


PSYCHOLOGY  
(8th Edition)  
David Myers

PowerPoint Slides  
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Henderson State University



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Stress and Health

Chapter 14

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Stress and Health

Stress and Illness

- Stress and Stressors
- Stress and the Heart
- Stress and the Susceptibility to Disease

Promoting Health

- Coping with Stress

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## Stress and Health

### Promoting Health

- Managing Stress
- Modifying Illness-Related Behaviors
- Thinking Critically About: Alternative Medicine – New Ways to Health, or Cold Snake Oil

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## Stress

Psychological states cause physical illness. **Stress** is any circumstance (real or perceived) that threatens a person's well-being.



When we feel severe stress, our ability to cope with it is impaired.

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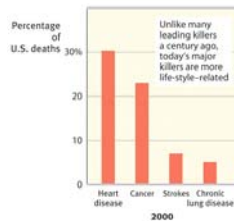
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## Stress and Causes of Death

Prolonged stress combined with unhealthy behaviors may increase our risk for one of today's four leading diseases.



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## Behavioral Medicine

Centers for Disease Control (CDC) claim that half of the deaths in the US are due to people's behaviors (smoking, alcoholism, unprotected sex, insufficient exercise, drugs, and poor nutrition).

Psychologists and physicians have thus developed an interdisciplinary field of **behavioral medicine** that integrates behavioral knowledge with medical knowledge.

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## Health Psychology

**Health psychology** is a field of psychology that contributes to behavioral medicine. The field studies stress-related aspects of disease and asks the following questions:

1. How do emotions and personality factors influence the risk of disease?
2. What attitudes and behaviors prevent illness and promote health and well-being?
3. How do our perceptions determine stress?
4. How can we reduce or control stress?

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## Stress and Illness

Stress can be adaptive. In a fearful or stress-causing situation, we can run away and save our lives. Stress can be maladaptive. If it is prolonged (chronic stress), it increases our risk of illness and health problems.

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## Stress and Stressors

Stress is a slippery concept. At times it is the stimulus (missing an appointment) and at other times it is a response (sweating while taking a test).

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## Stress and Stressors

Stress is not merely a stimulus or a response. It is a process by which we appraise and cope with environmental threats and challenges.



When short-lived or taken as a challenge, stressors may have positive effects. However, if stress is threatening or prolonged, it can be harmful.

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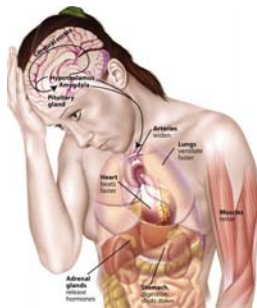
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## The Stress Response System

Canon proposed that the stress response (fight-or-flight response) was a fight-or-flight response marked by the outpouring of *epinephrine* and *norepinephrine* from the inner adrenal glands, increasing heart and respiration rates, mobilizing sugar and fat, and dulling pain.



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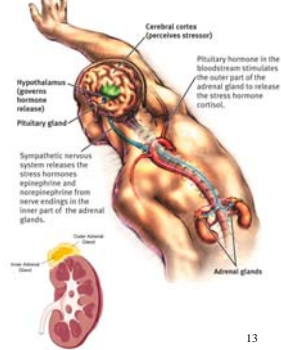
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## The Stress Response System

The hypothalamus and the pituitary gland also respond to stress (slow) by triggering the outer adrenal glands to secrete *glucocorticoids* (cortisol).



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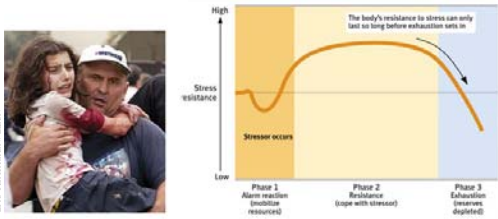
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## General Adaptation Syndrome

According to Selye, a stress response to any kind of stimulation is similar. The stressed individual goes through three phases.



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## Stressful Life Events

**Catastrophic Events:** Catastrophic events like earthquakes, combat stress, and floods lead individuals to become depressed, sleepless, and anxious.

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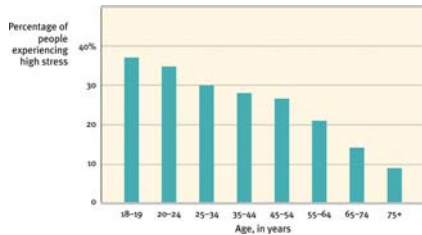
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## Significant Life Changes

The death of a loved one, a divorce, a loss of job, or a promotion may leave individuals vulnerable to disease.



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## Daily Hassles

Rush hour traffic, long lines, job stress, and becoming burnt-out are the most significant sources of stress and can damage health

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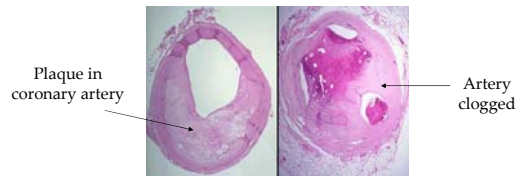
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## Stress and the Heart

Stress that leads to elevated blood pressure may result in [Coronary Heart Disease](#), a clogging of the vessels that nourish the heart muscle.



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## Personality Types

**Type A** is a term used for competitive, hard-driving, impatient, verbally aggressive, and anger-prone people. **Type B** refers to easygoing, relaxed people (Friedman and Rosenman, 1974).

Type A personalities are more likely to develop coronary heart disease.

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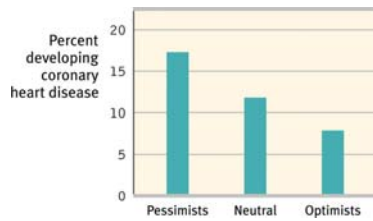
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## Pessimism and Heart Disease

Pessimistic adult men are twice as likely to develop heart disease over a 10-year period (Kubzansky et al., 2001).



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## Stress & Susceptibility to Disease

A psychophysical illness is any stress-related physical illness such as hypertension or headaches. **Hypochondriasis** is a misinterpretation of normal physical sensations as symptoms of disease.

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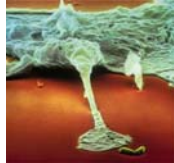
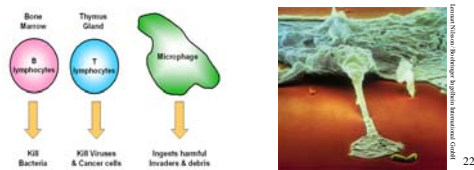
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## Stress and the Immune System

B lymphocytes fight bacterial infections, T lymphocytes attack cancer cells and viruses, and macrophages ingest foreign substances. During stress, energy is mobilized away from the immune system making it vulnerable.



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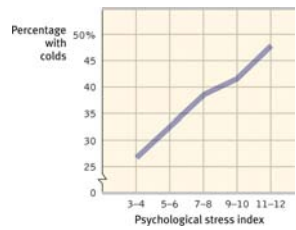
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## Stress and Colds

People with the highest life stress scores were also the most vulnerable when exposed to an experimental cold virus.



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## Stress and AIDS

Stress and negative emotions may accelerate the progression from human immunodeficiency virus (HIV) to acquired immune deficiency syndrome (AIDS).



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## Stress and Cancer

Stress does not create cancer cells. Researchers disagree on whether stress influences the progression of cancer. However, they do agree that avoiding stress and having a hopeful attitude cannot reverse advanced cancer.

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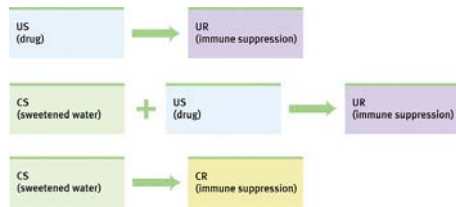
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## Stress and Immune Conditioning

If the immune system can be suppressed through conditioning, researchers believe that immune-enhancing responses can be inculcated to combat viral diseases.



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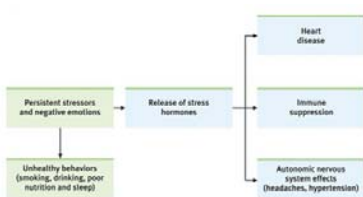
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## Health-Related Consequences

Stress can have a variety of health-related consequences.



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## Promoting Health

Promoting health is generally defined as the absence of disease. We only think of health when we are diseased. However, health psychologists say that promoting health begins by preventing illness and enhancing well-being, which is a constant endeavor.

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## Coping with Stress

Reducing stress by changing events that cause stress or by changing how we react to stress is called **problem-focused coping**.

**Emotion-focused coping** is when we cannot change a stressful situation, and we respond by attending to our own emotional needs.

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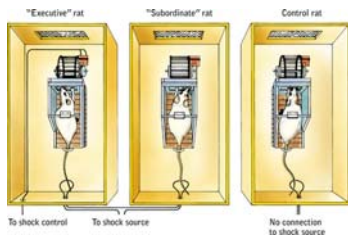
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## Perceived Control

Research with rats and humans indicates that the absence of control over stressors is a predictor of health problems.



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## Explanatory Style

People with an optimistic (instead of pessimistic) explanatory style tend to have more control over stressors, cope better with stressful events, have better moods, and have a stronger immune system.



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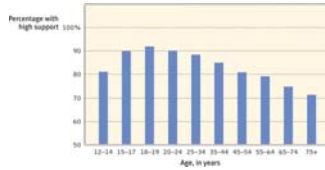
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## Social Support

Supportive family members, marriage partners, and close friends help people cope with stress. Their immune functioning calms the cardiovascular system and lowers blood pressure.



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## Managing Stress

Having a sense of control, an optimistic explanatory style, and social support can reduce stress and improve health.

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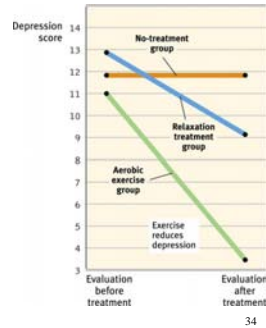
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## Aerobic Exercise

Can aerobic exercise boost spirits? Many studies suggest that aerobic exercise can elevate mood and well-being because aerobic exercise raises energy, increases self-confidence, and lowers tension, depression, and anxiety.




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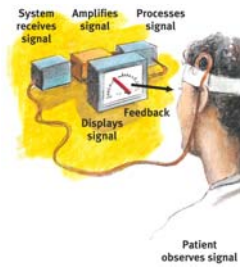
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## Biofeedback, Relaxation, and Meditation

**Biofeedback** systems use electronic devices to inform people about their physiological responses and gives them the chance to bring their response to a healthier range. **Relaxation and meditation** have similar effects in reducing tension and anxiety.



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## Life-Style

Modifying a Type-A lifestyle may reduce the recurrence of heart attacks.




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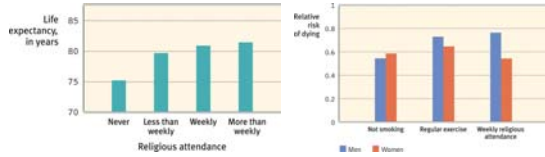
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## Spirituality & Faith Communities

Regular religious attendance has been a reliable predictor of a longer life span with a reduced risk of dying.



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## Intervening Factors

Investigators suggest there are three factors that connect religious involvement and better health.



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## Managing Stress: Summary

How can stress be managed?



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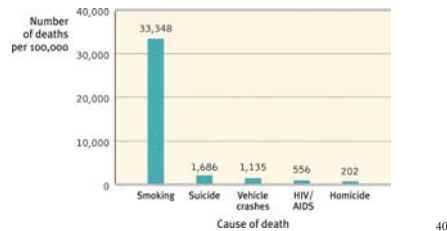
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## Modifying Illness-Related Behaviors

The elimination of smoking would increase life expectancy more than any other preventive measure.



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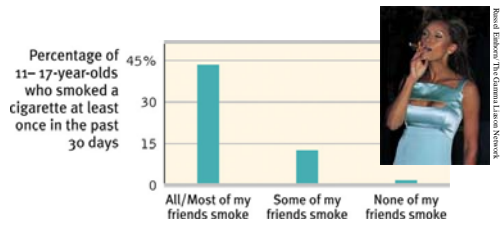
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## Why Do People Smoke?

1. People smoke because it is socially rewarding.
2. Smoking is also a result of genetic factors.



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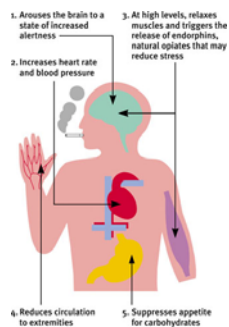
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## Why Do People Smoke?

3. Nicotine takes away unpleasant cravings (negative reinforcement) by triggering epinephrine, norepinephrine, dopamine, and endorphins.
4. Nicotine itself is rewarding (positive reinforcement).



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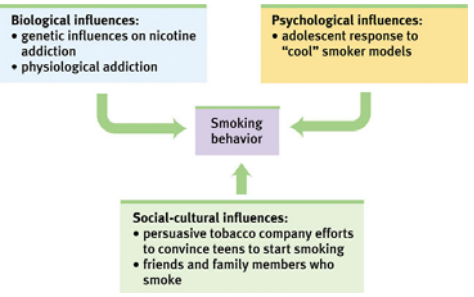
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## Biopsychosocial Factors: Smoking



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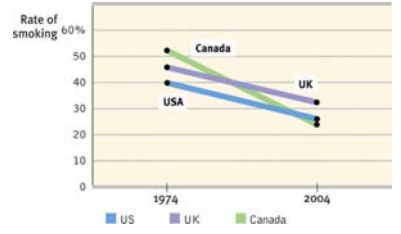
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## Helping Smokers Quit

Smoking decreased in Western countries, especially in higher socioeconomic groups and more educated groups.



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## Ways to Quit Smoking

Here are a few pointers on how to quit smoking:

1. Set a quit date.
2. Inform family and friends.
3. Throw away all cigarettes.
4. Review successful strategies.
5. Use a nicotine patch or gum.
6. Abstain from alcohol.
7. Exercise.

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## Smoking Abstinence Programs



Smoking abstinence programs for teens provide:

1. Information about the effects of smoking
2. Information about peer, parent & media influence
3. Ways to refuse cigarettes

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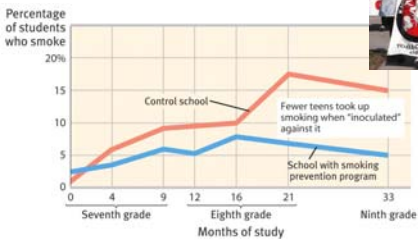
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## Do Programs Work?

Prevention programs do have an effect on smoking.



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## Obesity and Weight Control

Fat is an ideal form of stored energy and is readily available. In times of famine, an overweight body was a sign of affluence.



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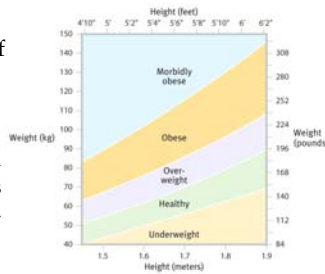
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## Body Mass Index (BMI)

Obesity in children increases their risk of diabetes, high blood pressure, heart disease, gallstones, arthritis, and certain types of cancer, thus shortening their life-expectancy.



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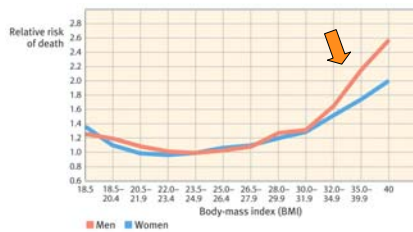
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## Obesity and Mortality

The death rate is high among very overweight men.



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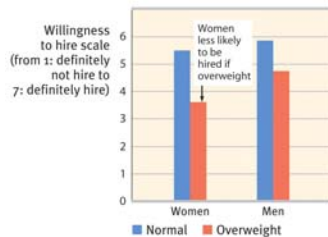
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## Social Effects of Obesity

When women applicants were made to look overweight, subjects were less willing to hire them.



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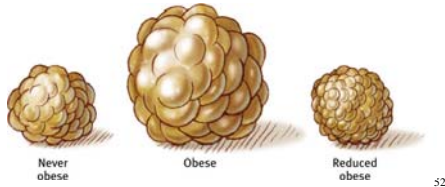
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## Physiology of Obesity

**Fat Cells:** There are 30-40 million fat cells in the body. These cells can increase in size or increase in number (75 million) in an obese individual (Sjöström, 1980).



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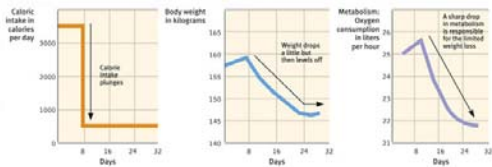
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## Set Points and Metabolism

When reduced from 3,500 calories to 450 calories, weight loss was a minimal 6% and the metabolic rate a mere 15%.



The obese defend their weight by conserving energy.

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## The Genetic Factor

Identical twin studies reveal that body weight has a genetic basis.



The obese mouse on the left has a defective gene for the hormone leptin. The mouse on the right sheds 40% of its weight when injected with leptin.

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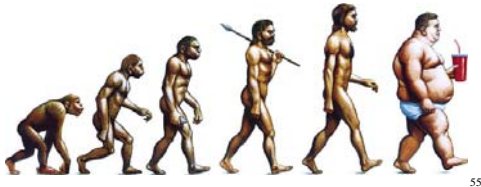
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## Activity

Lack of exercise is a major contributor to obesity. Just watching TV for two hours resulted in a 23% increase of weight when other factors were controlled (Hu et al., 2003).



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## Food Consumption

Over the past 40 years average weight gain has increased. Health professionals are pleading with US citizens to limit their food intake.

AVERAGE U.S. BODY WEIGHT (POUNDS), 1960 TO 2002				
	1960-1962	1971-1974	1988-1994	1999-2002
<b>19-year-olds</b>				
Men	-	160	161	172
Women	-	131	139	149
<b>20- to 74-year-olds</b>				
Men	166	173	182	189
Women	140	144	153	163

Source: Centers for Disease Control and Prevention report by C. L. Ogden & others (2004).

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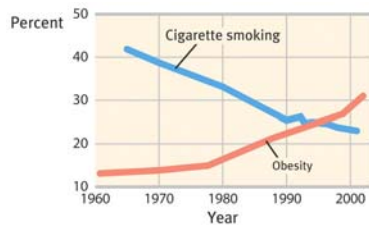
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## Trading Risks

Although cigarette smoking has declined over the years in the Americas, obesity is on the rise.



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## Losing Weight

In the US, two-thirds of the women and half of the men say that they want to lose weight. The majority of them lose money on diet programs.

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## Plan to Lose Weight

When you are motivated to lose weight, begin a weight-loss program, minimize your exposure to tempting foods, exercise, and forgive yourself for lapses.



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## Alternative Medicine

Other medicinal ways of achieving health

SUBFIELDS OF ALTERNATIVE MEDICINE	
Alternative systems of medical practice	Health care ranging from self-care following popular beliefs to treatments based on alternative traditions or practices
Bioelectromagnetic applications	The study of how living organisms interact with electromagnetic (EM) fields
Diet, nutrition, life-style changes	The knowledge of how to prevent illness, maintain health, and reverse the effects of chronic disease through dietary or nutritional intervention
Herbal medicine	Employing plant and plant products from folk medicine traditions for pharmacological use
Manual healing	Using touch and manipulation with the hands as a diagnostic and therapeutic tool
Mind-body control	Exploring the mind's capacity to affect the body, based on traditional medical systems that make use of the interconnectedness of mind and body
Pharmacological and biological treatments	Drugs and vaccines not yet accepted by mainstream medicine

Source: Offered without endorsement by the National Center for Complementary and Alternative Medicine (nccam.nih.gov)

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