages of 35 and 59.

Came up with two types of men who differed in their reaction to the environment

- **Type A**
  - Highly competitive, ambitious
  - Speaks rapidly, and interrupt frequently
  - Seized by anger and hostility with uncommon frequency
  - Unable to set back and relax

- **Type B**
  - Relaxed, calm and unreactive

By the end of the study 257 men had heart attacks, 69% were Type A.

The Unhealthy Part of Type A

<table>
<thead>
<tr>
<th>Competitive</th>
<th>Need for recognition</th>
</tr>
</thead>
<tbody>
<tr>
<td>Impatient</td>
<td>Distrustful, Angry, Hostile</td>
</tr>
<tr>
<td>High energy</td>
<td>Fast mental activity</td>
</tr>
<tr>
<td>Difficulty relaxing</td>
<td>Coronary Heart Disease</td>
</tr>
</tbody>
</table>

If you are Type A are you Doomed?

ANGER—It appears as though this one characteristic of the Type A personality is more related to heart attacks

Responding to Stress

Dealing with stress: Brady’s ”Executive Monkeys”.

- Is it bad to be the boss? Does having control create stress?
Both types of coping strategies could be used on the same problem. For example, if you are in a marriage that isn’t working, you may use problem-focused strategies to address the issues and emotion-focused strategies to manage your emotional response. If you are caught in a traffic jam, you could use problem-focused strategies to find an alternative route and emotion-focused strategies to stay calm and focused.

Research findings show that people who believe they have control over their lives tend to experience less stress compared to those who feel they have no control. In Weiss’s experiment with rats, the rats with signals that their pressing a nose would stop shock had lower stress levels than those with no signal. Similarly, in Brady’s experiment, the monkeys with control had lower stress levels than those without control.

The Importance of Control

Weiss’s “Executive rats” experiment:
- The factor of “control” of the situation. Did Brady really study control? In Brady experiment the monkeys had to keep pushing the button.
- There was no signal that they controlled anything.
- In Weiss’s experiment that rats had signals that their pressing a nose plate would stop shock.

Rotter’s Locus of Control

The closer you are to 10 the more you believe you are in control of what happens to you (Internal locus).
The closer you are to 0 the more you believe that things generally happen that are beyond your ability to control (External locus).

Research findings:
- Externals have higher levels of anxiety and depression.
- Internals cope with stress better and engage in health-promoting behaviors.

Can a sense of control create problems?
- Parents who suffer the loss of the child.
- Jobs with many psychological demands but little control, air traffic controllers, military combat, firemen etc., are very stressful.
- Noise is stressful but is it different if it is your stereo?
- In Weiss’s experiment that rats had signals that their pressing a nose plate would stop shock.
- In Brady experiment the monkeys had to keep pushing the button.
- There was no signal that they controlled anything.
- In Weiss’s experiment that rats had signals that their pressing a nose plate would stop shock.

Strategies for Coping with Stress

Problem focused coping strategies—Confronts source of stress directly:
- In problem focused strategies changing the external world is key. You act to change the conditions of life that create stress, by acting to alleviate the source of the problem.
- In general, problem focused strategies work better because they are more likely to eliminate sources of continuing stress.

Emotion focused coping strategies—Confronts source of stress indirectly by changing emotional response or suppressing it:
- Emotion focused attempts to manage emotional reactions to stressful situations by transforming the emotion itself. This can be accomplished by reappraising the situation so that the emotion is transformed or denied or by psychologically distancing oneself.
- Suppressing negative emotions or denying they exist can have some positive effect but self-deception in the long run.

Factors That Are Related to Less Stress

<table>
<thead>
<tr>
<th>Look at your life</th>
<th>Optimists</th>
<th>Neutral</th>
<th>Pessimists</th>
</tr>
</thead>
<tbody>
<tr>
<td>Percent developing coronary heart disease</td>
<td>15%</td>
<td>10%</td>
<td>5%</td>
</tr>
<tr>
<td>Depression score</td>
<td>10</td>
<td>7</td>
<td>3</td>
</tr>
<tr>
<td>Life satisfaction</td>
<td>High</td>
<td>Medium</td>
<td>Low</td>
</tr>
</tbody>
</table>

For each question, choose the answer that best applies to your beliefs.

1. A. Making a lot of money is largely a matter of getting the right breaks. B. Promotions are earned through hard work and persistence.
2. A. Many times the reactions of teachers seem haphazard to me. B. In my experience I have noticed that there usually a direct connection between how hard I study and the grades I get.
3. A. The number of divorces indicates that more people are not trying to make their marriages work. B. Marriages is largely a gamble.
4. A. It is silly to think that one can really change another person’s basic attitudes. B. When I am right I can convince others.
5. A. In our society a man’s future earning power is dependent upon his ability. B. Getting promoted is largely a matter of being a little luckier than the other guy.
6. A. Sometimes I feel that I have little to do with the grades I get. B. If one knows how to deal with people, they are really quite easily led.
7. A. I have little influence over the way other people behave. B. I have little influence over the way other people behave.
8. A. Sometimes I feel that I have little to do with the grades I get. B. In my case the grades I make are the results of my efforts; luck has little or nothing to do with it.
9. A. In our society a man’s future earning power is dependent upon his ability. B. I am the master of my fate.
10. A. The number of divorces indicates that more people are not trying to make their marriages work. B. Getting along with people is a skill that must be practiced.
### Hardy Personality

Are there people who are more able to cope with stress?

Kobasa's Hardy Personality. Some people manage to deal with high stress with quite well.

- Show a COMMITMENT to self, work, family and other important values, giving them a feeling of a sense of purpose and social support.
- Believe they have a sense of CONTROL over their lives.
- Ability to see life changes as a CHALLENGE, to master not as a threat.

### Changing Your Reaction to Stress

**Developing a Hardy Personality**

- FOCUS on your reaction to stress. Ask yourself how you are feeling and why. Develop more positive attitudes and ways to change situation. Change in perspective helps.
- RECONSTRUCT stressful situations. Be objective in your assessment of how you handle stress and learn that you can handle them differently.
- COMPENSATE through self improvement. Engage in activities to balance your stress reactions.
  - Hobbies, exercise etc.
- Using HUMOR can be very helpful in that it takes stressful negative emotions and replaces them with positive ones.
- RELAXATION training and EXERCISE.