

# *Stress & Wellness*



Everyone experiences stress

To be alive is to be stressed

**Special job:**

Air traffic controller  
Police  
Army

**Everyone:**

Gender  
Age  
Class

While attempting to isolate a new sex hormone in rats, Selye observed that when injected with ovarian extracts, their adrenal glands secreted corticoid hormones, their thymus and lymph nodes became smaller in size, and they developed ulcers. Later, he found that disparate events like cold, heat, infection, injury, loss of blood, and pain also produced similar responses.



General Adaptation Syndrome (GAS)

## ***Stress***

A holistic transaction between the individual and a stressor resulting  
In the body's mobilization of a stress response.

A set of physiological  
adaptation of the  
body to regain homeostasis  
In the face of threat, harm, or loss

Any stimulus appraised  
by the individual as  
threatening or capable  
of causing harm or loss.

Always harmful?

**This definition recognizes  
the importance of perception  
in the appraisal of potential stressors**

**Stress means  
different things to different people**

# Stress as a Response

Claude Bernard (French Physiologist, 19<sup>th</sup> century)

Milieu interieur – Internal environment

Living organisms seek to maintain an internal constancy and balance even outside environment changes every second.

↓

Walter Cannon (Harvard physiologist, 1932)

Homeostasis

Living things seek to maintain homeostasis in order to prevent their various body system from deviating too far from their normal limits of functioning.

Defined stress as a 'fight or flight' syndrome - when an organism is stressed, it responds either by fighting with the stressor or by running away from it.

↓

Hans Seley (Canadian endocrinologist, 1936)

# *HOMEOSTASIS*

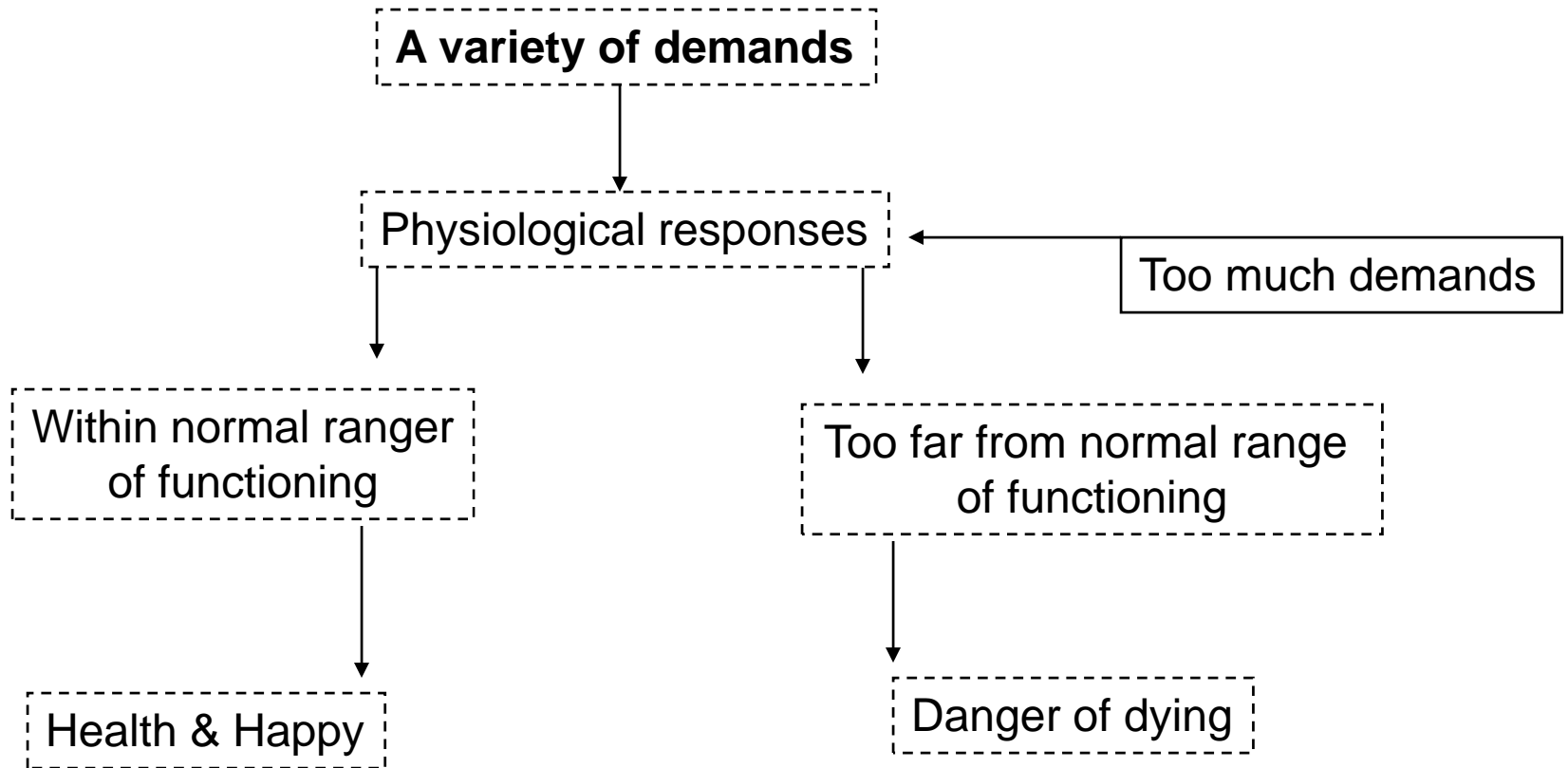
*State of body equilibrium,  
maintenance of a relative  
stable internal environment  
of the body*

*how?*

*REFLEX - automatic  
reaction to stimuli*

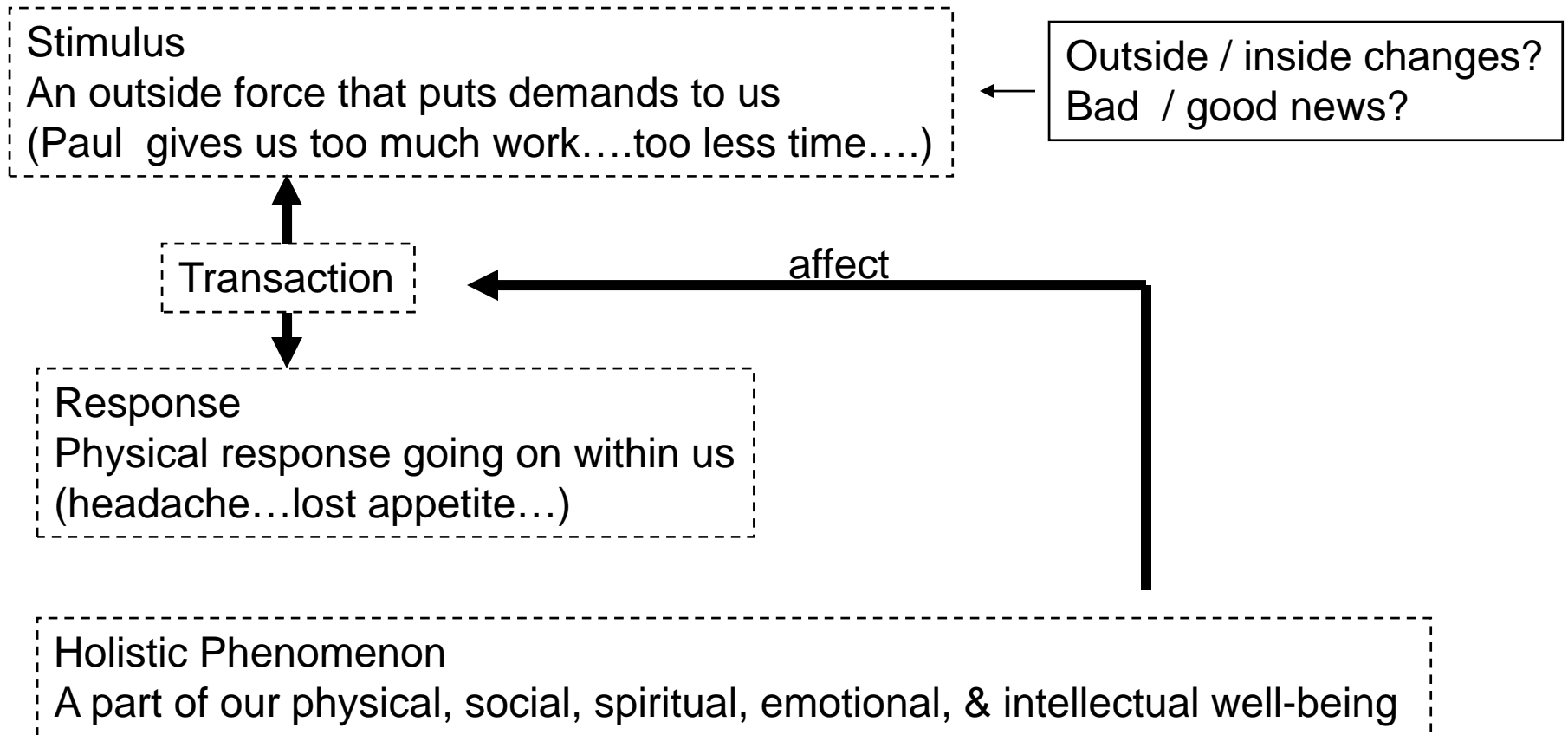
# Hans Selye's work

1. Nonspecific response to demand:



***Stress: a nonspecific response of the body to any demand***

# Stress means different things to different people





# Fight-or-Flight Reaction

- The body is prepared to respond to the stressor by either fighting it off or running away
- It is a part of our biological heritage.

## *Modern life?*

- Can you run away from a exam in school?
  - and run away from your responsibilities...?
  - Bills! Sad news! Red traffic light!

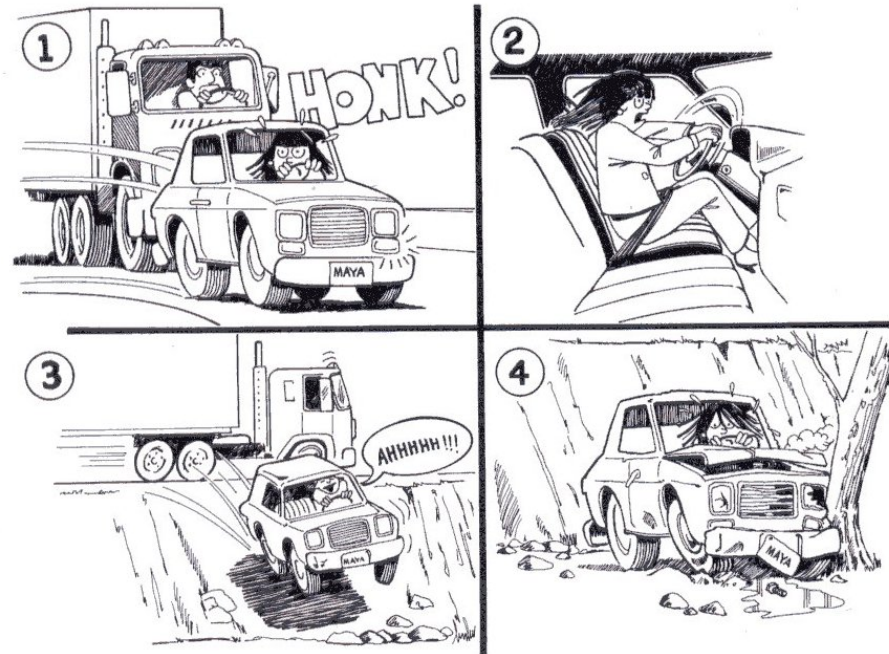


### Maya

Two million years after our prehistoric man came face to face with his saber-toothed tiger, Maya puts on her left blinker and pulls onto the entrance ramp to the Los Angeles freeway. Not very far from the spot where her long-lost ancestor defeated the saber-toothed tiger, Maya, late for work, will have saber-toothed tigers of a different kind to deal with today on the job. As she slowly enters the traffic flow, mulling over how she will explain her lateness, out of the corner of her eye she catches an eighteen-wheel tractor-trailer bearing down on her. All at once the truck blasts its horn and jams on its brakes, causing the sickening combination of the smell of burning rubber and the screeching of brakes and skidding tires.

In a flash Maya's eyes, ears, and nose send images to her brain that are instantly deciphered as a clear and imminent threat. Her brain sounds the same alarm that saved her ancestor 2 million years ago. Nerves begin to fire furiously, sending muscles, glands, and organs into action. The mobilization is enhanced by hormones stimulated by nerve transmissions and by chemicals secreted from her brain.

Maya grips the steering wheel tightly, hits the gas, downshifts, and spins the wheel, throwing her small car off the road and careening down an embankment. Wild-eyed, nostrils flared, heart pumping, lungs and muscles aching, she holds the car on line until she comes crashing to a halt at the bottom. She slumps over the wheel of her car, exhausted but alive (fig. 5-8).



**Figure 5-8**

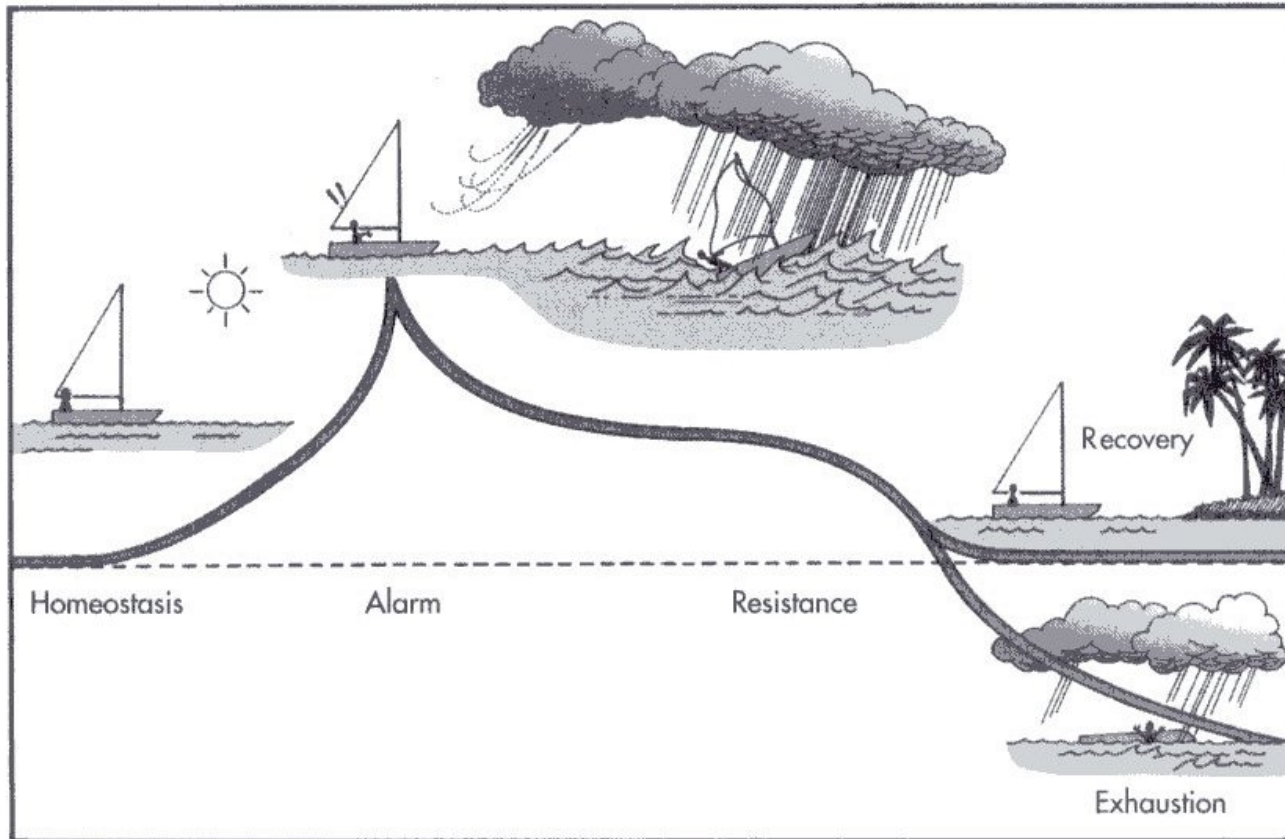
(1) Maya's brain senses danger and sounds the alarm. (2) Her body quickly responds by producing energy. (3) Fueled by the stress response, she flees the onrushing truck and seeks safety. (4) Safe at the bottom of the embankment, the threat removed, Maya's body begins to return to normal.

# General Adaptation Syndrome

- Alarm
  - activation of sympathetic nervous & endocrine systems
  - more susceptible to disease
  - may experience headache, indigestion, anxiety, sleeping and eating may be disrupted
- Resistance
  - a new level of homeostasis
  - more resistance to disease and injury than normal
  - able to cope with normal life and added stress
- Exhaustion
  - a life-threatening physiological exhaustion
  - symptoms: distorted perceptions, disorganized thinking

## 2. General Adaptation Syndrome (GAS)

	Phase 1 Alarm Reaction	Phase 2 Resistance	Phase 3 Exhaustion
Homeostasis	Disrupted	New level	Damaged
Endocrine system	Active Adrenal	Continue	exhausted
Energy	Supply a ready source of energy	Adaptation energy continue to get depleted	Depletion of all energy
others	Blood volume ↓ Stomach ulcer	Blood volume ↑	Death

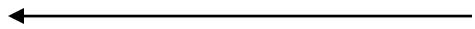


**Figure 1-2**

When we are not stressed, we are like a sailboat cutting a mild wake through our day. As stressors appear like clouds on the horizon, we get ready for turbulent seas and stormy weather. If we cope successfully, we resist the rough times and rechart a course through calmer seas. If we can't cope, like the sailboat, we crash and sink into exhaustion.

How are you?

Without thinking



Fine

Are you really fine?



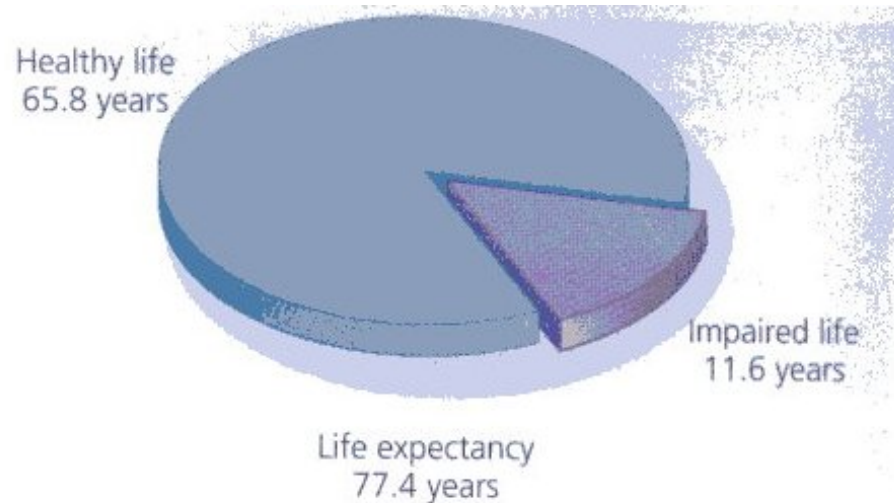
# Are You a Healthy Person?

*WE ARE HEALTHY IF WE ARE NOT SICK ? ? ?*

***HEALTH Vs. MEDICAL CARE***

***2/3 OF THE DEATH UNDER AGE 65 ARE  
POTENTIALLY PREVENTABLE***





**WV VITAL STATISTICS**

**Figure 1.5 Quantity of life versus quality of life.** Years of healthy life as a proportion of life expectancy in the U.S. population. SOURCES: National Center for Health Statistics. 2004. Deaths: preliminary data for 2002. *National Vital Statistics Reports* 52(13). National Center for Health Statistics. 2001. *Healthy People 2000 Final Review*. Hyattsville, Md.: Public Health Service.

# HEALTH

**A STATE OF COMPLETE PHYSICAL, MENTAL, AND SOCIAL WELL-BEING AND *NOT ONLY MERELY THE ABSENCE OF DISEASE OR INFIRMITY.***

**THE ENJOYMENT OF THE HIGHEST ATTAINABLE STANDARD OF HEALTH IS ONE OF THE FUNDAMENTAL RIGHTS OF EVERY HUMAN BEING WITHOUT DISTINCTION OF RACE, RELIGION, POLITICAL BELIEF, ECONOMIC OR SOCIAL CONDITION.**

***--- WORLD HEALTH ORGANIZATION ---***

# Health

```
graph TD; Health[Health] --- Physical[Physical Health]; Health --- Mental[Mental Health]; Health --- Social[Social Health];
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\*Absence of disease & disability

\*Energy to accomplish daily tasks and active leisure without undue fatigue

## Physical Health

\*Absence of mental disorders

\*

Ability to meet daily challenges and social interactions without undue mental, emotional, or behavioral problems

## Mental Health

\*Ability to interact effectively with other people and the social environment, enjoying satisfying personal relationship

## Social Health

**HEALTH**

High-Risk Behavior

Disease

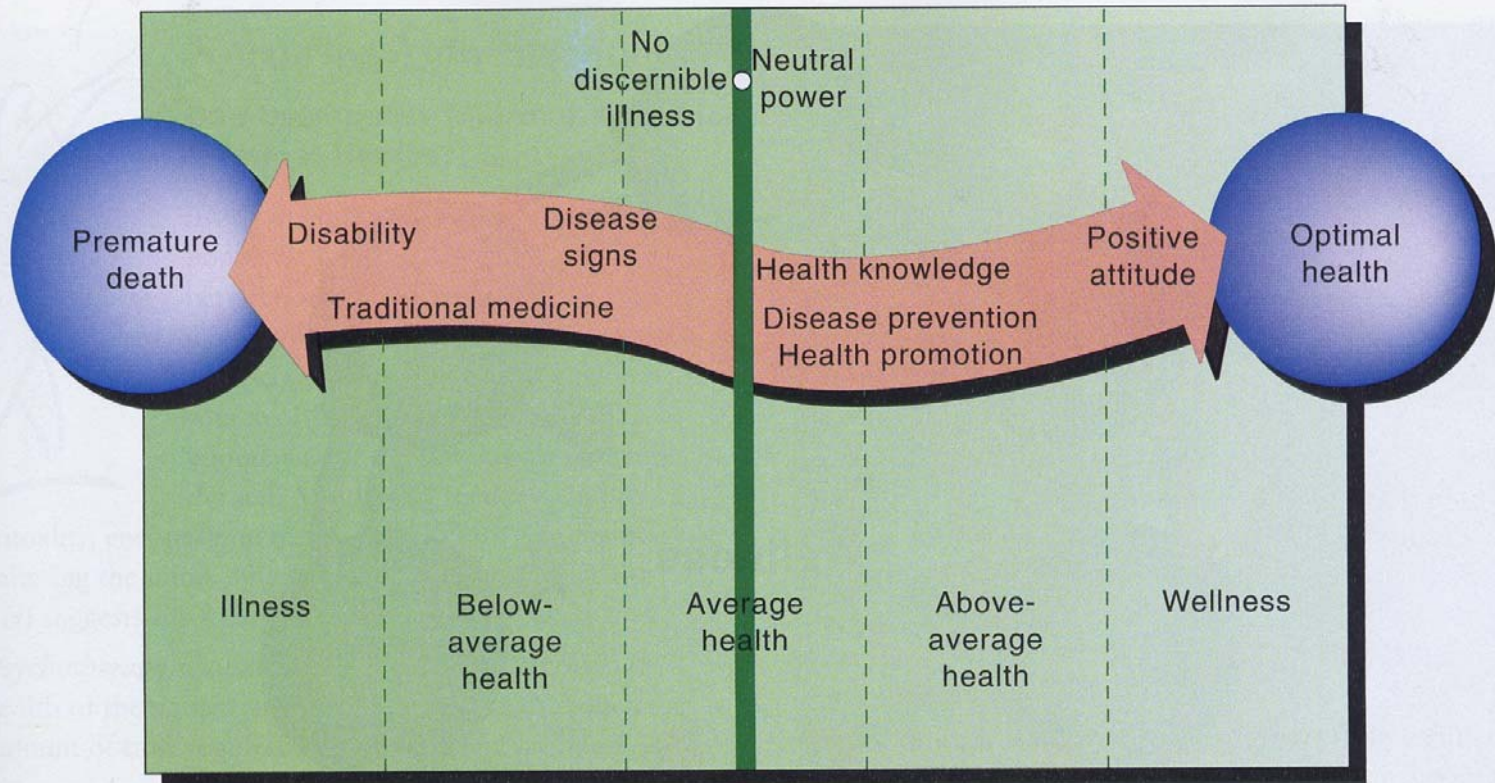
**DEATH**



- \*Physical, mental, social, spiritual well-being
- \*positive lifestyle habits

- \*Smoking
- \*High-fat, low-fiber diet
- \*Inactivity
- \*High stress
- \*Alcohol & other drug abuse
- \*Reckless driving
- \*Unsafe sex

- Coronary heart disease
- Cancer
- Stroke
- Diabetes
- AIDS
- Obesity
- Hypertension
- Alcoholism
- Cirrhosis
- Osteoporosis



**Figure 1-1** The Health Continuum

**Table 1.1** *Leading Causes of Death in the United States*

Rank	Cause of Death	Number of Deaths	Percent of Total Deaths	Female/Male Ratio <sup>a</sup>	Lifestyle Factors
1	Heart disease	695,754	28.4	52/48	D I S A
2	Cancer	558,847	22.8	48/52	D I S A
3	Stroke	163,010	6.7	61/39	D I S A
4	Chronic lower respiratory diseases	125,500	5.1	51/49	S
5	Unintentional injuries (accidents)	102,303	4.2	35/65	I S A
6	Diabetes mellitus	73,119	3.0	54/46	D I S
7	Influenza and pneumonia	65,984	2.6	56/44	S
8	Alzheimer's disease	58,785	2.4	71/29	
9	Kidney disease	41,018	1.7	52/48	D I S A
10	Septicemia (systemic blood infection)	33,881	1.4	56/44	A
11	Intentional self-harm (suicide)	30,646	1.3	19/81	A
12	Chronic liver disease and cirrhosis	27,045	1.1	36/64	A
13	Hypertension (high blood pressure)	20,241	0.8	62/38	D I S A
14	Pneumonia due to aspiration	17,693	0.7	50/50	
15	Assault (homicide)	17,045	0.7	23/77	A
	All causes	2,447,862			

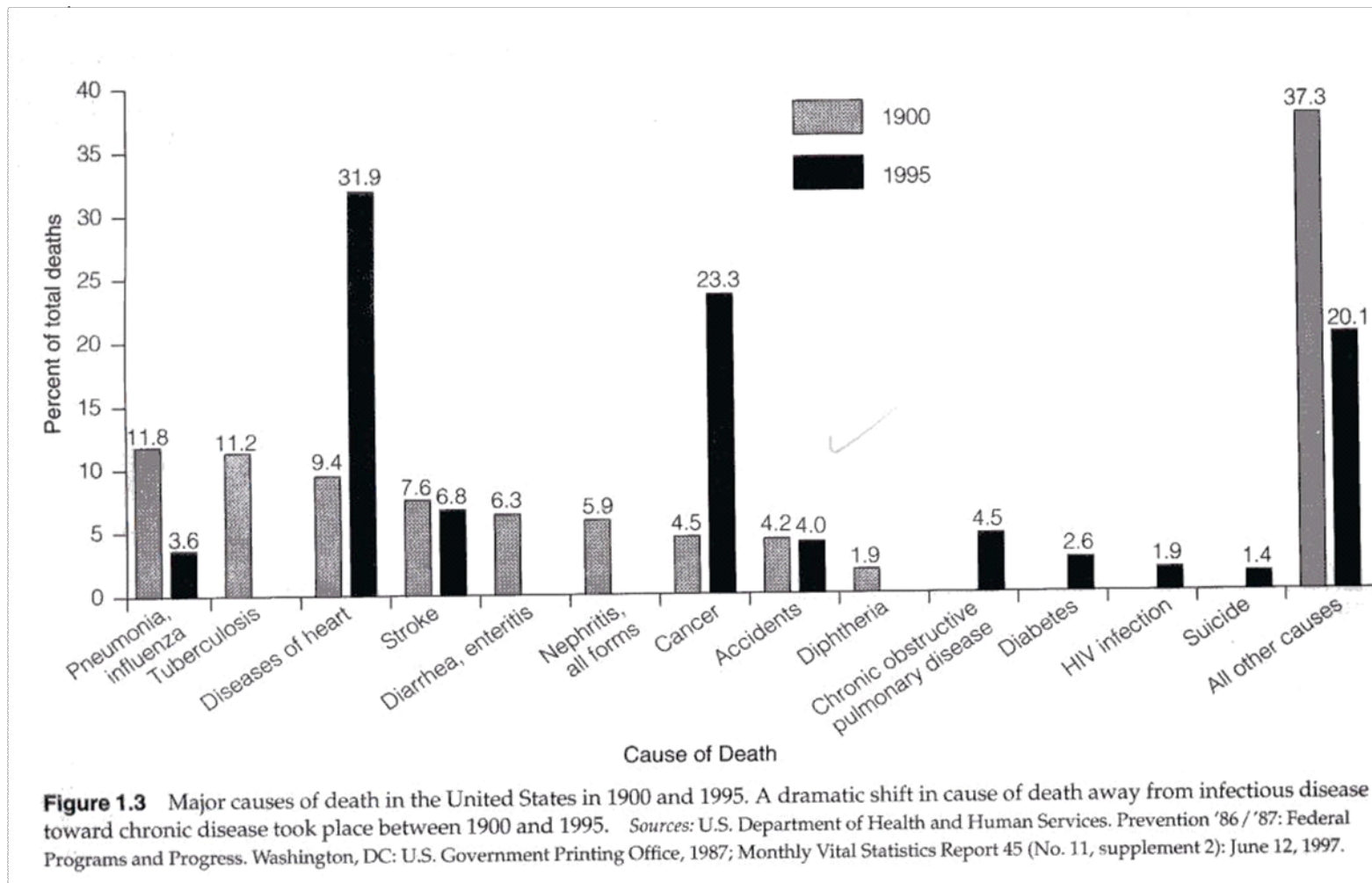
Key **D** Cause of death in which diet plays a part  
**I** Cause of death in which an inactive lifestyle plays a part  
**S** Cause of death in which smoking plays a part  
**A** Cause of death in which excessive alcohol consumption plays a part

<sup>a</sup>Ratio of females to males who died of each cause. For example, about the same number of women and men died of heart disease, but only about half as many women as men died of unintentional injuries and four times as many men as women committed suicide.

Note: Although deaths from HIV/AIDS have declined in recent years, HIV/AIDS remains a serious public health problem, causing more than 14,000 deaths per year in the United States. It is one of the 10 leading causes of death among people between the ages of 15 and 64.

SOURCE: National Center for Health Statistics. 2004. Deaths: Preliminary data for 2002. *National Vital Statistics Report* 52(13). National Center for Health Statistics. 2003. Deaths: Final data for 2001. *National Vital Statistics Report* 52(3).

## Major Causes of Death in the USA in 1900 & 1995



Source: U.S. Dept. Health & Human Services. 1997

# LIFE-STYLE

- *Specific behaviors or ways an individual typically lives*

***CHANGING LIFE-STYLE IS THE BEST WAY TO PREVENT EARLY DEATH IN OUR SOCIETY***

***Healthy life-styles learned early in life are most likely to be maintained throughout life***

***It is never too late to adopt positive life-styles to promote optimal health***



# HEALTHY LIFE-STYLES

- ***EXERCISING REGULARLY***
- ***EATING REGULARLY***
- ***CONTROLLING STRESS***
- ***ADOPTING GOOD SAFETY HABITS***
- ***SEEKING AND COMPLYING WITH MEDICAL ADVICE***
- ***LEARNING FIRST AID***
- ***AVOIDING DESTRUCTIVE HABITS***

# WELLNESS

***The integration of all parts of health (mental, social, emotional, spiritual, and physical) that expands one's potential to live and work effectively and to make a significant contribution to society.***

# Wellness & Health

A state of optimal health across the seven dimensions

A state of complete mental, Physical, and social well-being; Not merely the absence of disease



physical

social

intellectual

spiritual

environmental

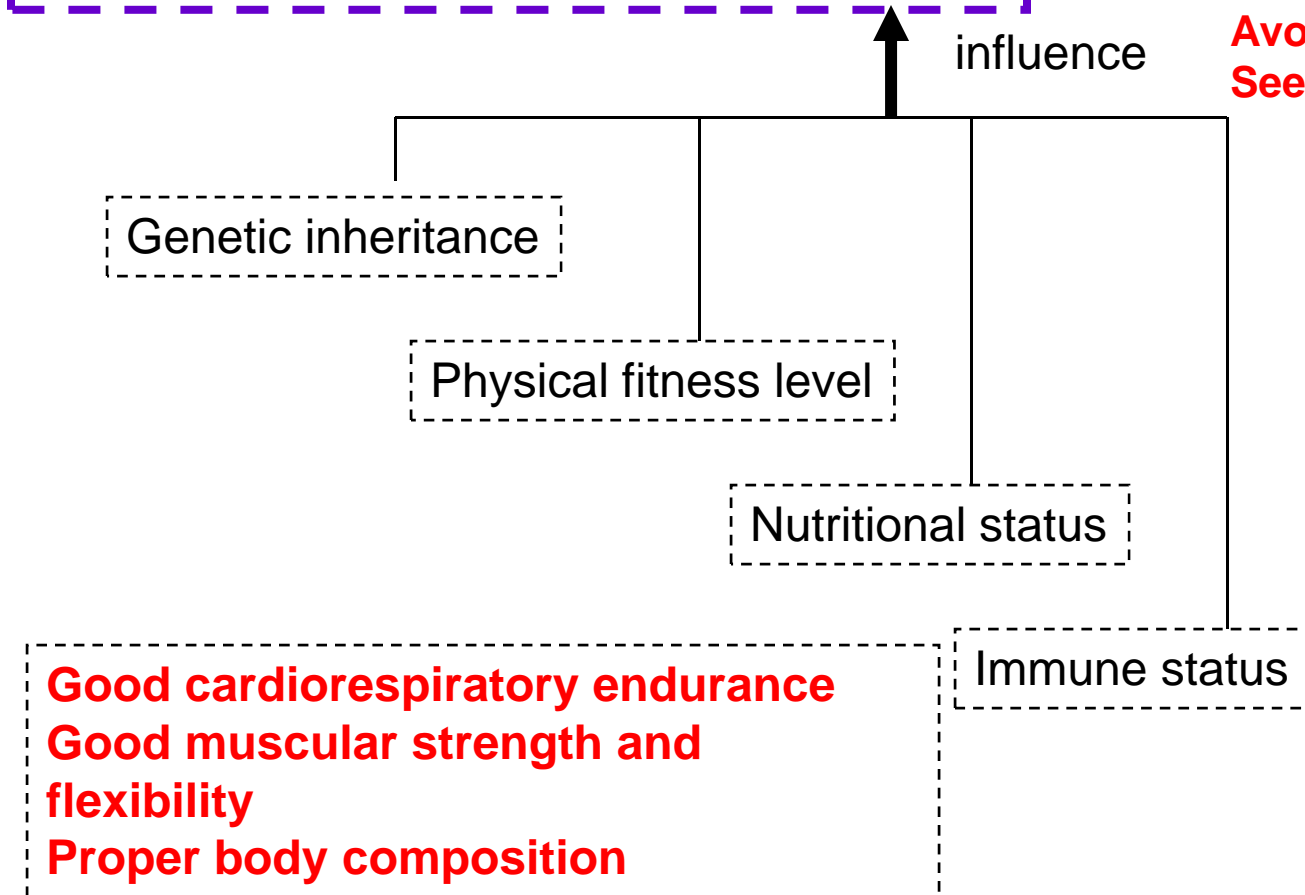
emotional

occupational

# Seven Dimensions of Wellness

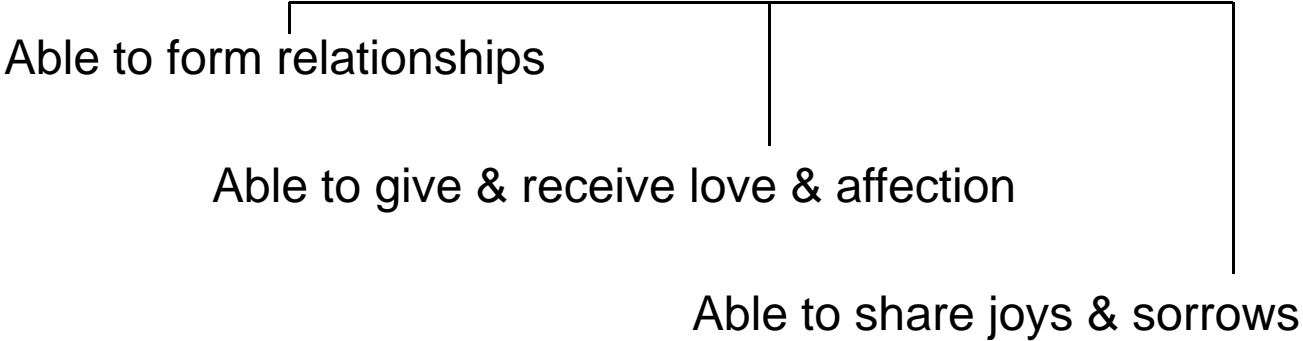
**Physical: how well the body performs its functions**

- Physically active
- Exercise regularly
- Eat a well-balanced diet
- Sufficient sleep
- Safe sex
- Minimize exposure to environmental contaminants
- Avoid harmful drugs
- Seek medical care as needed



Anything else ?

**Social: Being connected to others through various types of relationships**



What is the best relationship in our society? In your life?

What is the worst relationship in our society? In your life?

Research: Mayo Clinic. 1999. Staying connected: Close ties promote Health. Mayo clinic Health Letter 17 (11):7.  
17 yrs 7,000 subject. Lacking social connections, 2-3 times premature death

**Emotional: Being in touch with feelings, having the ability to express them, and being able to control them when necessary**  
**Accept your limitation and achieve emotional stability**

**More: Adjust to changes, cope with stress in a healthy way**  
**Enjoy life despite its occasional disappointment and frustration**

**Feeling:**

Loving  
Caring  
Hating  
Hurt  
release  
Joy  
Anxiety  
Fear  
Frustration  
Intense anger

Make us feel alive

Provide us with experiences

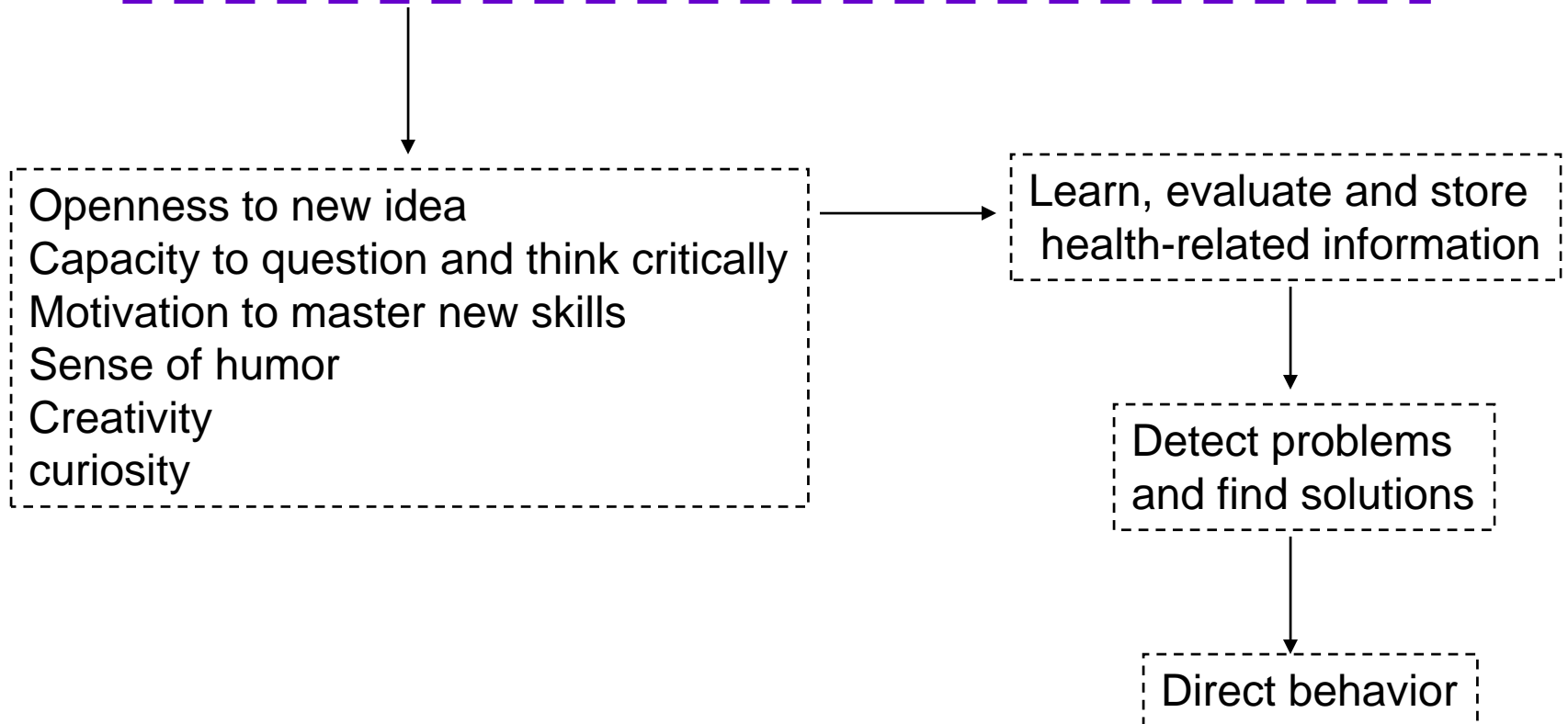
***Success verse Failure***

***Happiness verse depression***

***Only in human being??***

Research: Ahmad, K. 2000. Anger and hostility linked to CHD.  
Lancet 355 (9215): 1621. 6 yrs, 12,986 subjects. 256 had heart  
attack. 3 times in those more prone to anger

Intellectual: Ability to process information effectively



***Never stop learning***

Spiritual: Beliefs, principles or value that give meaning and Purpose to our life

Religion  
Supernatural force

A mental support?

**People with higher levels of intrinsic spirituality  
Tend to be healthier.**  
(McBride et al. 1998, The relationship between a patient's  
Spirituality and health experience. Family Medicine, 30, 122-126)



Standard of living and quality of life in the community

**Environmental: The physical and social surroundings that affect individuals' functioning on both micro and macro levels**

Micro

Macro

School  
Home  
Worksite  
Neighborhood  
Family  
Friends  
Associate  
Social support

Country  
World

theft, crime, violence, pollution

**Occupational: Enjoyment of what you are doing to earn a living and contribute to society**



Skill  
Knowledge  
Critical thinking  
Problem solving  
Communicating well

A balance between work and leisure time

