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
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)

- ↑ High density lipoprotein (HDL)
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!

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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 \(\downarrow\) 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          ↓ cardiac capacity
  • ↓ aerobic capacity  ↓ resting metabolic rate
  • ↓ joint ROM         ↓ work capacity
  • ↓ mobility          ↓ 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
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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 \(\downarrow\) daily insulin needs

• Exercise also \(\downarrow\) risk of death from cardiovascular disease
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!
Final Thought

- Ancient Chinese Proverb:

“ A person with no time for exercise must find time for illness”
Questions?

Mens Sana In Corpore Sano