

Stress, Illness & Healing

ANTH 306/Medical Anthropology

STRESS

- *Physical response to environmental demands that are threatening the well being of the individual.*
- A normal part of life.
 - Responses to stress can either be negative or positive in consequences.
- Medical anthropology is concerned with the questions:
 - How does stress function in defending body against threat & injury?
 - Can stress be induced as part of healing?



STRESS

- *Stressor* – condition/stimulus that elicits defensive response.
- Human body has 3 major avenues of physiological defense:
 - 1) Immune system.
 - 2) Nervous system.
 - 3) Hormonal system.

Here are ways in which some key body systems react.

1 NERVOUS SYSTEM

When stressed — physically or psychologically — the body suddenly shifts its energy resources to fighting off the perceived threat. In what is known as the “fight or flight” response, the sympathetic nervous system signals the adrenal glands to release adrenaline and cortisol. These hormones make the heart beat faster, raise blood pressure, change the digestive process and boost glucose levels in the bloodstream. Once the crisis passes, body systems usually return to normal.

2 MUSCULOSKELETAL SYSTEM

Under stress, muscles tense up. The contraction of muscles for extended periods can trigger tension headaches, migraines and various musculoskeletal conditions.

3 RESPIRATORY SYSTEM

Stress can make you breathe harder and cause rapid breathing — or hyperventilation — which can bring on panic attacks in some people.

4 CARDIOVASCULAR SYSTEM

Acute stress — stress that is momentary, such as being stuck in traffic — causes an increase in heart rate and stronger contractions of the heart muscle. Blood vessels that direct blood to the large muscles and to the heart dilate, increasing the amount of blood pumped to these parts of the body. Repeated episodes of acute stress can cause inflammation in the coronary arteries, thought to lead to heart attack.

5 ENDOCRINE SYSTEM

Adrenal glands

When the body is stressed, the brain sends signals from the hypothalamus, causing the adrenal cortex to produce cortisol and the adrenal medulla to produce epinephrine — sometimes called the “stress hormones.”

Liver

When cortisol and epinephrine are released, the liver produces more glucose, a blood sugar that would give you the energy for “fight or flight” in an emergency.

6 GASTROINTESTINAL SYSTEM

Esophagus

Stress may prompt you to eat much more or much less than you usually do. If you eat more or different foods or increase your use of tobacco or alcohol, you may experience heartburn, or acid reflux.

Stomach

Your stomach can react with “butterflies” or even nausea or pain. You may vomit if the stress is severe enough.

Bowels

Stress can affect digestion and which nutrients your intestines absorb. It can also affect how quickly food moves through your body. You may find that you have either diarrhea or constipation.



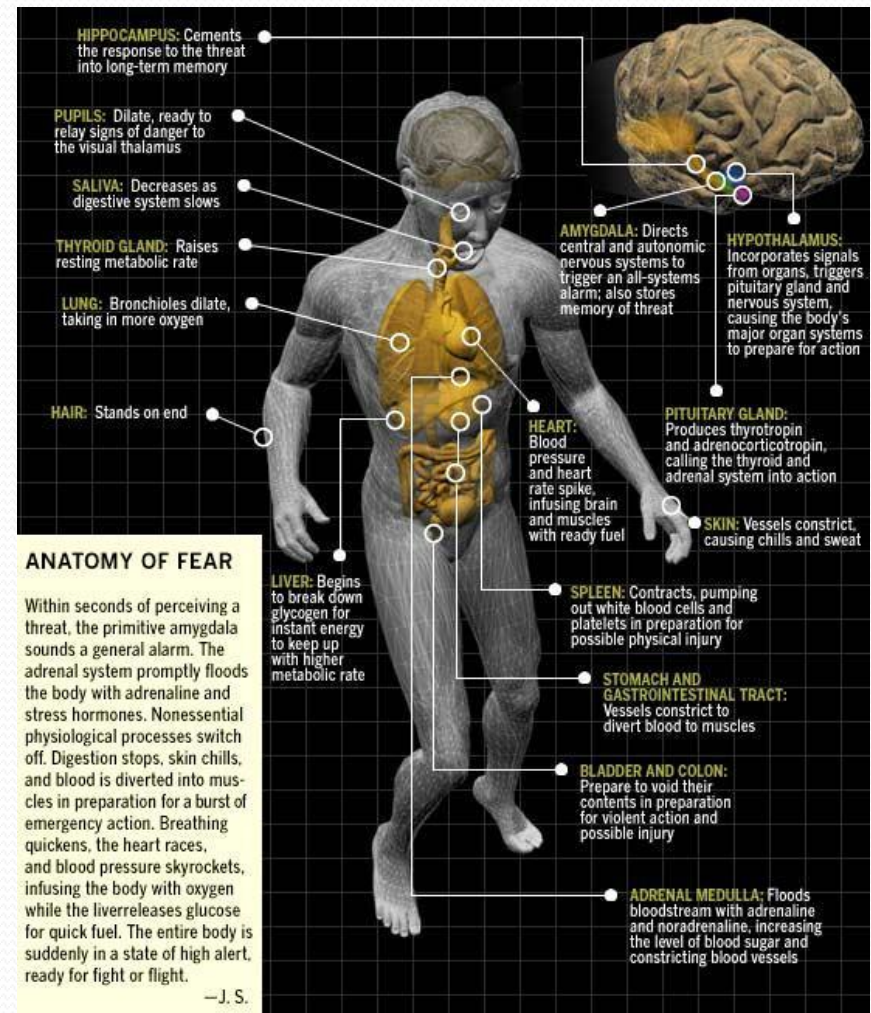
7 REPRODUCTIVE SYSTEM

In men, excess amounts of cortisol, produced under stress, can affect the normal functioning of the reproductive system. Chronic stress can impair testosterone and sperm production and cause impotence.

In women, stress can cause absent or irregular menstrual cycles or more-painful periods. It can also reduce sexual desire.

STRESS

- *Stress response* – automatic fight or flight reaction in mammals.
- Quick burst of energy & alertness of muscles & brain.
- Due to action of autonomic nervous system & hormonal secretions of adrenal & pituitary glands.
- If stressor becomes chronic net effect of cortisol on immune system is suppressive.



STRESS

If stressor becomes chronic the net effect of cortisol on the immune system is suppressive.

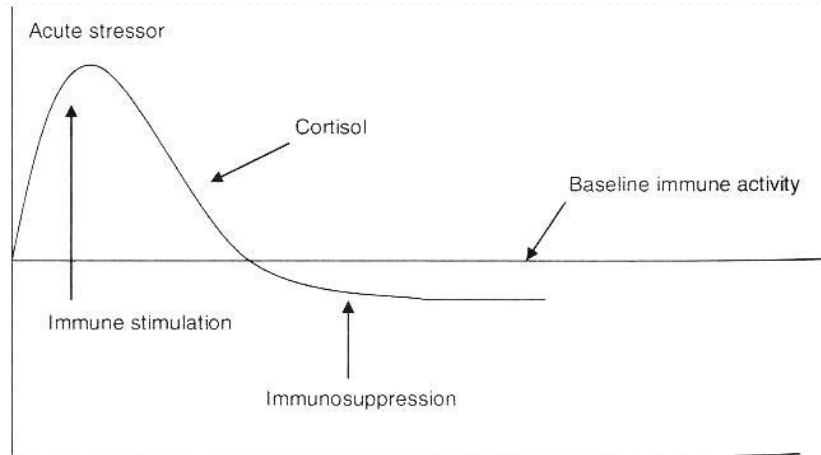


Figure 11.2
Stress, cortisol, and immune activity.
Redrawn from Sapolsky (2004).

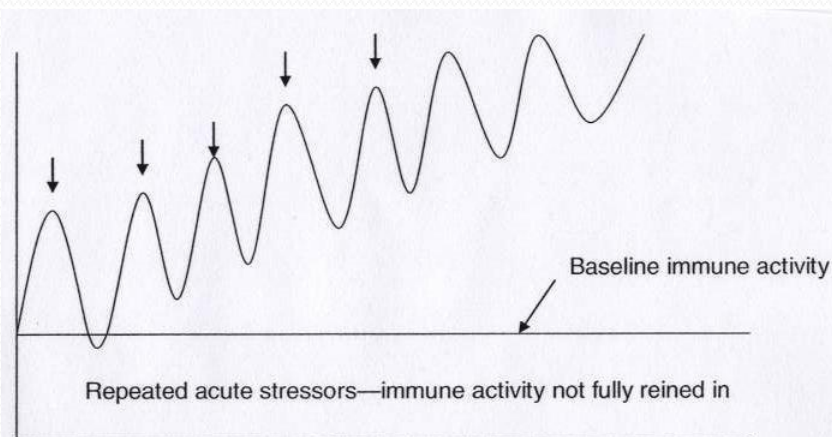


Figure 11.3
Repeated acute stressors generate the potential for autoimmunity.
Redrawn from Sapolsky (2004).

STRESS

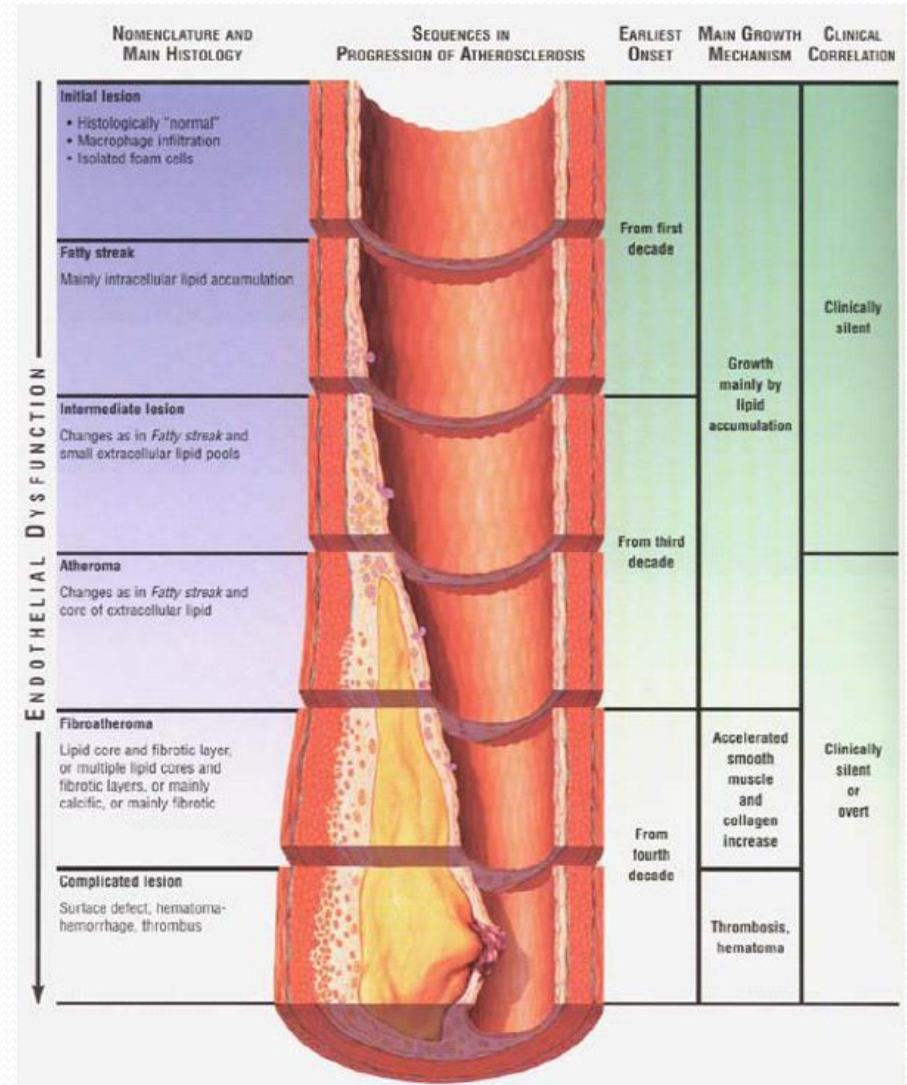
- *Symbolic danger* – technological relationship between humans & their environment has changed tremendously.
- Human body's physiological capacity to respond to *perceived danger* has changed little.
- Energy gets released in response to a stressor but if there is no physical action then biochemical constituents of energy (e.g., lipids) are not used.



The Effect Of Technology On The Brain: Multi-Tasking Leads To Stress And Fatigue

STRESS

- Excess fat gets deposited in internal lining of arteries.
- Resulting is *atherosclerosis*, a form of *arteriosclerosis* in which fatty deposits narrow or obstruct arteries, contributing to heart disease.



Stress, illness & healing

- Can stress induce healing?
- Healers in many societies use stress & employ *principle of cross resistance* – idea that a mild irritant can actually induce healing for therapeutic purposes.
- Similar to idea that disease causing organisms and/or vectors develop resistance through exposure to chemicals.

Stress, illness & healing

- In non-western societies, *altered states of consciousness* are often experienced by healers.
- Can involve dizziness, disorientation, hallucinations, muscle spasms.
- Can be based upon:
 - *drug usage, sensory overload, such as the music & hyperventilation of Ju/'hoansi trance dance*
 - *sensory deprivation, such as fasting and thirsting of Native American vision quests.*

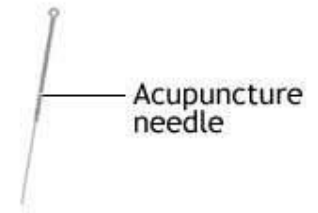


[A Curing Ceremony Preview](#)

[N/um Tchai: Ceremonial Dance of the Bushmen - PREVIEW](#)

Stress, illness & healing

- Self-induced stressors release **endorphins** – biochemical substances produced by pituitary gland.
 - Similar effect as morphine/opium.
 - Reduce pain & relieve depression.
- **Acupuncture and acupressure** use needles or pressure points to release endorphins.
- Often referred to by skeptics as *placebo effect*.
 - But this view overlooks evidence suggesting real pain relief can be achieved.



Acupuncture uses tiny needles inserted at specific points in the body to help cure or alleviate pain

Acupuncture point

Stress, illness & healing

- ***Sociocultural stressors*** can be especially problematic in situations of change –
 - *migration* process & *urban* lifestyle.
 - *social inconsistencies* – new statuses available but difficult for people to achieve new expectations.
 - *structural stressors* – poor housing, crime, racial conflict.
- Stress may be manifested in form of coronary heart disease, hypertension.
 - Example: Dressler's study of Caribbean island Saint Lucia.
- Research suggests that people who lack *social support systems* have *poorer immune system function* than those with good support networks.

Stress & psychiatric disorders

- **Schizophrenia & depression** may be universal forms of mental disorder
 - due partly to hereditary & biological factors which create lower thresholds of stress tolerance for some people.
- **Culture bound syndromes** – acute behavioral disorders usually limited to specific culture areas.
- May be culture/region specific manifestation of larger mental illnesses.

Spirit Doctors (Selection)

Table Common Culture-Bound Syndromes		
Syndrome	Region/Population Affected	Description
Amok	Malaysia	Dissociative episode characterized by a period of brooding followed by an outburst of violent, aggressive or homicidal behavior.
Arctic Hysteria	Alaska Natives	Abrupt dissociative episode accompanied by extreme excitement and frequently followed by convulsive seizures and coma.
Ataque de Nervios	Latin America	Symptoms include uncontrollable shouting, attacks of crying, trembling, heat in the chest rising to the head, and verbal or physical aggression.
Brain Fag	West Africa	Symptoms include difficulties in concentrating, remembering and thinking.
Koro	Malaysia	Sudden and intense anxiety that the penis will recede into the body and possibly cause death.
Mal de Ojo (Evil Eye)	Spain and Latin America	A common idiom to describe disease, misfortune and social disruption.
Windigo	Native Americans Central and N.E. Canada	Morbid state of anxiety with fears of becoming a cannibal.

Source: Data from Glossary of Culture-Bound Syndromes (2001). Available at: <http://webster.ucsd.edu/~hall/cbs_glos.html>. Accessed Oct. 1.

Spirit Doctors

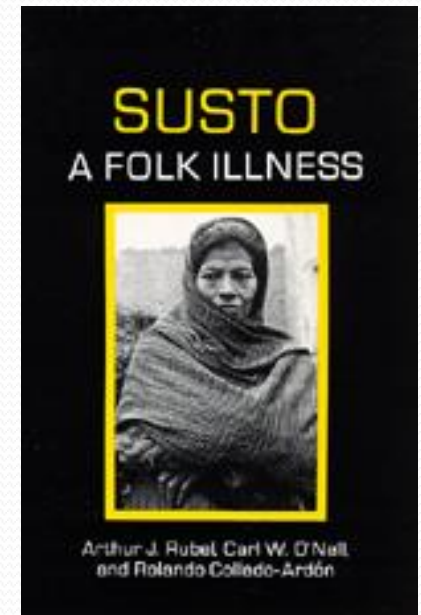
- Folk healing has been part of the Mexican culture since pre-Columbian days. This tradition still flourishes in the Mexican American communities of the lower Rio Grande Valley.
- This film follows three healers in their daily work.
- Josefa, a traditional curandera, uses a variety of herbal and spiritual techniques. She is shown giving blessings, performing ritual cleansings and communicating the wandering soul of the dead man.
- Maria heals her patients by channeling the spirit of Mexico's most famous healer – Niño Fidencio – who died 60 years ago.
- Trini is a traditional *partera*, or midwife. She plays an important role in the community where one third of all births take place outside of the hospital.



Niño Fidencio

Susto

- Similar to fear or anxiety in Western medicine.
 - Has been translated as "fright sickness" and is believed to be caused by a frightful episode.
 - Symptoms include withdrawal from social interactions, listlessness, not sleeping well, loss of appetite.
 - Both adults & children can be affected.
 - Probably more common in women than men.
 - Believed to occur because soul leaves body during frightful episode.
- Onset of symptoms can be delayed, in some cases several years.
- **Some medical doctors have compared *susto* to *post-traumatic stress disorder*.**



Pibloktoq

- “Arctic hysteria”
- Symptoms: tearing off clothes, echolalia, running away & jumping in snow or water.
- Inuit consider it a physical illness.
- *Psychoanalytic* scholars view it as insecure individuals trying to obtain group support.
- Possible *biological* explanations include: calcium deficiency; effect of light-dark cycles on circadian rhythm; excessive amounts of vitamin A in diet.



Polar bear liver contains extremely high Levels of vitamin A.

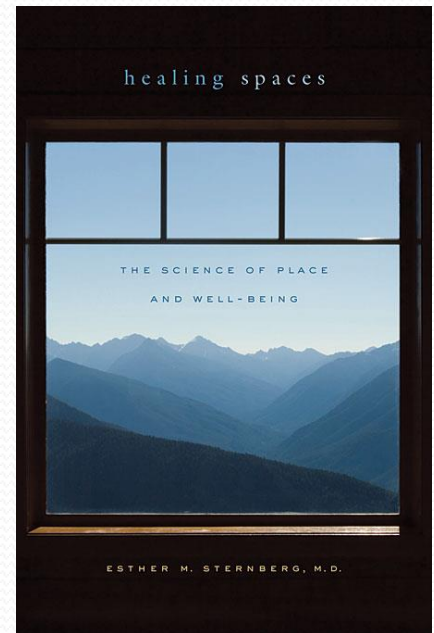
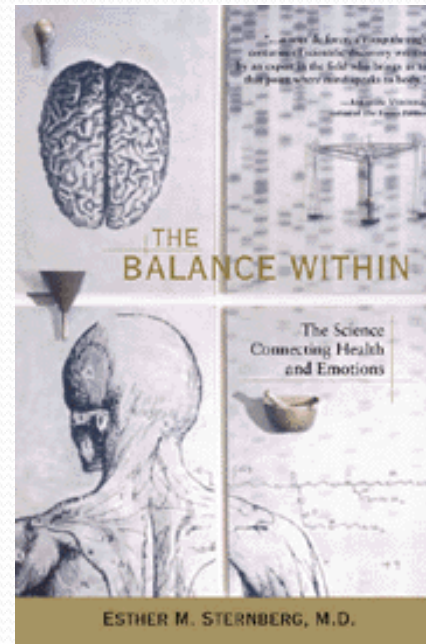
Stress, illness and healing

- In summary perhaps it's best to think about what McElroy & Townsend suggest, which is that:

“the appropriate approach in understanding stress disorders is not to oppose physiological explanations to psychological ones, but rather to search for *integrative biocultural explanations*.”

Stress and the Balance Within

- The American experience of stress has spawned a multi-billion dollar self-help industry.
- Wary of this, Esther Sternberg says that, until recently, modern science did not have the tools or inclination to take emotional stress seriously.
- She shares fascinating new scientific insight into the molecular level of the mind-body connection.



Esther Sternberg — The Science of Healing Places

- The light and smells in places like hospitals can often depress us. And, our favorite room at home keeps us sane. But why?
- Immunologist Esther Sternberg explains the scientific research revealing how physical spaces create stress and make us sick — and how good design can trigger our "brain's internal pharmacies" and help heal us.

