Exercise in Older Adults

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Presented by: ***Ontario's Geriatric Steering Committee***

Key Learnings

Exercise in Older Adults (S. Mathur)

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Key Learnings

- Physical activity and exercise can be achieved at all ages and levels of fitness
- Exercise has multiple physical and psychological benefits
- All older adults should be assessed and counselled about physical activity and exercise
- Resources are available to assist with physical activity counselling and referral

Common Causes

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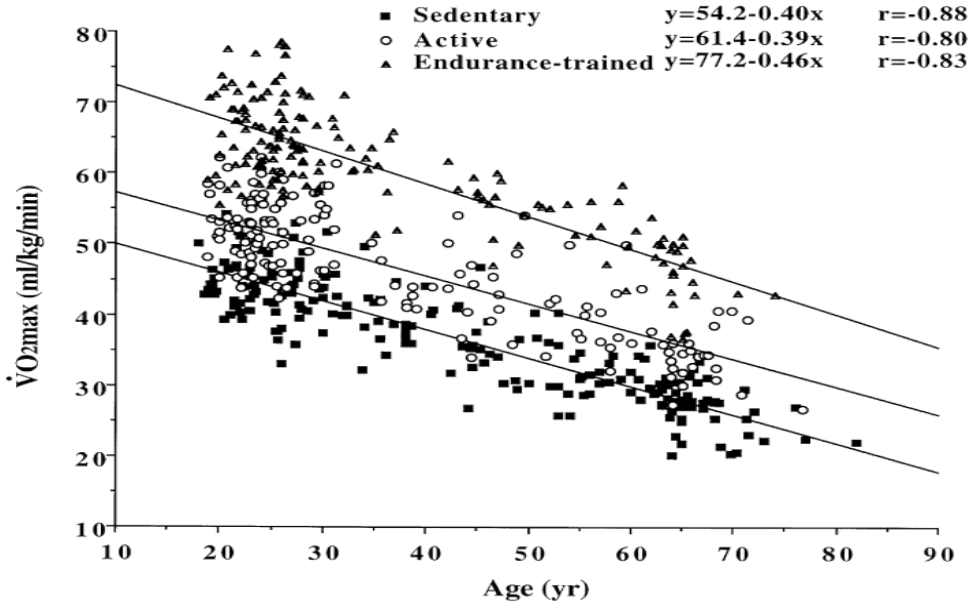
Decline in Aerobic Capacity with Age

With age, there is a natural decline in maximal aerobic capacity (VO_2max)

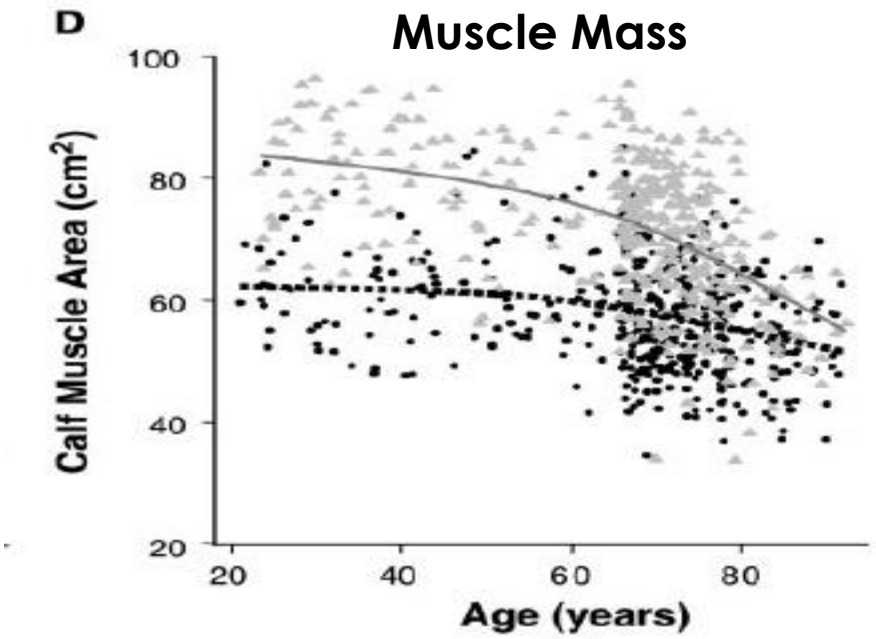


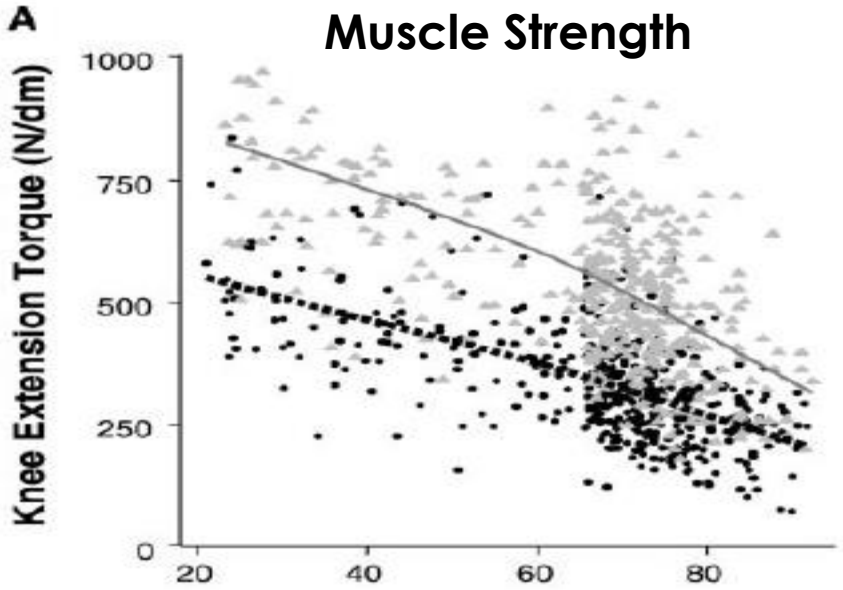
Wilson & Tanaka. American Journal of Physiology - Heart and Circulatory Physiology; 2000; 278 (3), H829-H834

Factors leading to decline in aerobic capacity with age

- Changes in the **heart**
  - example: lower maximum heart rate
- Changes in the **blood vessels**
  - example: less elasticity
- Changes in the **limb muscles**
  - examples: decline in oxidative capacity
  - Fewer mitochondria

Decline in Muscle Function with Age





Lauretani et al. Journal of Applied Physiology. 2003; 95: 1851-1860.

Factors leading to muscle changes

- Loss and atrophy of muscle fibers
- Increased fat infiltration of the muscle
- Reduced energy supply in the muscle
- Loss of nerves supplying the muscle fibers
  - less muscle recruitment
- Slower reaction time and movement speed

Benefits of Physical Activity and Exercise

- Improvement in **cardiovascular** function
- Reduced chronic disease **risk factors**
- Reduced **inflammation**
- Decreased **risk of falls**
- Prevention of **functional** limitations
- Improved **cognitive** function
- Enhanced feeling of **well being**
- Reduced **anxiety and depression**

Assessment

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General Screening for Exercise

- Screening for safety
- PAR-Q and PAR-Q+
- Identify any “red flags”
- Identify chronic conditions

Available from www.csep.ca

Exercise Capacity - Clinical Tests

- Self-paced walk tests
  - 400 m walk
  - 2 or 6 Minute Walk Test
- Functional Mobility Tests
  - 4 meter gait speed
  - 30 second sit to stand test
  - Timed Up and Go Test

Exercise Capacity – Clinical Tests

- Daily activity
  - pedometers, accelerometers
- Muscle Strength
  - Handgrip force (global strength)
- Balance
  - Berg Balance Scale
  - BESTest

Advanced Aerobic Exercise Testing

- Advised for individuals:
  - Embarking on a moderate to vigorous intensity exercise program
  - Diagnosed with cardiovascular, respiratory or metabolic conditions
  - Signs of symptoms indicative of disease

- Exercise testing lab
  - Treadmill or cycle test

Management

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Components of an Exercise Program

- Endurance activities
  - Increase heart rate
- Strengthening activities
  - Target muscles and bone
- Balance activities
  - Challenge balance and reduce falls risk
- Flexibility activities
  - Stretch muscles and improve range of motion

Canadian Physical Activity Guidelines for Older Adults *(www.csep.ca)*

Aerobic

- 150 minutes per week
- Bouts of 10 min or more

Strength

- 2 to 3 days per week
- Muscle and bone strengthening

Balance

- 2 to 3 days per week
- Improve balance and prevent falls

Exercise Resources

Go4Life®

A program of the
National Institutes of Health

https://go4life.nia.nih.gov/

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Implications for Practice
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Ask about exercise

- **Rapid Assessment of Physical Activity**

- 7 questions about the level of engagement in light, moderate or vigorous intensity physical activities

- Available from University of Washington Health Promotion Research Center

http://depts.washington.edu/hprc/rapa

Exercise is Medicine!

- Older adults should be counseled on appropriate levels of exercise and physical activity

- Physician recommendation for exercise is an important factor in uptake and adherence
  - Exercise is Medicine Canada
  - Canadian Physical Activity Guidelines for Older Adults

Your Prescription for Health
ExeRxcise is Medicine® Canada

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Starting an Exercise Program

- Start with low intensity such as walking
- Brief bouts of exercise (10 min), 2 to 3 times per day
- Use a pedometer – steps per day
- Keep heart rate within 20 beats above the resting heart rate
- Include exercises for strength and balance

Starting An Exercise Program

- Enjoyable activities and variety are key!
- Referral to community exercise programs
  - Yoga, Tai Chi, dance, Zumba GOLD®
- Chronic condition or risk factors?
  - Refer to exercise professional:
  - Physical therapist
  - Registered kinesiologist

Thank you!

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