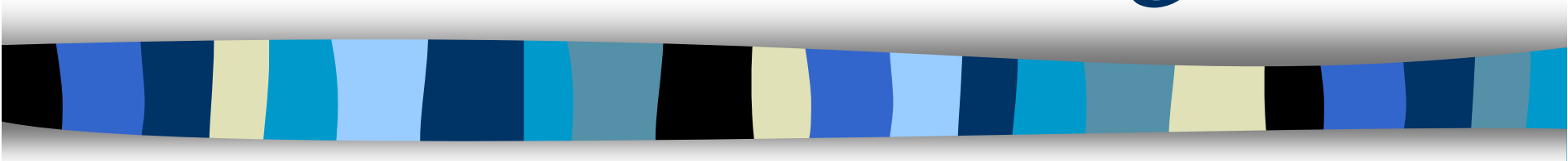
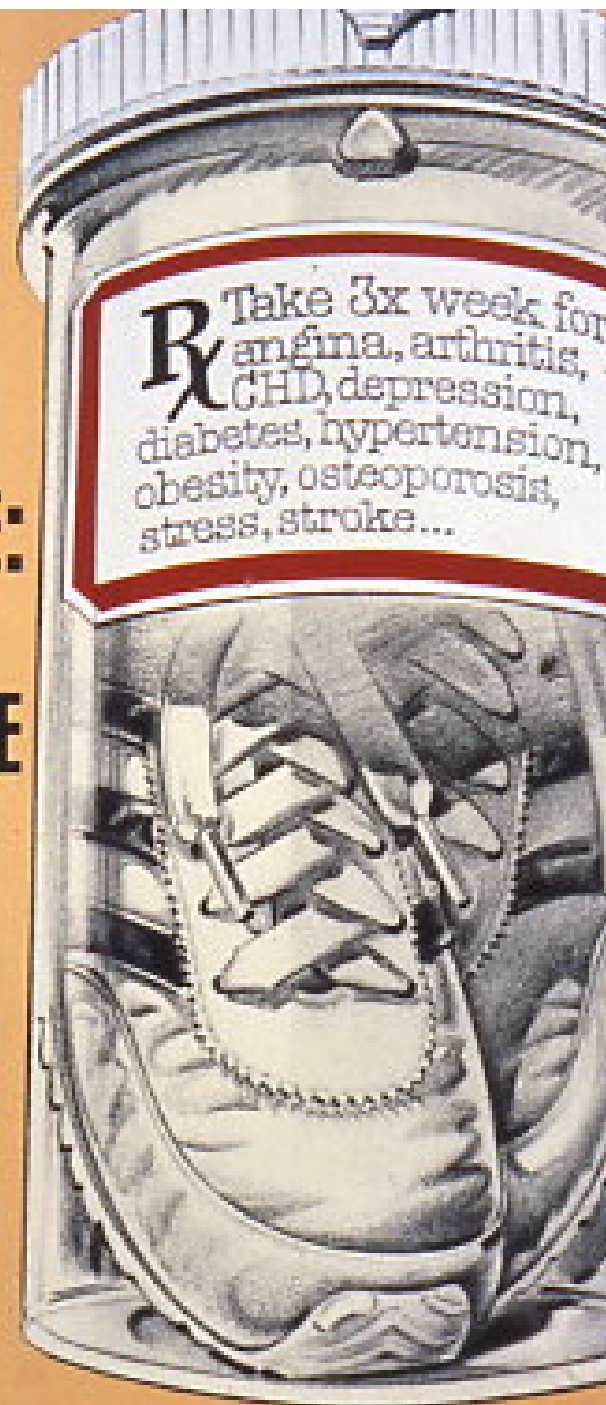


Exercise & Aging: The Fountain of Age



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**EXERCISE:
THE
MEDICINE
OF
CHOICE.**





Objectives

- n Discuss the risks of a sedentary life
- n Discuss the benefits of activity
- n Discuss the components of a healthy activity program
- n Discuss precautions



Surgeon General States....

**“Inactivity is
detrimental to your
health!”**

**Physical Activity and Health. A Report of the Surgeon General. U.S.
Department of Health and Human Services. 1996.**

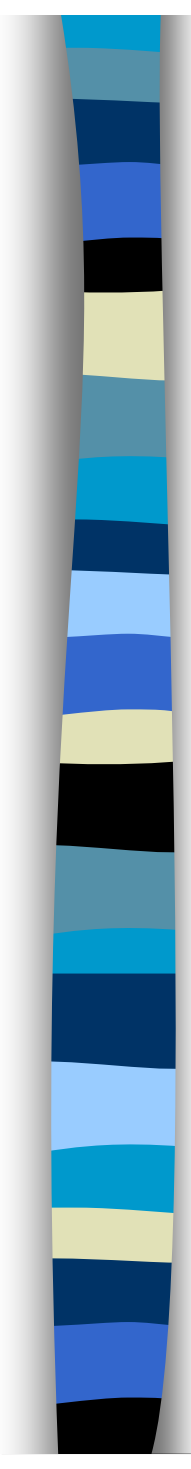


Sedentary Americans

- n 1 in 4 exercise regularly
- n 22% never exercise
- n 30% of those over age 65 never exercise
- n Less than 10% participate in vigorous exercise



www.StrangeCosmos.com



“When I get the urge
to exercise,
I lie down until it
passes.”

W.C. Fields

? DID YOU KNOW?

OVERUSING THIS
DEVICE MAY BE
HAZARDOUS
TO YOUR HEALTH





Results of Inactivity

- n High blood pressure
- n Diabetes
- n Osteoporosis
- n Falls
- n Arthritis
- n Cancer
- n Heart disease
- n Obesity
- n Dementia
- n Depression
- n Parkinson's
- n Stroke
- n Macular degeneration

There is scientific evidence exercise prevents these.



Heart Disease Risk Factors

Risk Factor

Relative Risk

Smoking

2.5

High cholesterol

2.4

High blood pressure

2.1

Sedentary

1.9



Centers for Disease Control

“Every American should accumulate 30 minutes or more of moderate-intensity physical activity over the course of most days of the week.”



Changing Views

- n **Any activity** is better than **none**
- n **Health**, not aerobic fitness
- n **Physical activity**, not exercise
- n **30 minutes** is good, but less is OK



Benefits of Activity

- n Decreased heart disease

- n Reduced weight

- n Better control of diabetes

- n Less constipation

- n Longer independence

- n Reduced pain in arthritis

- n Improved activities of daily living

- n Improved self image

- n Better thinking

- n Modify most diseases



Exercise and Medical Problems

- n Heart disease *
- Decreases heart attacks
- Improves heart failure
- Increases function
- Decreases meds used
- Decreases mortality

- n High blood pressure*
- Lowers systolic and diastolic BP
- Improves recovery time
- Decreases meds used

*Endurance & resistance



Exercise and Medical Problems

- n Cholesterol*
 - Raises HDL
 - Lowers LDL
 - Lowers TG

- n Stroke*
 - Reduces stroke risk
 - Improves recovery rate
- n Peripheral Vascular Disease*
 - Increases distance walked

*Endurance



Exercise and Medical Problems

n Diabetes

- Increases insulin sensitivity
- Decreases meds used
- Improves control
- Reduces complications

n Osteoporosis

- Reduces fracture rate
- Increases balance
- Decreases fall rates
- Decreases meds used



Exercise and Medical Problems

n Osteoarthritis

- Decreases pain
- Increases mobility
- Decreases need for joint replacement
- Increases ADLs
- Decreases meds used

n Rheumatoid arthritis

- Increases flexibility
- Increases strength
- No effect on disease activity or progression



Exercise and Medical Problems

n Low back pain

- Decreases episodes
- Increases return to activities in chronic (not acute) LBP
- Improves quality of life

n Emphysema

- Increases endurance
- Increases functional capacity
- Decreases shortness of breath
- Decreases hospitalizations
- Decreases meds used



Exercise and Medical Problems

n Sleep

- Increases duration
- Increases total sleep time
- Late exercise can decrease REM sleep

n Depression

- Decreases recurrence
- Increases resolution
- Decreases meds used



Exercise and Medical Problems

n Smoking

- Increases success rates with withdrawal programs

n Balance

- Walking, Tai Chi, stationary cycling all improve balance
- Decreases fall rates

n Cancer

- Prevents colon cancer
- Prevents breast cancer
- Improves prognosis
- Improves symptom tolerance during therapy



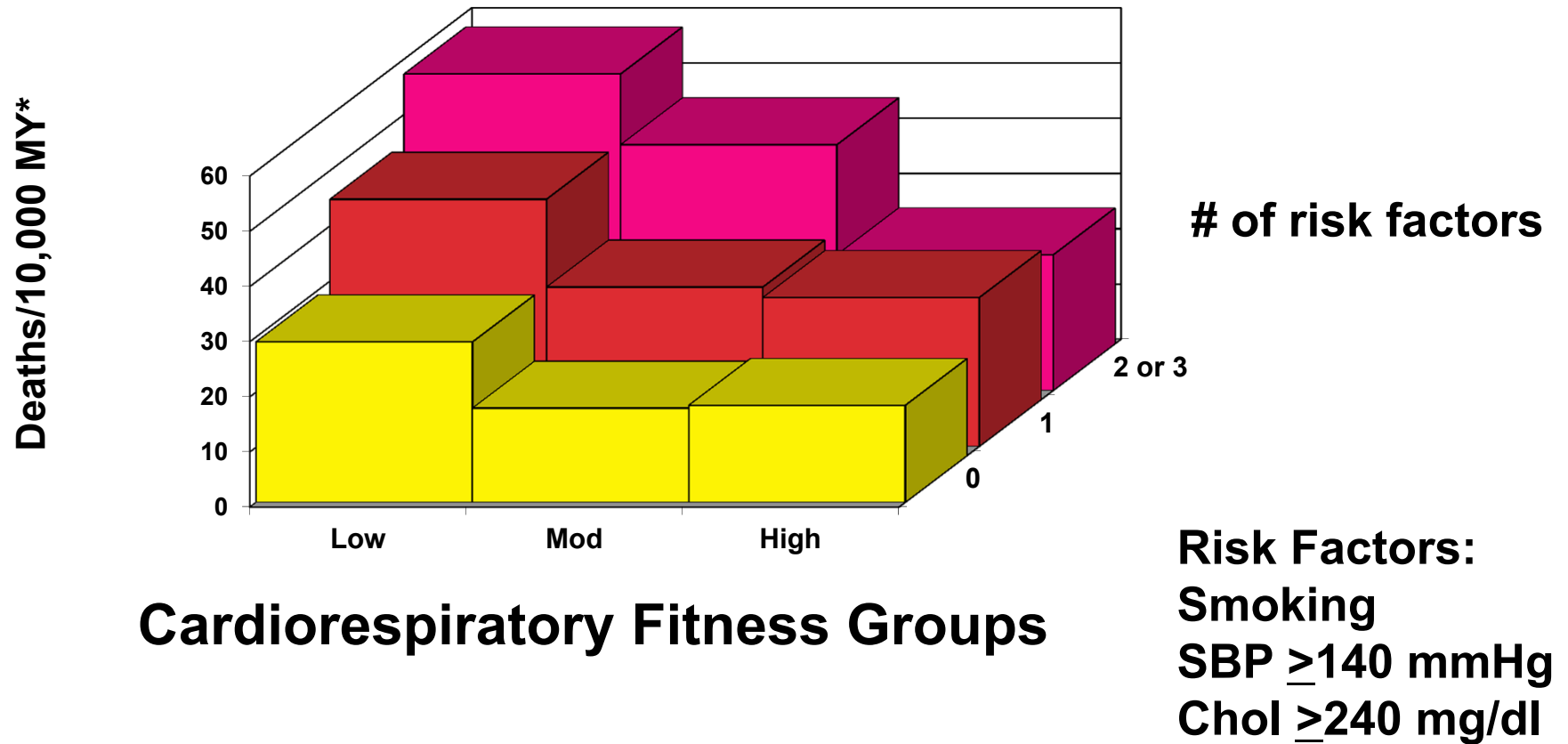
The Cost of Inactivity

“The overall costs avoided by exercise were \$0.68 per person for people aged 15-44, and \$30.39 for people aged 45 and over.”

$$\mathbf{\$30 \times 200,000,000 = \$6,000,000,000}$$

Nicholl JP, Coleman P, Brazier JE.
Health and healthcare costs and benefits of exercise.
Pharmacoeconomics 1994 Feb;5(2):109-22.

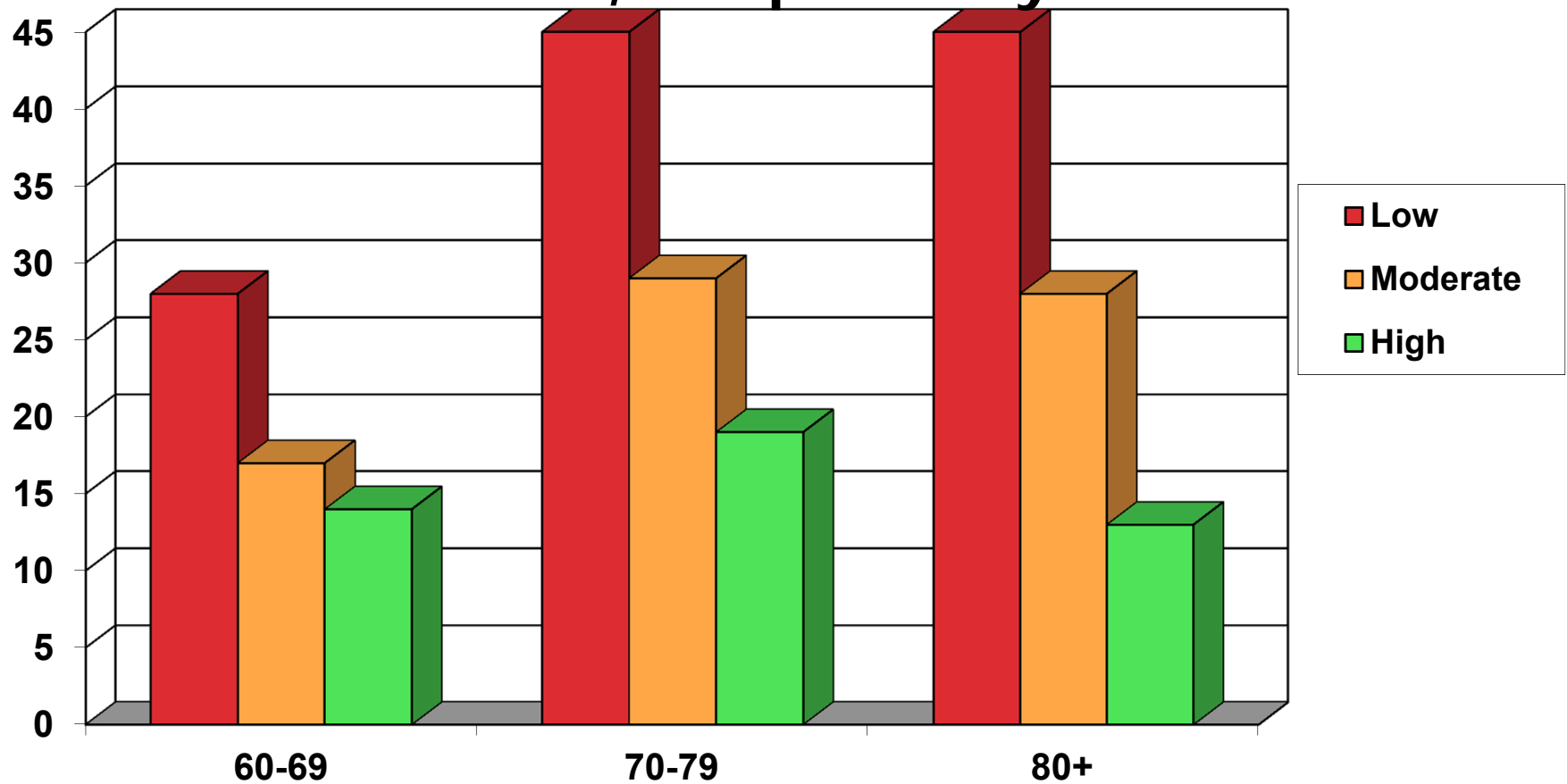
Fitness & Mortality



Fitness and Mortality

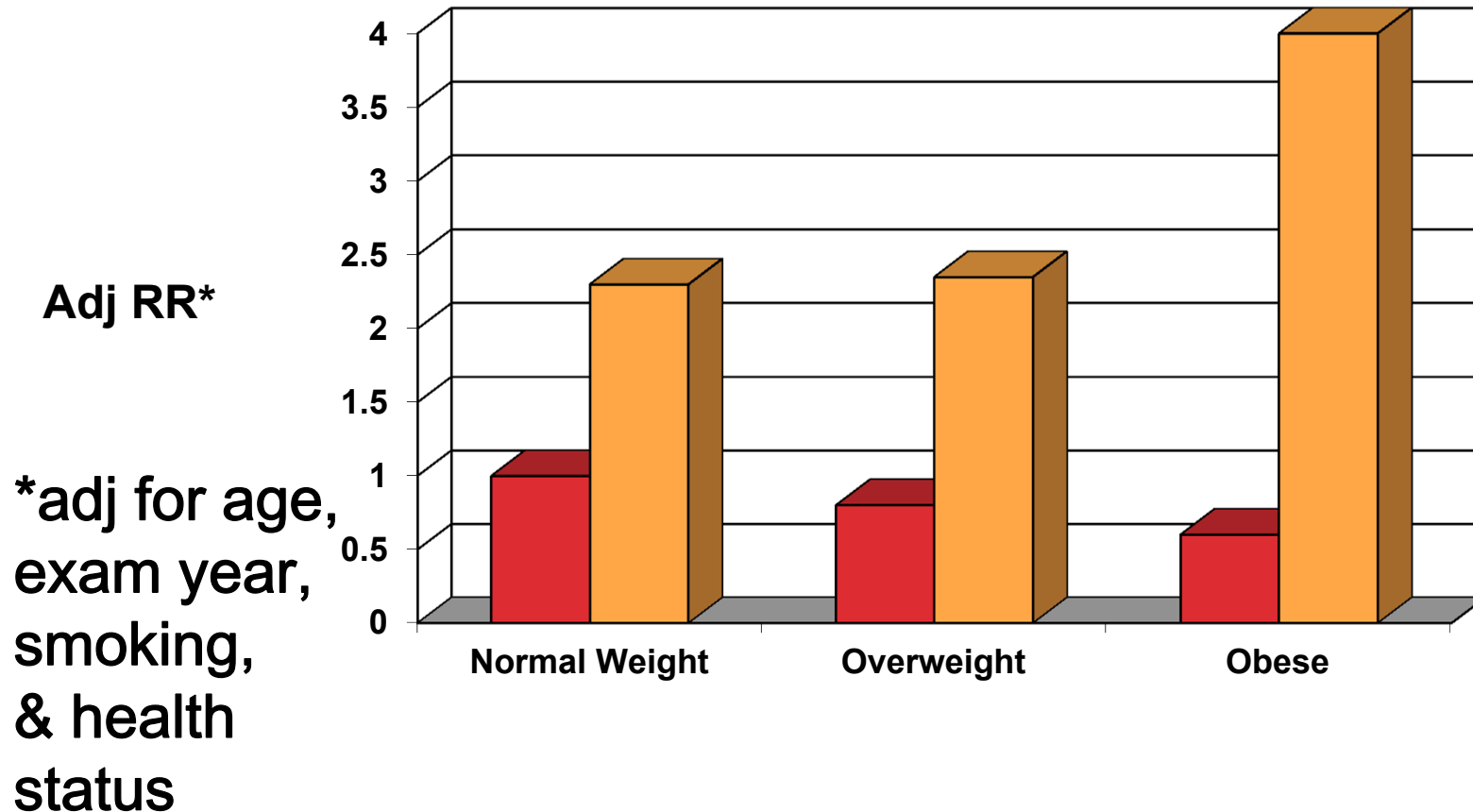
Women and Men ≥ 60 Y/O

All-cause deaths/10,000 person-years

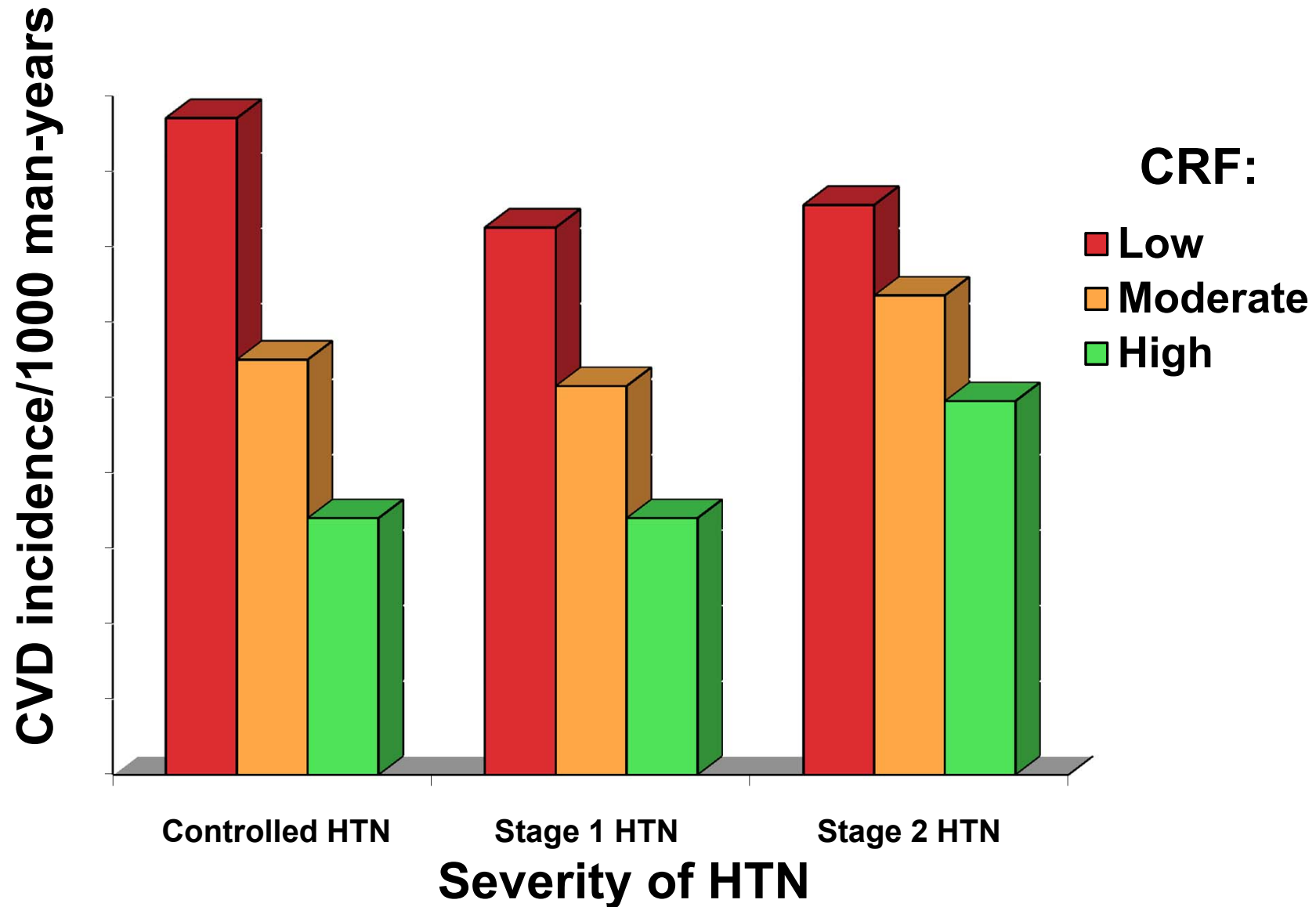


Sui M et al. *JAGS* 2007.

Fitness and Weight (Women)

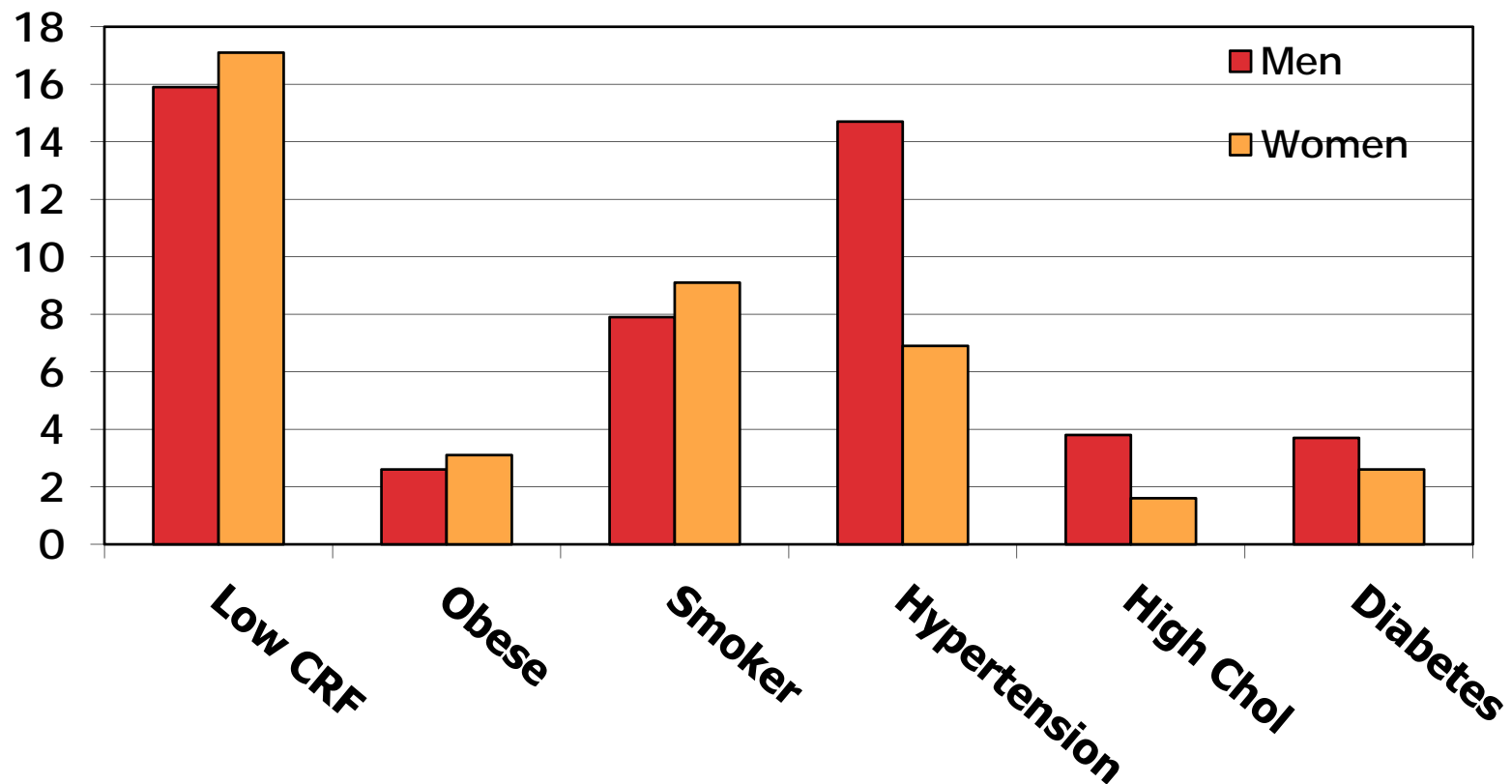


Fitness and Blood Pressure



Causes of Mortality

40,842 Men & 12,943 Women, ACLS





The “Best” Activity?

The one that you will do!



The Ideal Combination

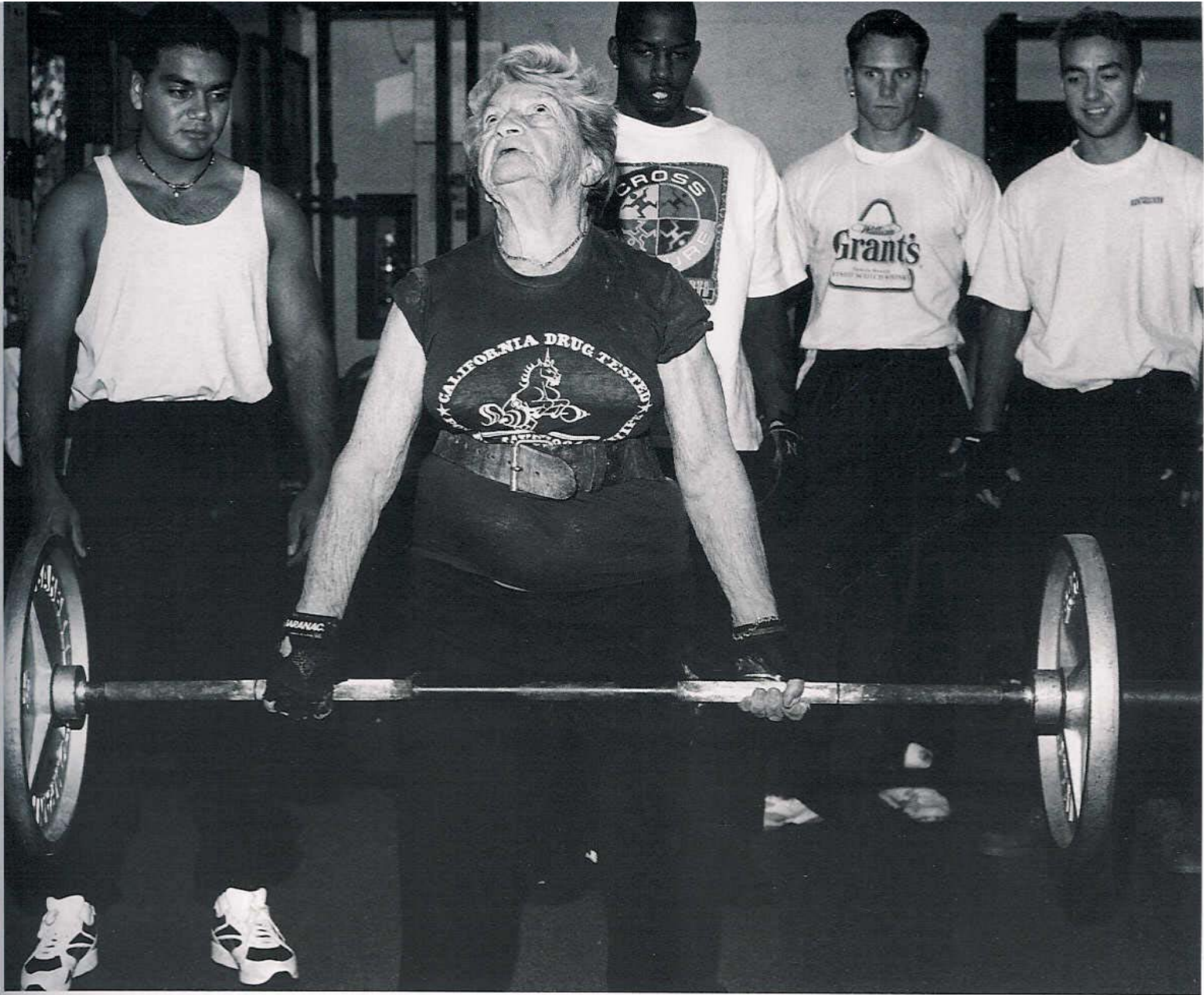
- n Strength (muscles)
- n Endurance (heart and lungs)
- n Balance (nerves)
- n Stretching (muscles and joints)

Fiatarone Singh, Exercise to prevent frailty, Clinics Geri Med 2000

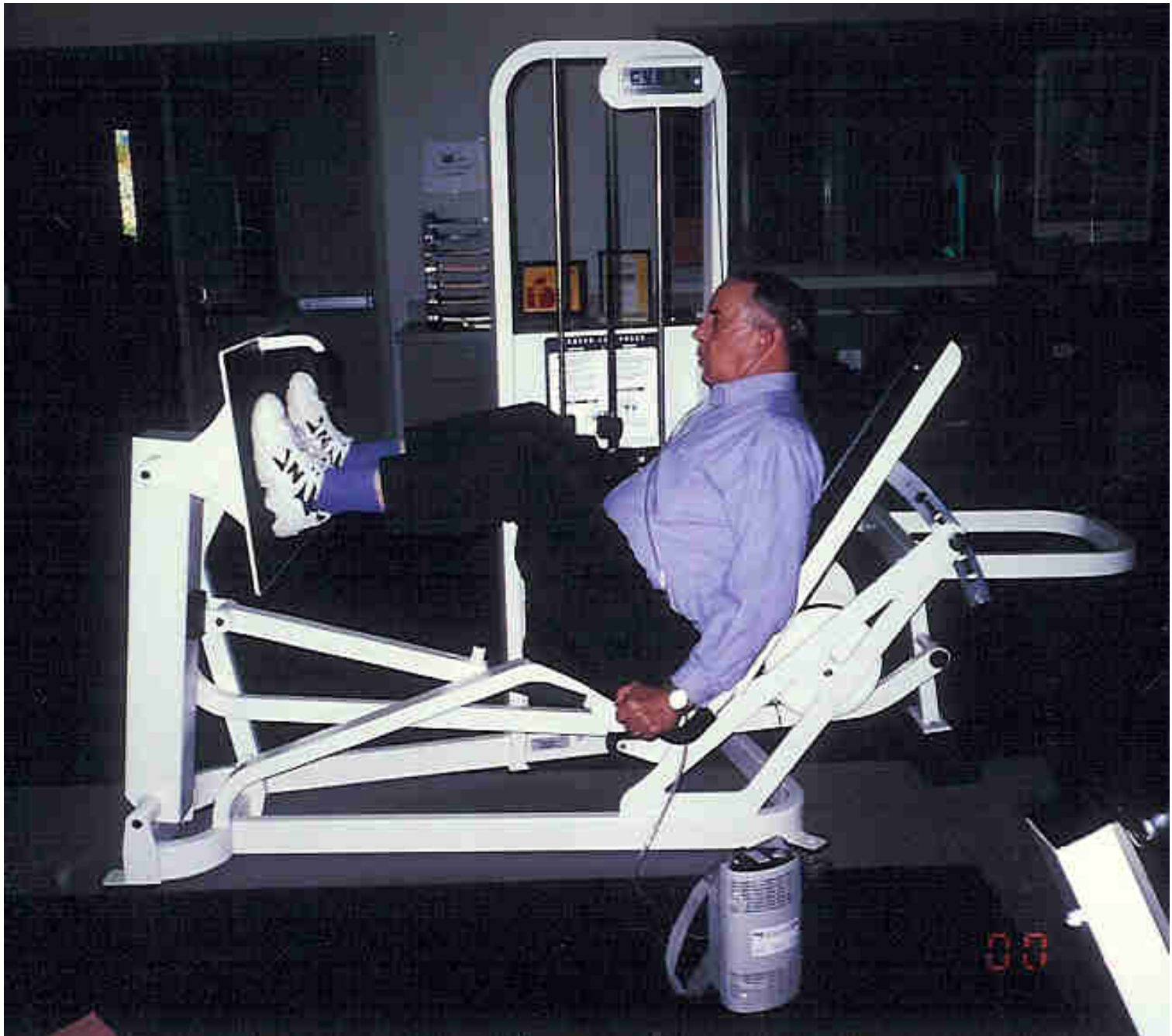
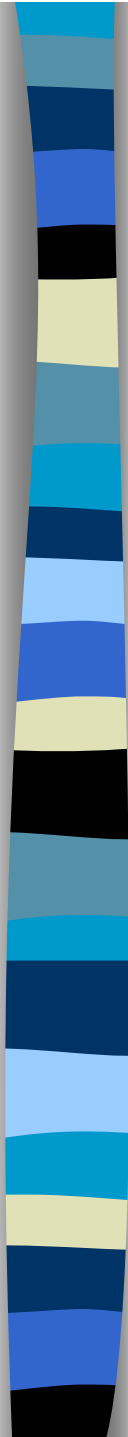


Strength

- n Lift small weights (one can of peas) in a plastic shopping bag,
 - 10 repetitions on each side (vary the muscle groups)
- n Bag handles can be placed over feet
- n Do sit-to-stand-to-sit exercises while watching TV
- n Join a health club that has both free weights and weight machines and do strength training 2-3 times per week



Helen Zechmeister, age 91





Endurance

- n Some activity for 30 minutes a day
- n Never use an elevator or escalator when stairs are available
- n Walk or bike on errands that would take less than 10 minutes to drive
- n Don't use remote control devices
- n Usual manual devices when possible (lawn mower, brooms, etc.)
- n Park a long distance from the main door when shopping

Fiatarone Singh



Heart Rates

- n $220 - \text{age} = \text{maximum heart rate}$
- n Target heart rate = 60-75% of maximum

$$220 - 70 = 150$$

$$150 \times 0.6 = 90$$

$$90 \text{ divided by } 6 = 15$$

So, a 70 yr-old starts with a target heart rate 10 second count of 15



Balance

- n Engage in exercise that requires balance (Tai Chi, dancing)
- n While standing in line or cooking stand on one leg (or with feet in tandem)
- n Try heel or toe walking for short distances (10 - 20 feet)
- n Stand up and sit down on chairs using one leg (with hand support if needed)



Stretching

- n Once a day
- n Stretch to limit of “sweet tension” (not pain)
- n Don’ t bounce
- n Hold the stretch to count of “20”
- n Neck, back, arms, hips, legs



Strategies for Success

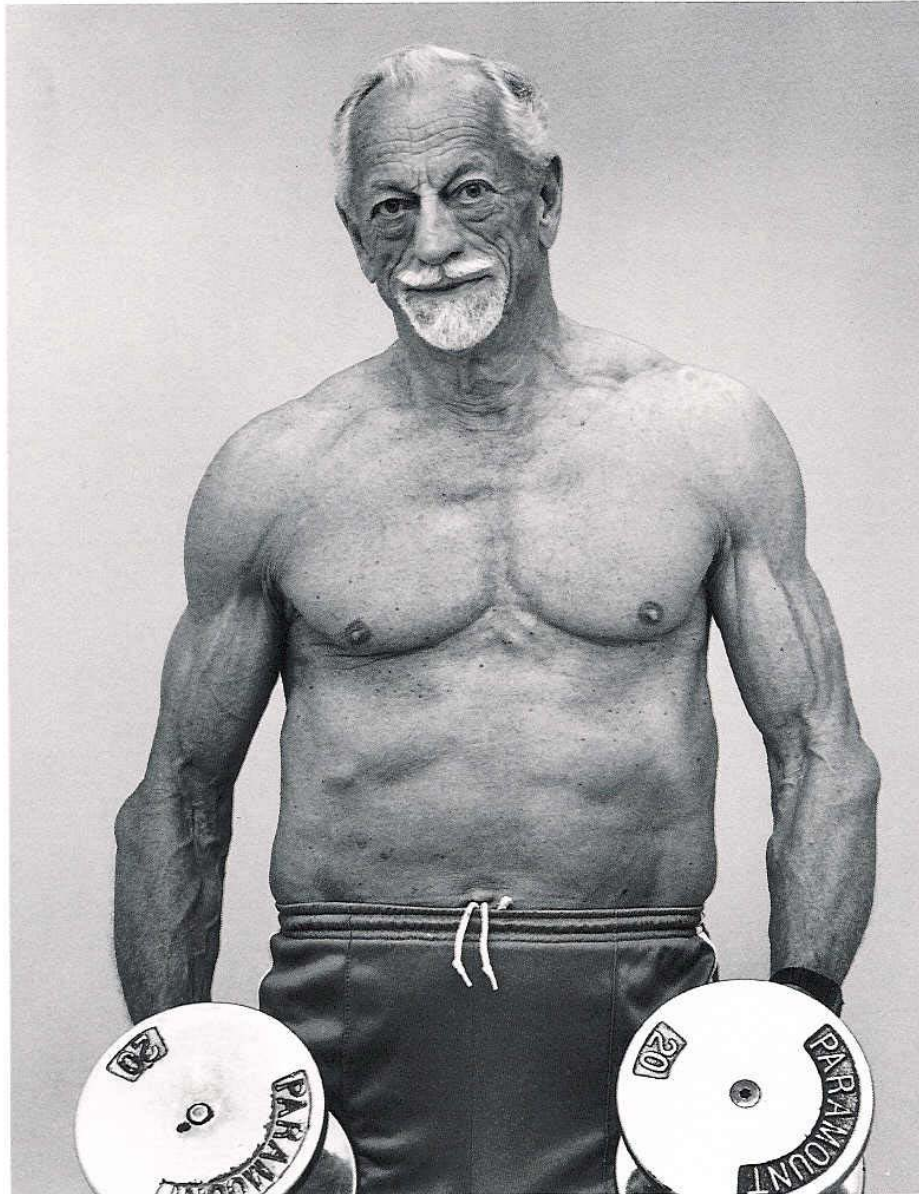
- n Make it FUN!
- n Start slowly
- n Set goals
- n Increase activities in daily life
- n Monitor how you're doing
- n Enlist support
- n Give yourself rewards
- n Learn from relapses
- n Know your resources
- n Lifelong orientation



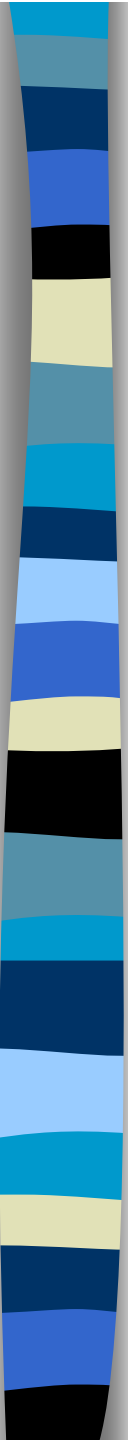


Reasons to See a Dr. First

- n Heart or lung disease
- n Significant arthritis
- n Certain medications (high blood pressure)
- n Prior problems with activity



John Turner, age 79





References

- n Fiatarone Singh M, Exercise to prevent frailty, Clin Geriatr Med, 2002;18:431-462
- n Dare to be 100, Walter Bortz, Fireside, 1996
- n Vitality and Aging, Fries & Crapo, WH Freeman, NY, 1981
- n Growing old is not for sissies, Etta Clak, Pomagranate Books, Petaluma, 1990
- n www.nih.gov/nia/health/pubpub/exercise.htm