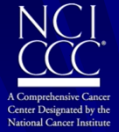




ROBERT WOOD JOHNSON
MEDICAL SCHOOL
University of Medicine & Dentistry of New Jersey



Body & Soul+

A Multi-Phase Health Initiative for Houses of Worship

Educational Session #1: Health and Physical Fitness

Good health, wellness, fitness, and healthy lifestyles are important for all people.

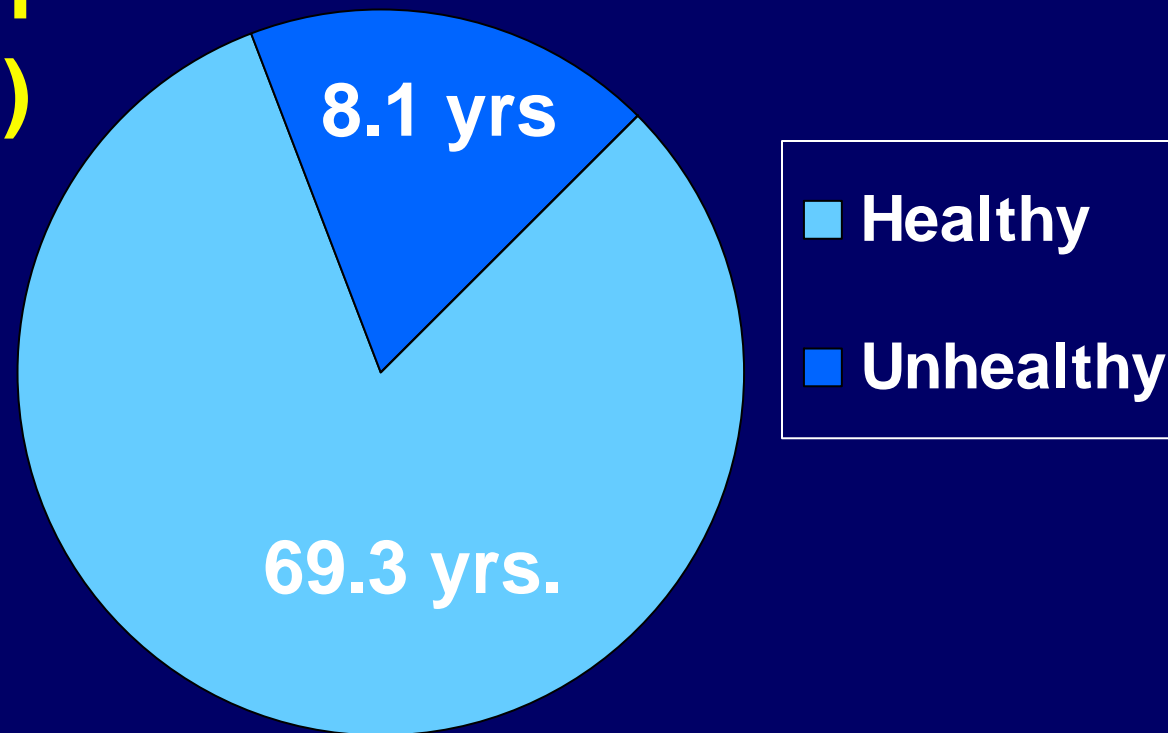
Carolyn D. Masterson, EdD

Department of Exercise Science and Physical Education

Montclair State University, Montclair, NJ

Years of Healthy Life

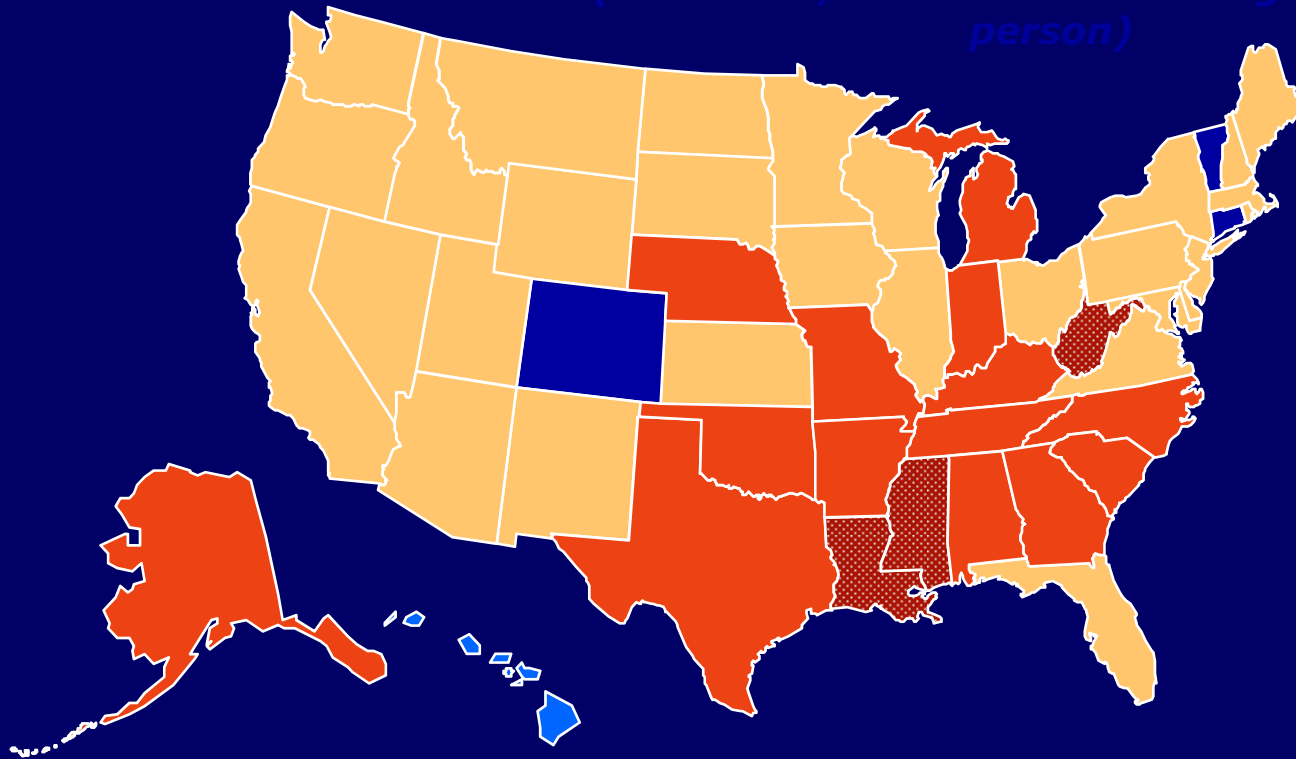
**Total Lifespan
(~ 77.6 Years)**




Obesity Trends Among U.S. Adults

BRFSS, 2005

(*BMI ≥ 30 , or ~ 30 lbs overweight for 5' 4" person)



Healthy People 2010 National Health Goals

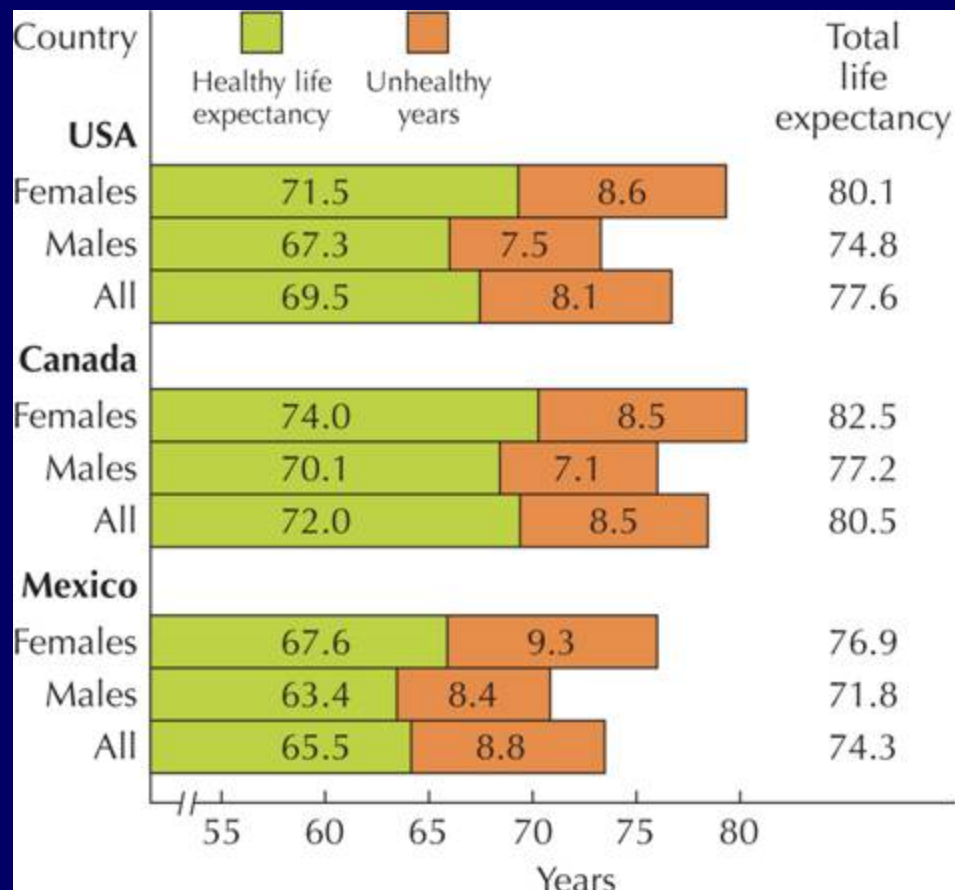


Increase the span of "healthy" life
Eliminate health disparities
**Increase access to information and
services for all people**



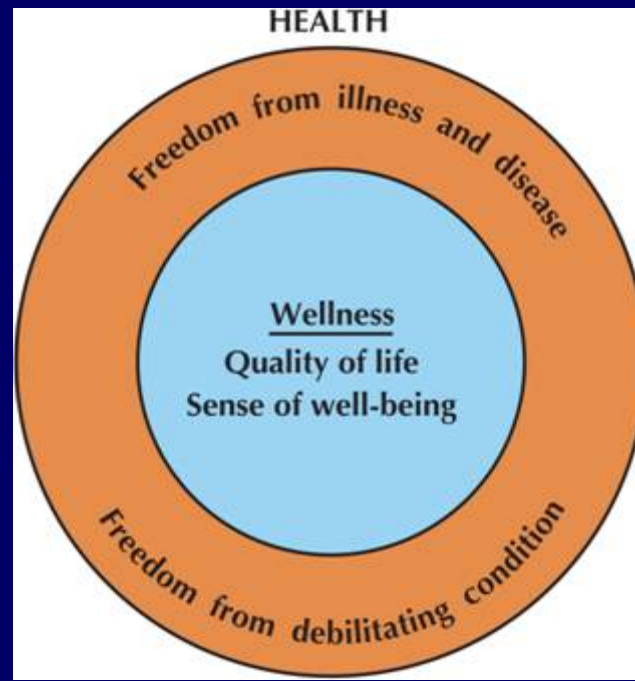
Web 01-5

Health Life Expectancy for North America



Difference between

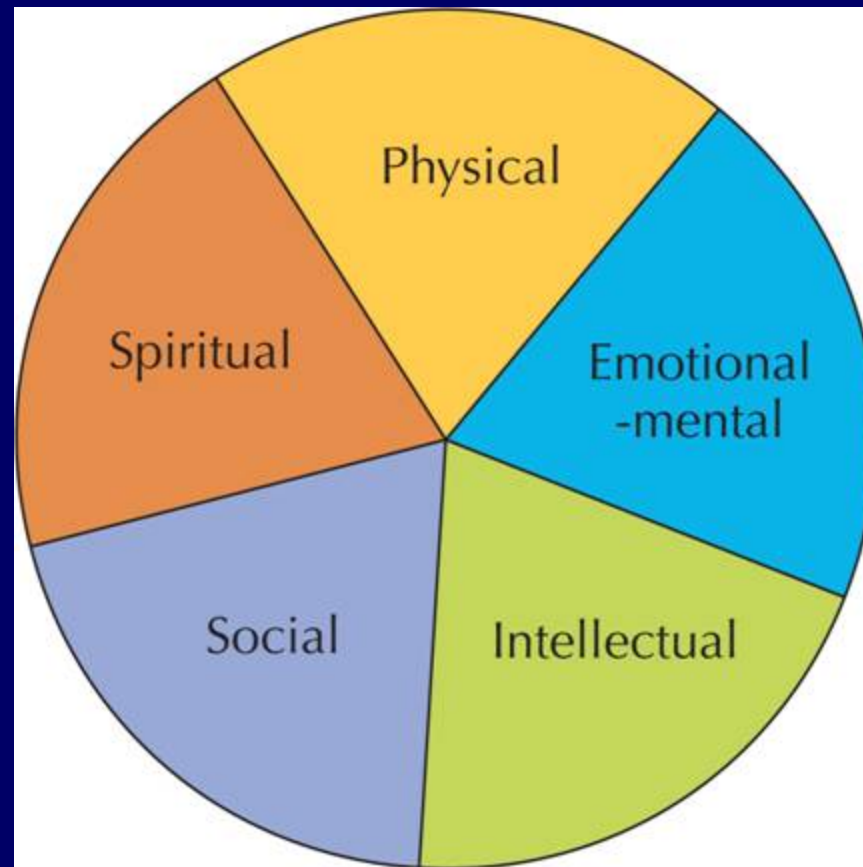
- **Wellness**
- **Health**
- **Physical Fitness**
- **Physical Education**
- **Physical Activity**



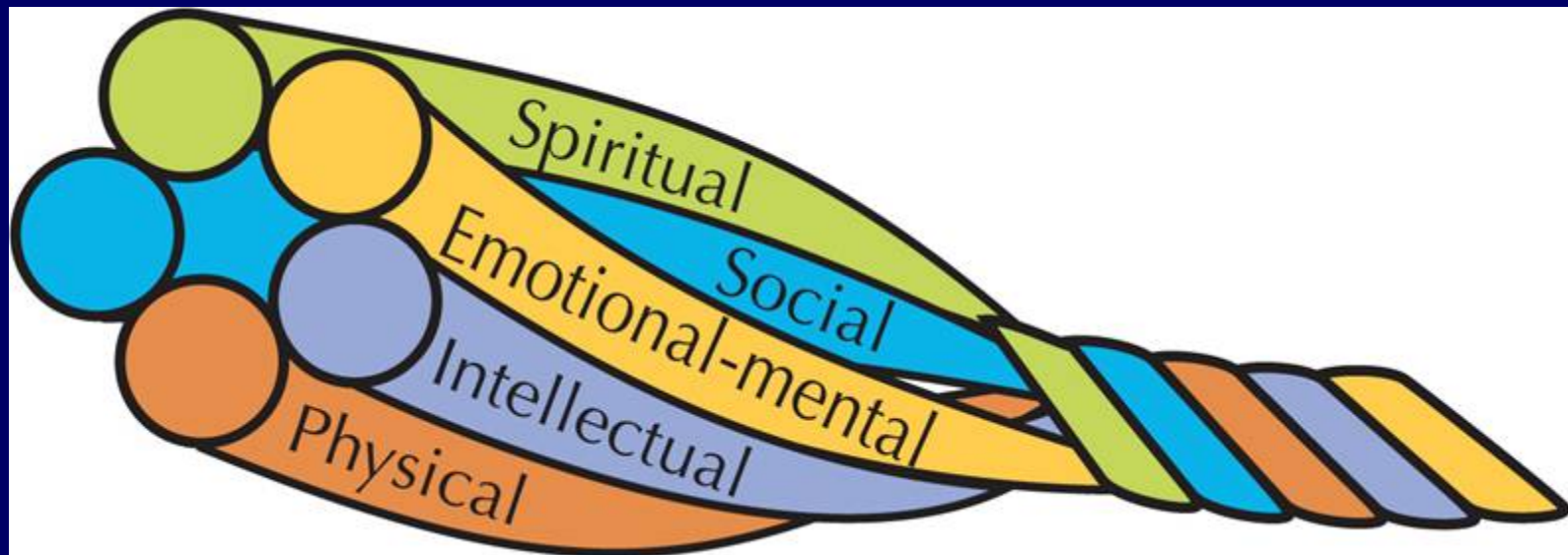
Health - state of being associated with freedom from disease and illness.

Wellness - the positive component of health; sense of well-being; a product; multidimensional

Wellness contains the five dimensions of health

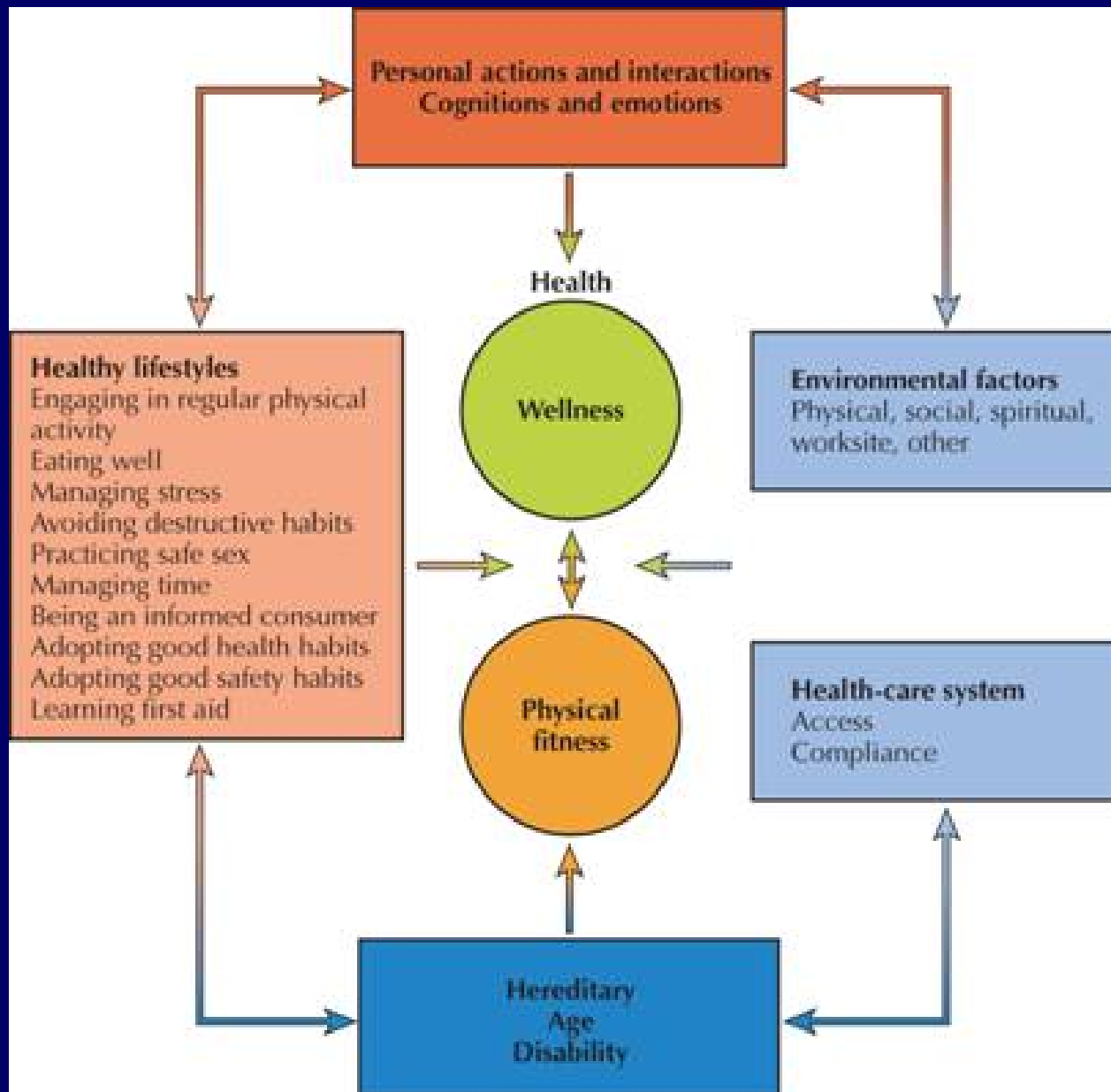


The Integration of Wellness Dimensions



Physical Fitness

- **Multi-dimensional state of being**
- **Body's ability to function efficiently and effectively**
- **Not the same as physical health and wellness**



Physical Fitness *cont'd*

- Consists of:
 - 5 health-related fitness components
 - 6 skill-related components (*aka sports fitness or motor fitness*)

Health Related Fitness

- Cardiovascular endurance
- Muscular endurance
- Muscular strength
- Flexibility
- Body composition



Skill Related Fitness

- Agility
- Balance
- Coordination
- Speed
- Power
- Reaction time



Physical Education

- **To educate individuals to know and perform different types of physical activity**
 - **Lifetime physical activity**
 - **Aerobic activity**
 - **Active sport and recreation activity**
 - **Exercise for flexibility**
 - **Exercise for strength and muscular endurance**
 - **Rest or inactivity**

Physical Activity



- **Physical activity is the process (do and know) that impacts health, wellness, & fitness**

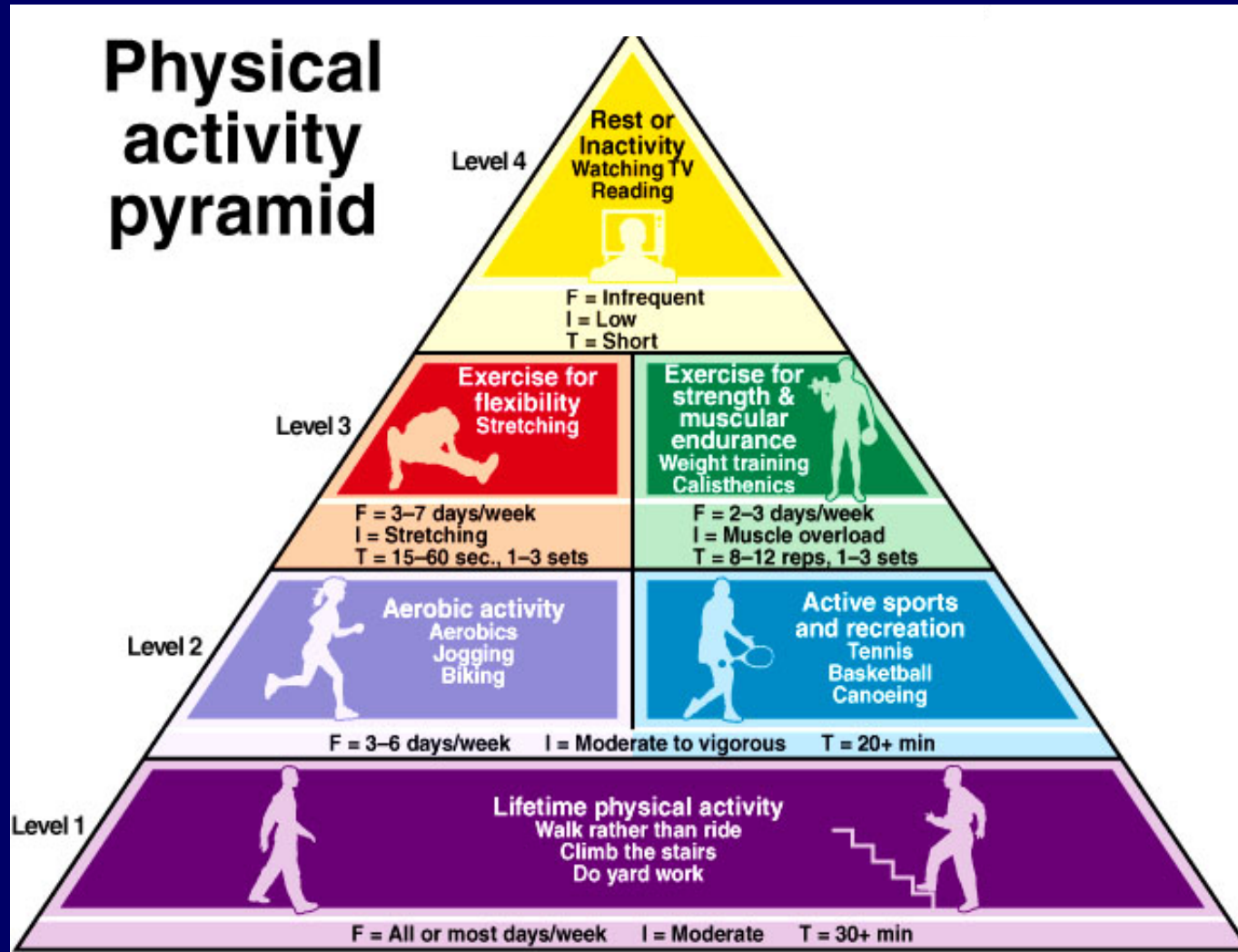
General Physical Activity Recommendations

“Every U.S. adult should accumulate 30 minutes or more of moderate-intensity physical activity on most, preferably all, days of the week”.

Surgeon General's Report on Physical Activity and Health

The level of activity recommended in this guideline can be achieved by incorporating lifestyle physical activity throughout the day.

Physical Activity Pyramid



Factors to Consider Prior to Physical Activity

- Medical readiness for physical activity (PAR-Q)
- Proper equipment and shoes

Principles of training for physical activity

- Warm-up and Cool down
- FIT formula
- Specificity/type
- Progression
- Overload
- Reversibility
- Dose-Response Relationship
- Diminishing Returns
- Rest & Recovery
- Principle of "Individuality"



Benefits of a Warm-up

- Prepare cardiovascular system
- Prepare metabolic system
- Prepare musculoskeletal system

Benefits of Cool down

- Reduces blood pooling
- Promotes recovery
- Minimizes muscle soreness

FIT Formula for CV Fitness

Threshold of Training

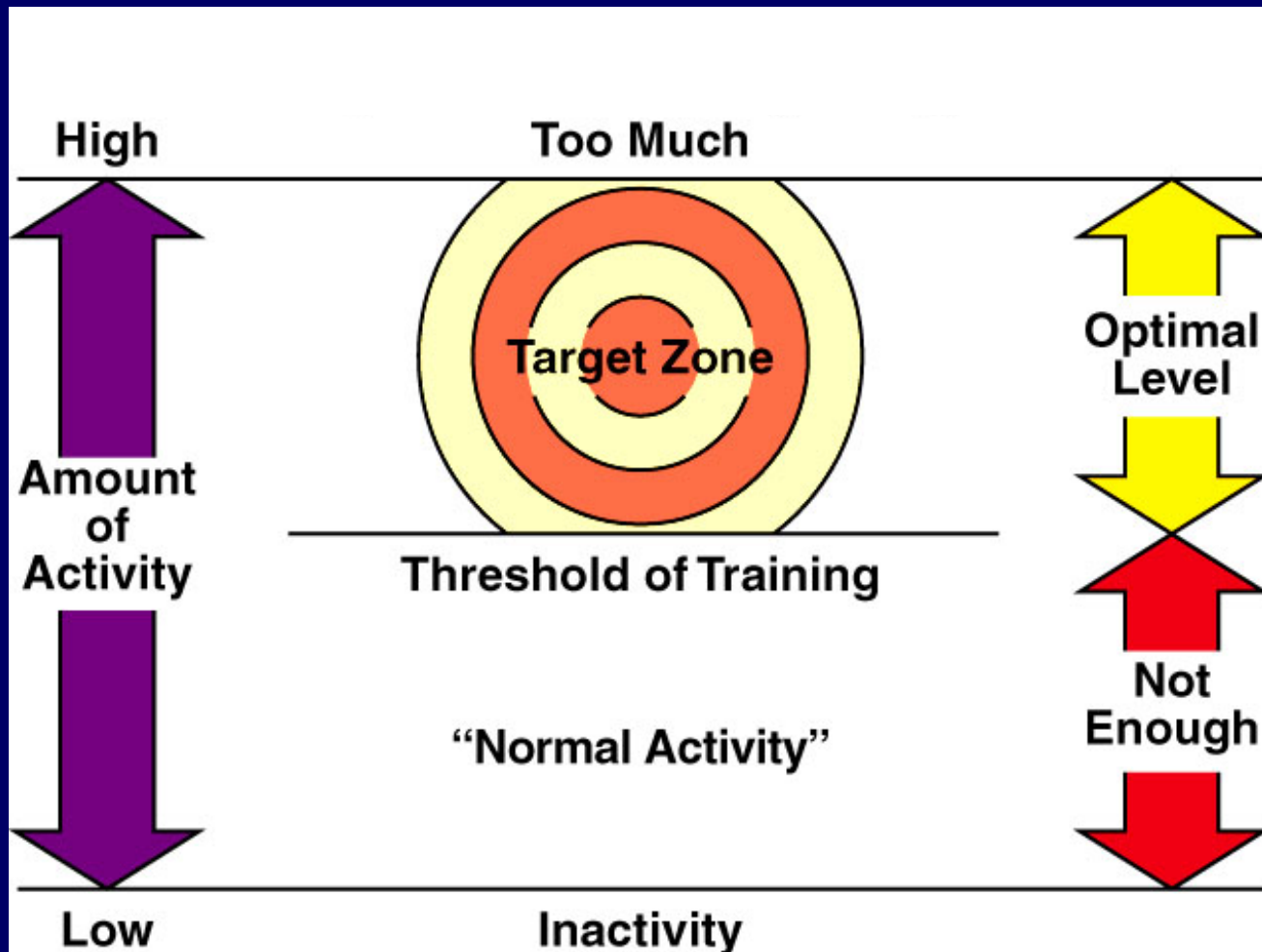


F Frequency

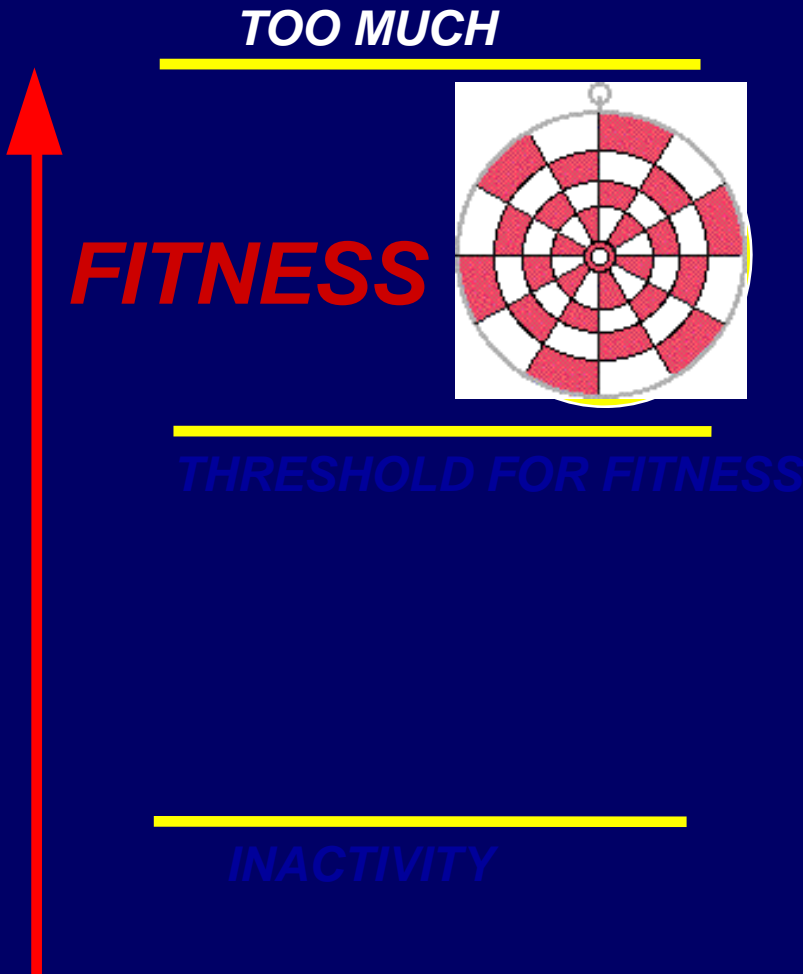
I Intensity

T Time

Physical Activity Target Zone



Target Zone: CV Fitness



TARGET ZONE:

F: 3-6x per week

I: 40-85% HR reserve
55-90% Max HR

T: 20-60 min

Ratings of Perceived Exertion

6	VERY VERY LIGHT
7	
8	
9	VERY LIGHT
10	
11	FAIRLY LIGHT
12	
13	SOMEWHAT HARD
14	
15	HARD
16	
17	VERY HARD
18	
19	
20	VERY VERY HARD



*Target Zone
for using
RPE*

Summary of Target Zones for Aerobic Exercise



TARGET ZONE

*55-90% of maximum heart rate
40-85% of heart rate reserve
12 - 16 on RPE scale*

**THRESHOLD
OF TRAINING**

*55% of maximum heart rate
40% of heart rate reserve
12 on RPE scale*

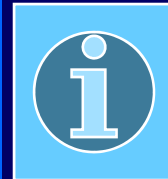
INACTIVITY

Calculating Target Heart Zones

- Maximum heart rate method
- Working heart rate method

Click on icon for examples for calculating target zones with both approaches. The same basic information is used for both to allow for comparisons of results.

(e.g. 22 years old with a resting heart rate of 68 bpm)



Target Heart Rate Formula

- My Resting Heart Rate is _____
- Threshold heart rate – Low End
- $208 - \text{_____} (.70 \times \text{your age})$

= _____ (Maximal Heart Rate)

- _____ Maximum Heart Rate X .60 (Threshold percent)
- Answer _____ (Lower Threshold heart rate)
- Threshold heart rate – Target Ceiling End
- _____
- _____ Maximal Heart Rate X .85 (Threshold percent)
- Answer _____ Upper (Threshold heart rate)

- Target Heart Rate Zone _____ to _____ Beats Per Minute

Principle of Specificity

- Must overload for specifically what you want to benefit.
 - Examples:
 - Strength-training does little for cardiovascular fitness.*
 - Flexibility training does little for body composition.*
- Overload is specific to each body part.
 - Example:
 - Exercise legs → build fitness in legs*

Principle of Progression

- Overload should occur in a gradual progression rather than in major bursts.
- Could result in excessive soreness or injury if you fail to adhere to this principle.
- Most effective training is when sessions become progressively more challenging over time.

Overload Principle

- Most basic of all principles
- Doing “more than normal” is necessary for benefits
- Muscle must work against a greater than normal load to get stronger
- Muscle must be stretched longer than is normal to increase flexibility
- Less overload required for health benefits associated with metabolic fitness.



Principle of Reversibility

- **Overload principle in reverse.**
- **If you don't use it, you will lose it!**
- **Some evidence exists that you can maintain health benefits with less physical activity than it took to achieve them.**

Dose-Response Relationship

- The more physical activity you perform, the more you benefit.
- There are exceptions to this rule.



Principle of Rest & Recovery

- Rest is needed to allow body to adapt to exercise.
- Allow time for recuperation after overload.
- If no rest, could lead to overuse injuries, fatigue, and reduced performance.
- Examples:
 - Alternate hard/easy days.
 - Day off between bouts of exercise.



Exercise Activities

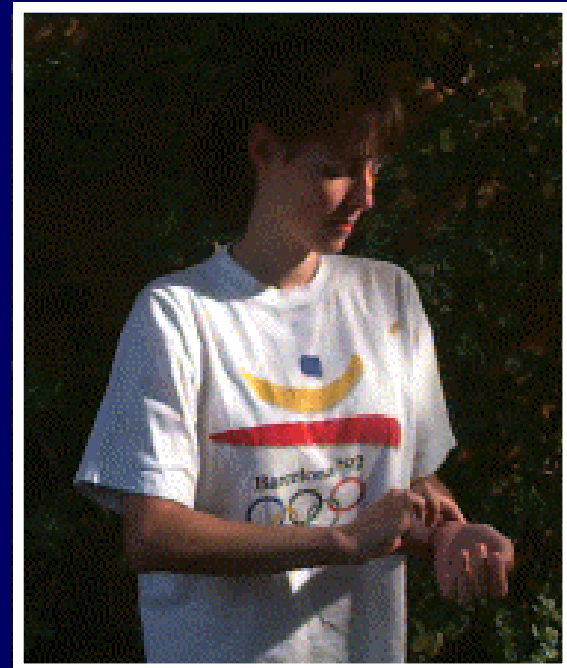
- **Take a Pulse (How and Where)**
 - Paper plate warm up
 - Walking partner tag
 - Team juggle
- **Pedometers**
 - Stride measure
 - Rainbow walk

Location for Pulse

Carotid artery



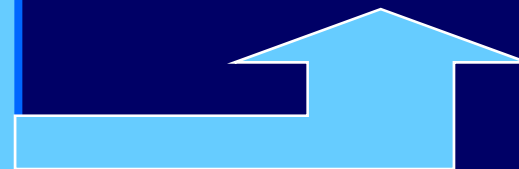
Radial artery



Factors in Pulse Monitoring

- Short time (10-15 seconds)
- Locate quickly
- Typical of the exercise bout

HR monitors can provide a continuous record of heart rate during your exercise.



Pedometers



- Pedometers provide a great way to remind you to get more lifestyle physical activity in your day (self-monitoring).
- Set step goals based on 1 week of baseline steps (average steps/day)
- Increase step count by 1,000 to 3,000 steps/day

10,000 steps is NOT for everyone!



Walk 4 Life Inc.



New Lifestyles Inc.

THE YAMAX SW-701 PEDOMETER

What makes the SW-701 DIGI-WALKER pedometer special is that it can be programmed with your weight to help determine your estimated energy expenditure. Please note that it calculates activity calories only and not total calories, i.e., it doesn't calculate your basal metabolic rate. If you're looking for a pedometer that gives you total calorie expenditure, then check out the NL-2000. The SW-701 ships with our 10,000 steps program guide. If you tend to lose things, a [security strap](#) is a smart option.

Features:
Steps
Distance

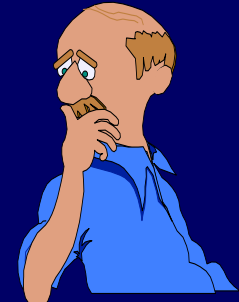
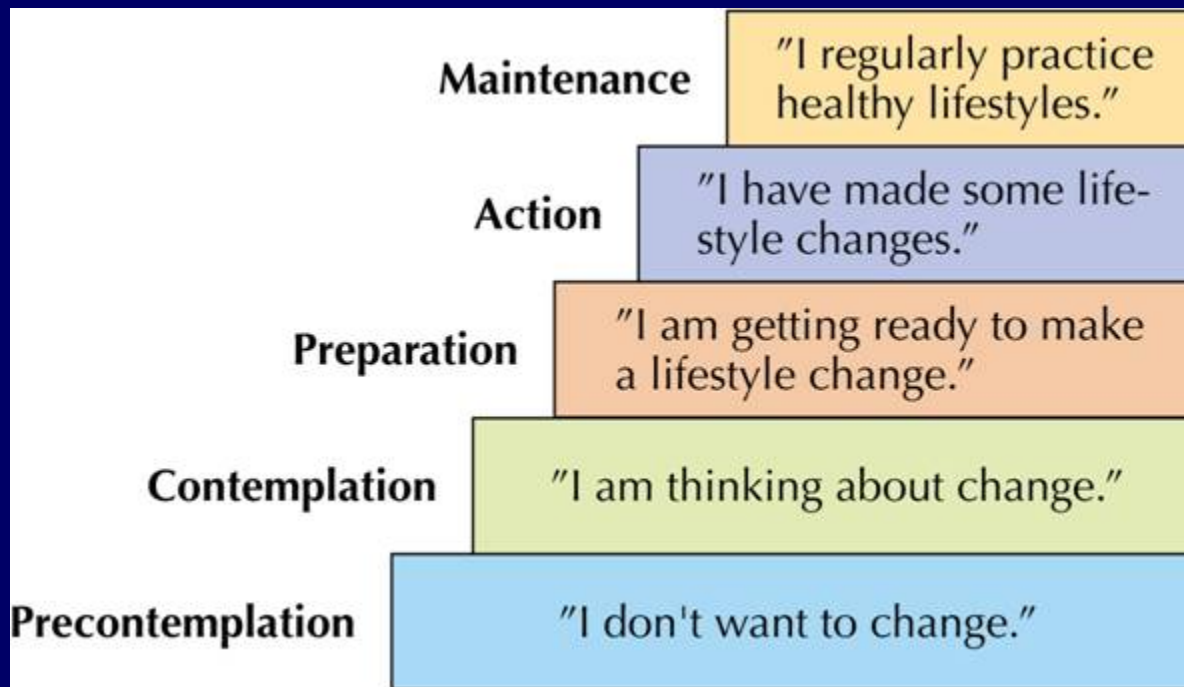
How Many Steps is Enough?

Activity Classification for Pedometer Step Counts in Healthy Adults

Category	Steps / day
Sedentary	< 5000
Low active	5000-7500
Somewhat active	7500-9999
Active	10,000-12,500
Very Active	> 12,500+

Source: Based on values from Tudor-Locke, 2004.

Stages of Change



Research shows that people advance through a series of stages as they attempt to change behaviors

At what stage are you?

Hints for Successful Behavior Change

- Make small changes
- Reward your progress
- Do not give up



Preparing for Physical Activity: Summary

- **General Exercise Guidelines**
 - Choose something you like
 - Know your limitations
 - Dress appropriately
 - Consider the environment
 - Start slowly
 - Listen to your body

