





Introduction

- ↑ sedentary workplace
- ↑ sedentary recreation - TV and surfing the Net
- Inactivity is a major health risk factor
- Steepest ↓ in physical activity in North Americans occurs in the teenage years
- Health professionals have a very important role to play



What is Active Living?

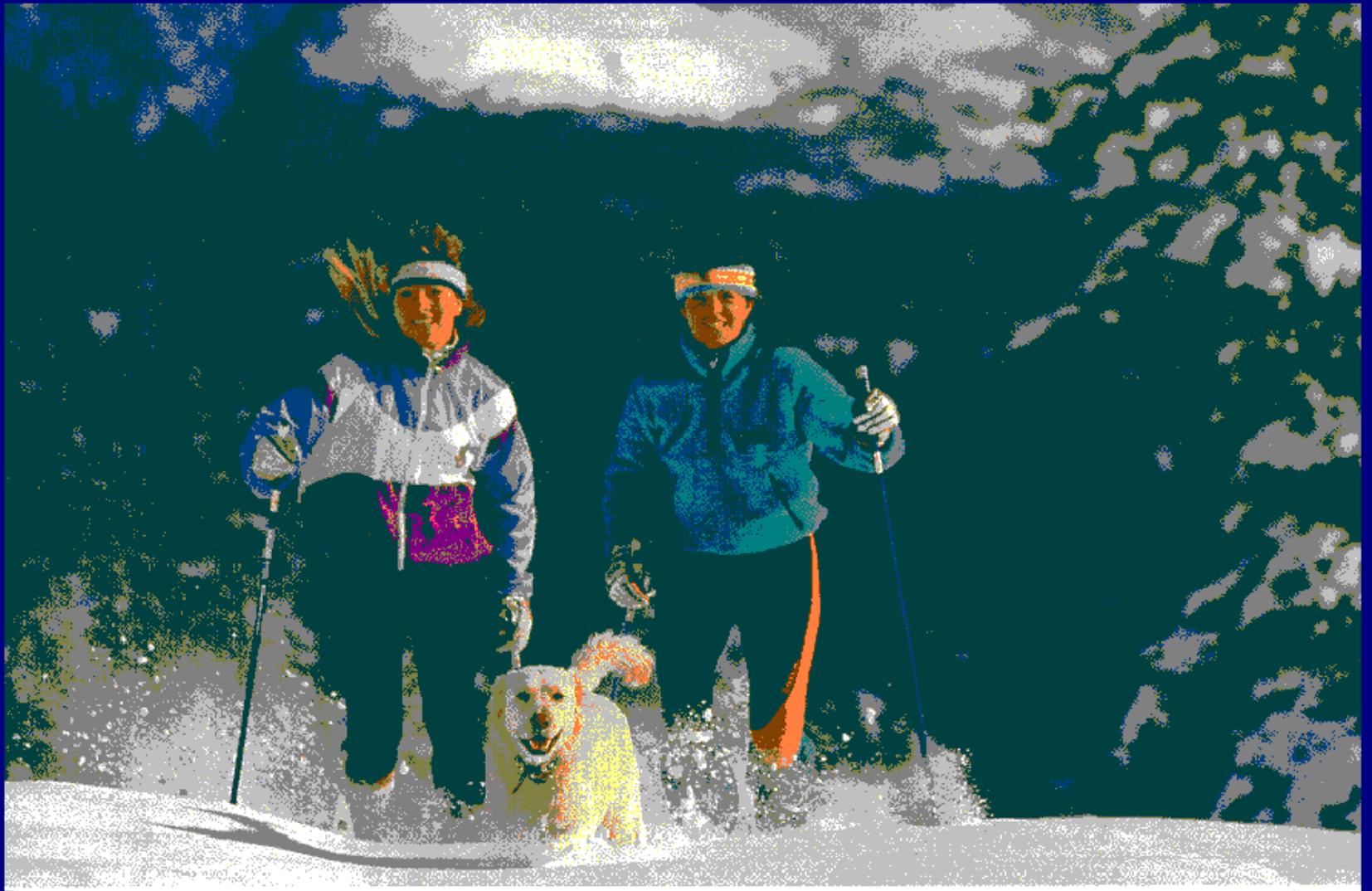
- Active Living - anything that requires a person to be physically active!
- Includes - mowing lawns, biking to work, walking the dog, etc.
- Threshold level of activity for health benefits
- Minimum need - 30 minutes of moderately vigorous exercise 3- 4 x week
- Only 25% of North Americans meet the threshold levels



What is Active Living?

- Active living involves making smart choices
- It does not require facilities, equipment, etc.
- It is available to everyone
- It should not be a near death experience

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Why be Active?

- Inactivity - a major risk factor for all cause mortality
- Body designed so that you “Use it or Lose it”
- Older people are particularly vulnerable to the deleterious effects of inactivity
- Good health is more than the absence of disease
- Good health is a positive state of mental, physical, social and spiritual health



What Benefits?

- Regular physical activity offers 2 major groups of benefits:

1. Health Improvement

2. Disease Prevention



Specific Benefits of Exercise



Cardiovascular benefits

- Inactivity is now recognized as a major independent risk factor for CAD
- Myocardial infarction and stroke currently account for 50% of the deaths in North America
- Those who survive are often significantly disabled



Cardiovascular Benefits

- Improved lipid profiles:
 - ↓ Total cholesterol
 - ↓ Triglycerides
 - ↓ Low density lipoprotein (LDL)

} **Bad Fats**
- ↑ High density lipoprotein (HDL)

} **Good Fat**



Cardiovascular benefits

- ↓ blood pressure - systolic and diastolic
- ↓ heart rate at rest and submaximal exercise
- ↓ atherosclerotic plaque size
- ↓ risk of cardiac arrhythmia's
- ↑ stroke volume
- ↑ cardiac reserve



Cardiovascular Benefits

- ↑ arteriovenous oxygen difference
- improved coronary endothelial cell function
- improved blood rheology
- change in clotting factor function
- possible collateral vessel development



Mental Health Benefits

- ↑ incidence of mental health problems
- Mental health benefits come quicker than the physical benefits
- Improved mental health is greatest health benefit exercise offers to our youth
- For mild to moderate depression exercise is as effective as psychotherapy
- Exercise can be an excellent stress management tool
- Many psychosocial benefits - including fun!



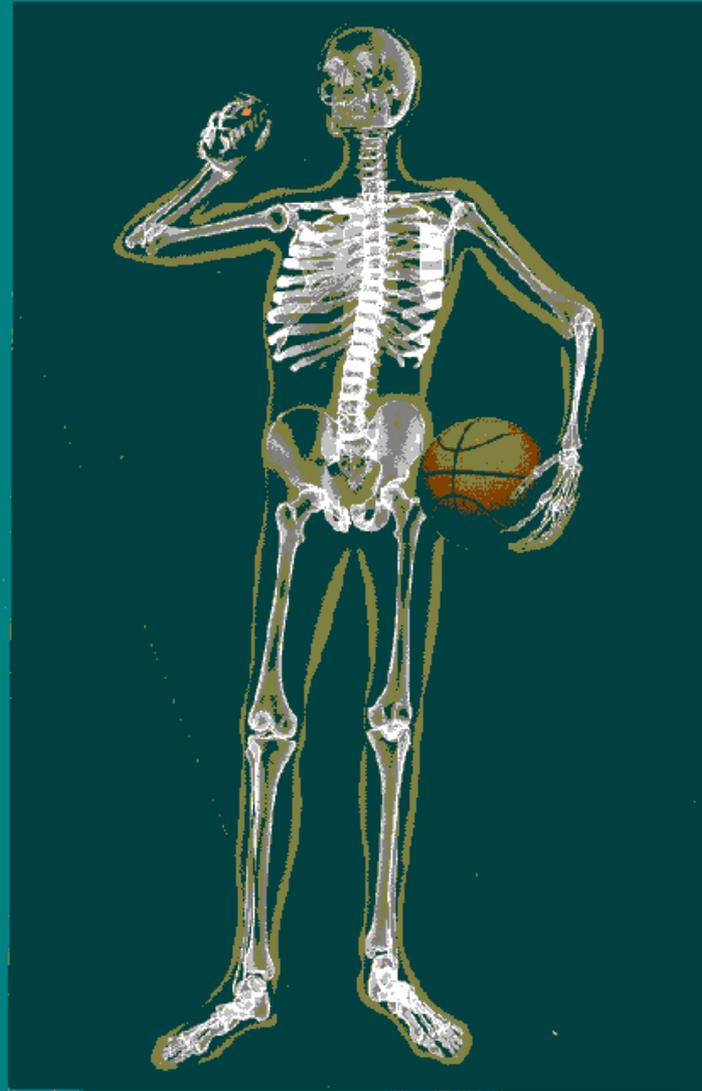
Mental Health Benefits

- Depression - moderate ↓
- Anxiety - small-moderate ↓
- Panic disorder - small ↓
- Energy - large ↑
- Self esteem - small-moderate ↑
- Positive affect - small-moderate ↑



Mental Health Benefits

- ↑ concentration
- ↑ memory
- ↑ learning capacity
- ↑ creativity
- ↑ problem solving ability
- ↑ sleep quality
- ↑ discipline





Bone Health Benefits



- Osteoporosis is:
- a major health problem world wide
- living longer and sedentary lifestyles will ↑ incidence
- 1 in 5 women over 50 in North America are affected
- fractures account for billions of dollars in health care costs
- causes considerable pain, disability and mortality



Bone Health Benefits

- Exercise - important treatment in war against osteoporosis
- Bones respond to 2 types of physical load:
 - 1. **Gravitational loads** - walking and running
 - 2. **Traction loads** - resistance type exercise
- Exercise improves proprioception and ↓ falls
- Life long activity will build a bone mass reserve
- For children - exercise may be more important for bone growth than milk



Muscle Benefits

- Muscle tissue is incredibly important
- Aging and inactivity result in significant muscle loss after the age of 60
- Functional implications:
 - ↓ strength
 - ↓ aerobic capacity
 - ↓ joint ROM
 - ↓ mobility
 - ↓ cardiac capacity
 - ↓ resting metabolic rate
 - ↓ work capacity
 - ↓ independence



Muscle Benefits

- Regular muscle use improves:
 - Muscle mass
 - Vascularity
 - Biochemical functioning
 - Recruitment patterns
- Bottom line: muscle is critical and exercising it is essential



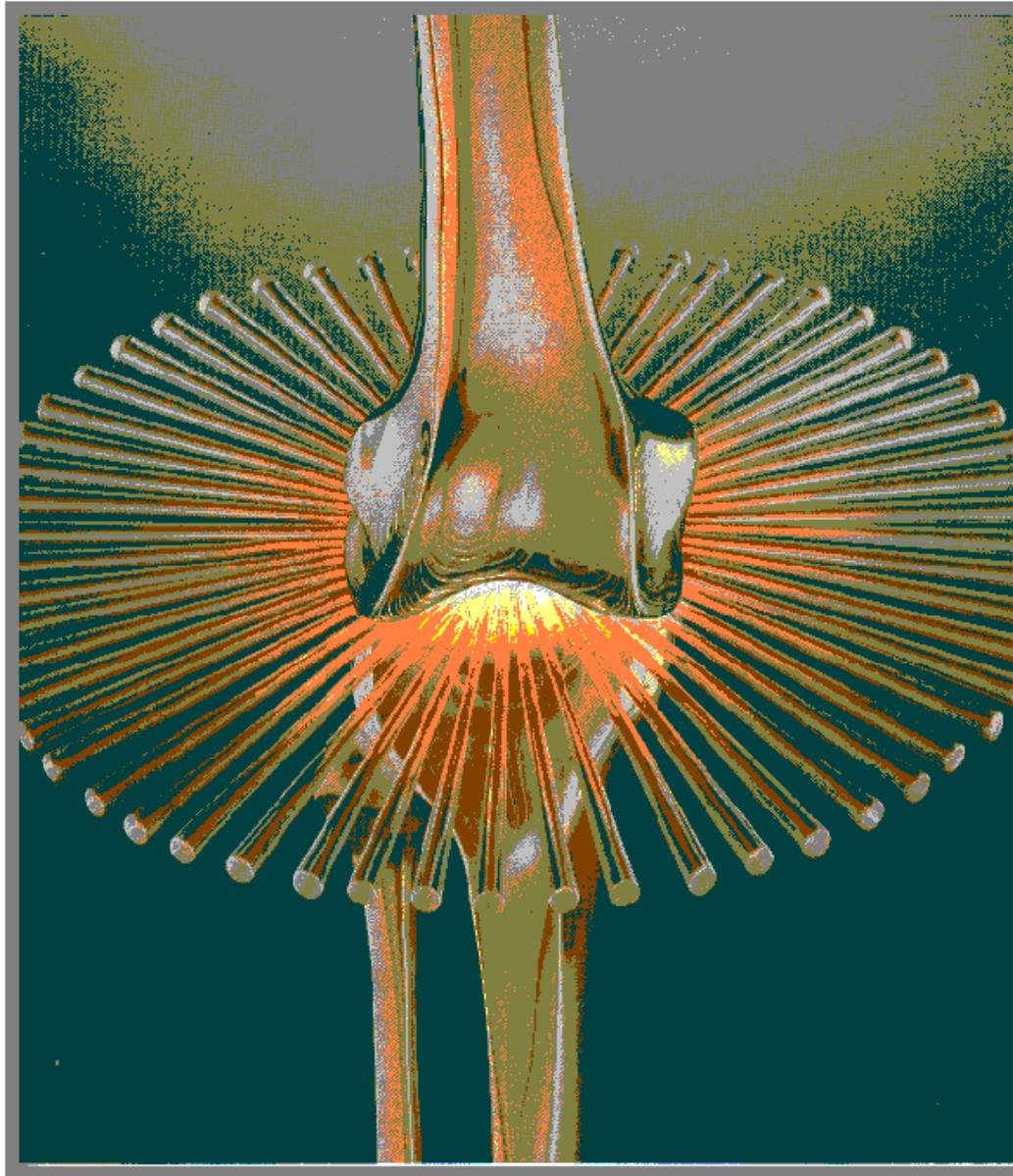
Healthy Body Weight

- WHO - obesity is a global epidemic!
- Fast food and inactivity are the major causes
- Obesity is a major risk factor for CAD
- Obesity is also a major factor in:
 - **NIDDM**
 - **Hypertension**
 - **Sleep apnea**
 - **↓ longevity**
 - **Osteoarthritis**
 - **Cancer**
 - **Hyperlipidemia**



Healthy Body Weight

- WHO - BMI between 18.5 and 24.9 associated with best health
- Eating well and exercising regularly are still the best way to maintain a healthy body weight



Joint Health Benefits

- Osteoarthritis is a major source of pain and disability
- **Misconception:** resting affected joints is the best treatment
- Research shows arthritic joints cause less pain and disability when regularly used



Joint Health Benefits

- mechanisms by which exercise helps include:
 - strengthening musculature around joint
 - improved joint lubrication
 - articular cartilage likely need regular loading to remain healthy



Asthma Benefits

- Include:
 - ↓ hospitalization
 - ↓ absenteeism from school and work
 - ↓ frequency of asthma attacks
 - ↓ requirement for medications
 - ↑ level of fitness



Diabetes Benefits

- Regular exercise will:
 - ↓ plasma glucose levels
 - ↓ fat stores
 - ↑ insulin sensitivity



Diabetes Benefits

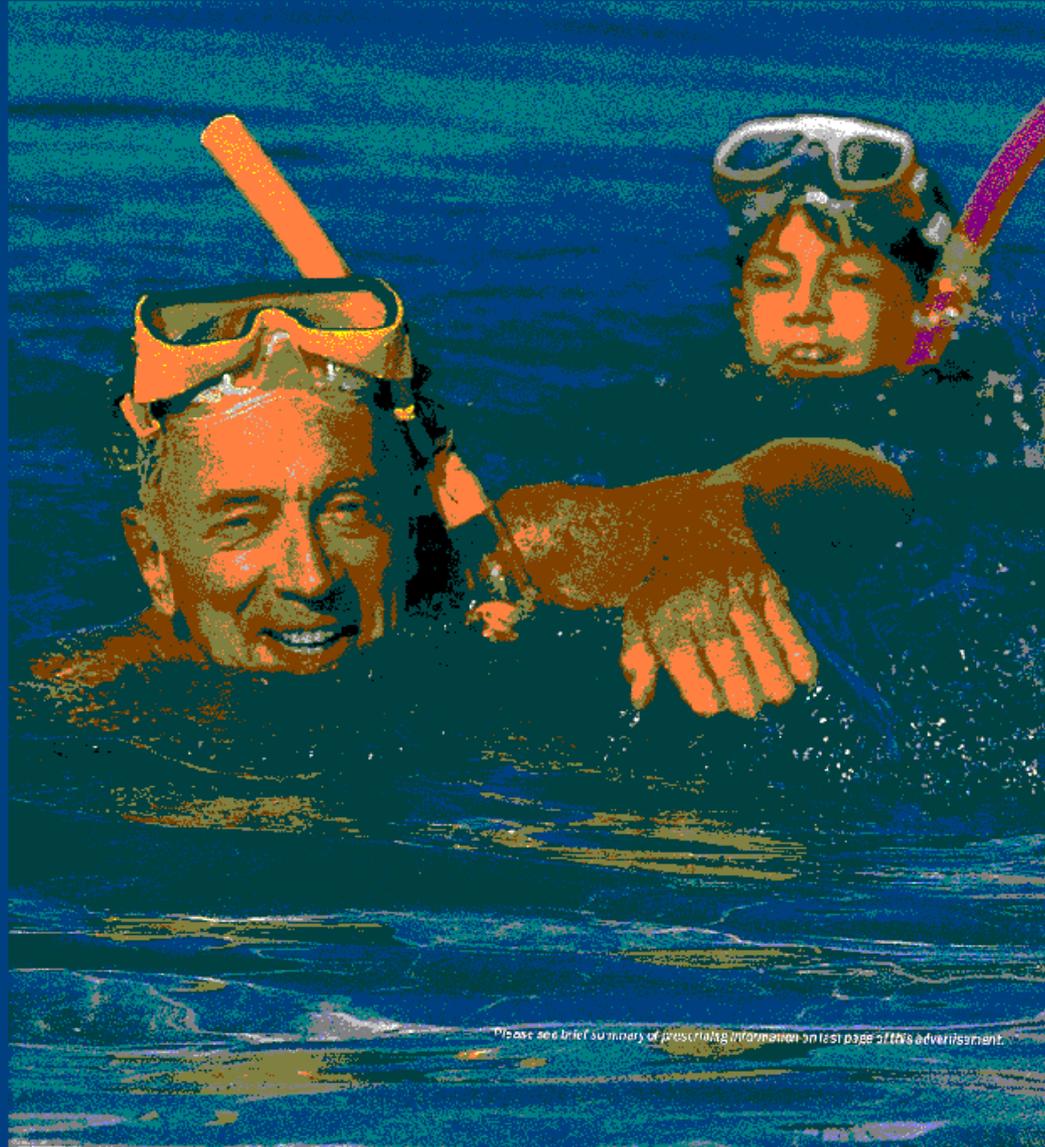
- For Non-insulin dependent diabetics:
 - Exercise improves the primary pathophysiologic defect - insulin resistance
 - Exercise also ↓ risk of death from cardiovascular disease



Diabetes Benefits

- For Insulin dependent diabetics:
 - Regular exercise ↓ daily insulin needs
 - Exercise also ↓ risk of death from cardiovascular disease

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Anti-Aging Benefits

- Exercise is a fountain of youth
- Regular exercise ↑ life span on average 3-4 years
- Regular exercise permits a higher level of function later into life



Anti-Aging Benefits

- “Exercise won’t necessarily add years to your life but it will add life to your years!”



Miscellaneous Benefits

- ↓ incidence of breast and colon cancer
- ↓ back pain
- ↓ injury rate
- ↓ workplace absenteeism
- ↑ workplace performance
- Promoting positive lifestyle changes
- Improved bowel function



Health Care Cost Benefits

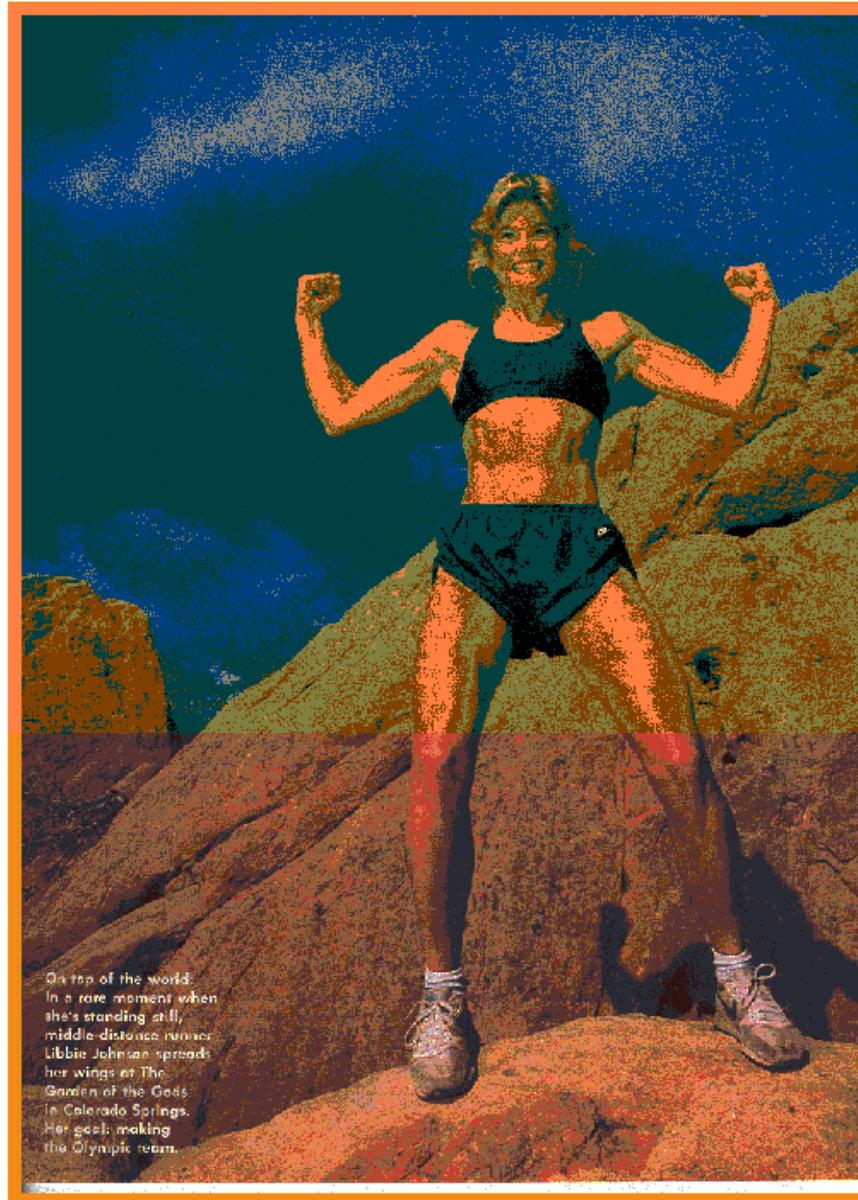
- Health care costs are rising world wide
- Regular physical activity can reduce direct health care costs in the inactive by 25% a year
- In North America this would amount to savings of over 83 billion dollars
- The indirect health care savings are estimated to be the same



Conclusion

- “Use it or Lose it”
- Exercise benefits cannot be saved up.
- Exercise is beneficial regardless of what age you begin.
- We don’t stop playing because we grow old....We grow old because we stop playing.
- Exercise is medicine!

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On top of the world:
In a rare moment when
she's standing still,
middle-distance runner
Libbie Johnson spreads
her wings at The
Garden of the Gods
in Colorado Springs.
Her goal: making
the Olympic team.

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Final Thought

- Ancient Chinese Proverb:
- “A person with no time for exercise must find time for illness”



Questions?

Mens Sana In Corpore Sano