



THE EXERCISE PRESCRIPTION: AN ESSENTIAL ELEMENT OF THE PRIMARY CARE VISIT

Margaret Johnston, MSN, RNP

Learning Objectives

- Review national statistics and trends
- Describe exercise benefits
- Examine essential steps in patient assessment and counseling
- Delineate four components of exercise prescription
- Address special population needs in preparing the exercise prescription
- Evaluate community and other resources

Current Physical Activity Recommendations

- 30-40 minutes/day moderate intensity PA, on most days of the week
- 150 minutes of moderate or 75 minutes of vigorous activity weekly
- 60 minutes per day for children
- Can be incorporated into all daily activities including work and leisure activities in short bouts of 10 to 15 minutes

US Department of Health & Human Services. *Physical Activity Guidelines for Americans*. <http://www.health.gov/paguidelines//guidelines/default.aspx>. Accessed January 7, 2015.

Current National Statistics: PA Adherence Rates

- 47 % of adults met PA guidelines for aerobic activity
- 22.4% of adults met the guideline goals for muscle strengthening
- 18.8% of adults 18 years old and over met both aerobic and muscle strengthening standards
- Approximately, 1/3 of adults do no exercise in their leisure time

Centers for Disease Control and Prevention. *Health United States, 2010*. <http://www.cdc.gov/nchs/data/hs/hs10.pdf>. 2011:260. Accessed January 7, 2015

Other National Data

- PA is less common among women than men
- PA participation declines with advancing age
- Non-Hispanic blacks and Hispanic adults more likely to be inactive than Non-Hispanic whites
- Higher education levels associated with PA guideline adherence

Summary of Major Research Findings

- Any physical activity is better than none
- Both aerobic and resistance exercise are helpful
- Many health risks are reduced and health outcomes improved
- Most benefits occur with at least 150 minutes of moderate activity
- Additional benefits with more frequent, longer lasting and more intense PA
- Benefits of PA far outweigh risks

US Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. <http://health.gov/PAguidelines.pdf/paguide.pdf>. 2008. Accessed January 8, 2015.

Health Benefits with Strong Evidence

CVD-Related Benefits

- Lower CAD, HTN and CVA risk
- Lower dyslipidemia risk
- Lower risk for metabolic syndrome and DM2
- Prevention of weight gain

Other Benefits

- Lower risk of early death
- Lower risk of breast and colon cancer
- Reduced depression
- Better cognitive function in older adults
- Improved fitness and sense of well-being

US Department of Health and Human Services. *2008 Physical Activity Guidelines for Americans*. <http://health.gov/PAGuidelines.pdf/paguide.pdf>. 2008. Accessed January 8, 2015.

Benefits of Increasing Exercise for the Aging Population

- Improved conditioning, strength, flexibility, and overall physical fitness
- Improved mobility and reduced onset of mobility-related disability
- Reduced risk of cardiovascular disease, thromboembolic stroke, hypertension, type 2 diabetes mellitus, osteoporosis, obesity, colon cancer, breast cancer, anxiety, depression, and cognitive decline

Benefits of Increasing Exercise for the Aging Population

- Reduced likelihood of falls and related injuries
- Possible decreased incidence and severity of functional limitations
- Improved patient outcomes in several chronic conditions, including mood disorders, dementia, chronic pain, congestive heart failure, stroke, constipation, and sleep disorders

Relevant Citations

- Hamer M, Lavoie, KL, Bacon SL. Taking up physical activity in later life and health ageing: the English longitudinal study of ageing. *Br J Sports Med* 2014; 48:230
- Mänty M, Heinonen A, Leinonen R, et al. Long-term effect of physical activity counseling on mobility limitation among older people: a randomized controlled study. *J Gerontol A Biol Sci Med Sci* 2009; 64:83.
- King AC, Guralnik JM. Maximizing the potential of an aging population. *JAMA* 2010; 304:1944
- Morey, M.C. (Oct 20, 2014). Physical activity and exercise in the elderly. UpToDate (Online).
- Morey MC, Sloane R, Pieper DF, et al. Effect of physical activity guidelines on physical function in older adults. *J AM Geriatr Soc* 2008; 56: 1873.
- Pescatello, L.S, Arena, R. et al.(Eds.). (2014). *ACSM's Guidelines for exercise testing and prescription* (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.
- Villareal DT, Chode S, Parimi N, et al. Weight loss, exercise, or both and physical function in obese older adults. *N Engl J Med* 2011; 364: 1218.

Value of Initiating Exercise for the Aging Population

- Benefits occur with initiation and maintenance of exercise
- Even previously sedentary who start to exercise as late as age 85 demonstrate a significant survival improvement
- Patients with physical limitations experience an attenuation of the onset of mobility-related disability
- Improved fitness with exercise has been noted even among institutionalized older adults

[Pahor M, Guralnik JM, Ambrosius WT, et al. Effect of structured physical activity on prevention of major mobility disability in older adults: the LIFE study randomized clinical trial. JAMA 2014; 311:2387.](#)

[Stessman J, Hammerman-Rozenberg R, Cohen A, et al. Physical activity, function, and longevity among the very old. Arch Intern Med 2009; 169:1476.](#)

Exercise is a free medicine available to just about anyone.



Starting the Process

- Office-based short intervention as the nexus of change
- Majority of patients have greatest number of visits with PCP
- Lost opportunity for patient education as many providers do not take the time to have this discussion

[Jacobson DM, Strohecker L, Compton MT, Katz DL. Physical activity counseling in the adult primary care setting: position statement of the American College of Preventive Medicine. Am J Prev Med 2005; 29:158.](#)

Cognitive-Behavioral Strategies – Class 1 Recommendations

- Goal setting (A)
- Self-monitoring (A)
- Frequent and prolonged contact (B)
- Feedback and reinforcement (A)
- Self-efficacy enhancement (A)
- Motivational interviewing (A)

[Artinian NT, Fletcher GF, Mozaffarian D, et al. Interventions to promote physical activity and dietary lifestyle changes for cardiovascular risk factor reduction in adults: a scientific statement from the American Heart Association. Circulation 2010; 122:406.](#)

The Five A Approach for Lifestyle Counseling

- Assess
- Advise
- Agree
- Assist
- Arrange

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.
Meriwether RA, et al. *Am Fam Phys*. 2008;77(8):1129-1136.

Assess

- Current exercise and PA level
- Awareness of exercise resources and health benefits
- Perceived barriers and confidence in ability to change
- Identification of one strategy to increase activity level

Advise

- Discuss risk factors/biochemical markers as a basis to increase activity
- Promote exercise as the best medicine for many problems
- Be specific about what behaviors will reduce risk factors

Agree

- Collaborate in goal setting
- Provide alternative ways to meet objectives
- Form a plan
 - Record in medical documentation
 - Have patient write down interim goals

Assist

- Take realistic stock of patient's situation
- Recount perceived barriers
- Offer several approaches and resources as solutions
- Be aware of evolving community, internet and digital resources

Arrange

- Make necessary referrals
- Provide information regarding resources and handouts
- Ensure follow up appointment
- Use friendly phone call or text to encourage change
- Review exercise plan and progress next visit

Health Screening Prior to PA Initiation

- CV event risk is increased during vigorous activity; however absolute risk of cardiac event is low in healthy people
- Exercise confers CV benefits that far outweigh risks for light to moderate intensity exercise programs
- Exercise testing poor predictor of CVD events in asymptomatic individuals
- Conflicting recommendations among major organizations

ACSM Recommendations

- Vast majority do not require exercise testing prior to initiating a moderate intensity PA program
- Use a self-guided screening tool such as the Physical Activity Readiness Questionnaire (PAR-Q) or the modified AHA/ACSM Health/Fitness Facility Preparticipation Screening Questionnaire

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

ACSM Recommendations for Adolescents and Adults

- Identify those with symptoms/signs that suggest CV, pulmonary or metabolic disease
 - Chest pain
 - SOB with mild exertion
 - Dizziness or syncope
 - Orthopnea/PND
 - Ankle edema
 - Arrhythmias or known heart murmur
 - Intermittent claudication

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

PAR-Q

- Has your healthcare provider ever said that you have a heart condition and that you should only do physical activity recommended by a healthcare provider?
- Do you feel pain in your chest when you do physical activity?
- In the past month, have you had chest pain when you were not doing physical activity?
- Do you lose your balance because of dizziness or do you ever lose consciousness?
- Do you have a bone or joint problem (for example, back, knee or hip) that could be made worse by a change in your physical activity?

Exercise is Medicine. Health Care Provider's Action Guide.

http://www.exerciseismedicine.org/documents/HCPActionGuide_LR.pdf

Accessed February 15, 2015

PAR-Q Score Interpretation

All 'no' answers

- Can begin independent PA program
- Exercise rx based on 2008 guidelines
- Referrals to professional certified trainer or other fitness specialist

'Yes' answers

- Use clinical judgment to determine if person needs supervision or can be started slowly
- High risk individuals need to be referred to clinical exercise program such as cardiac or pulmonary rehabilitation

Exercise is Medicine. Health Care Provider's Action Guide.

http://www.exerciseismedicine.org/documents/HCPActionGuide_LR.pdf

Accessed February 15, 2015

ACSM Recommendations for Adolescents and Adults

- For those with diagnosed disease, determine who would benefit from a physical exam with exercise testing
- Individualize recommendations regarding starting and progression of exercise program to minimize potential for CV event
- Preparticipation health screening is different than a periodic medical exam

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

ACSM Recommendations for Older Adults

- Most do not require exercise testing prior to initiating a moderate intensity PA program
- Presence of multiple risk factors indicates need for physical exam and exercise testing for prior to strenuous exercise

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Risks of Exercise

- Musculoskeletal injury due to overuse most common
- Others:
 - Reactive airway disease
 - Arrhythmias
 - SCD/MI
 - Rhabdomyolysis

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Preparing the Exercise Prescription



Exercise Prescription and Referral Form

EXERCISE PRESCRIPTION & REFERRAL FORM



PATIENT'S NAME: _____ DOB: _____ DATE: _____
 HEALTH CARE PROVIDER'S NAME: _____ SIGNATURE: _____

PHYSICAL ACTIVITY RECOMMENDATIONS

Type of physical activity:	Aerobic	Strength
Number of days per week:		
Minutes per day:		
Total minutes per week*:		

*PHYSICAL ACTIVITY GUIDELINES

Adults aged 18-64 with no chronic conditions: Minimum of 150 minutes of moderate physical activity a week (for example, 30 minutes per day, five days a week) **and** muscle-strengthening activities on two or more days a week ([2008 Physical Activity Guidelines for Americans](http://www.acsm.org/physicalactivity)).
 For more information, visit www.acsm.org/physicalactivity.

REFERRAL TO HEALTH & FITNESS PROFESSIONAL

Name: _____
 Phone: _____
 Address: _____

 Web Site: _____
 Follow-up Appointment Date: _____
 Notes: _____

Exercise is Medicine. Health Care Provider's Action Guide.

http://www.exerciseismedicine.org/documents/HCPActionGuide_LR.pdf

Accessed February 15, 2015

Aerobic Activity

- 150 minutes or more of moderate intensity exercise per week
- 75 minutes or more of strenuous exercise per week
- Combination of the above to achieve targeted exercise volume
- Exercise may be accumulated in bouts of 10 minutes or more over the day

OHSU Cardiac Rehabilitation Exercise Progression Plan

- **FREQUENCY**

- Week 1-3: Three times per day
- Week 4-6: Two times per day
- Week 7-10: Once per day

<http://www.ohsu.edu/xd/health/services/heart-vascular/services/cardiac-rehabilitation/health-information/upload/CAR-3064469-Sample-Walking-Program.pdf>

OHSU Cardiac Rehabilitation Exercise Progression Plan

- **WEEK WARM-UP BRISK WALK COOL DOWN**
- **Week 1** - 5 minutes 5 minutes 5 minutes
- **Week 2** - 5 minutes 8 minutes 5 minutes
- **Week 3** - 5 minutes 11 minutes 5 minutes
- **Week 4** - 5 minutes 14 minutes 5 minutes
- **Week 5** - 5 minutes 17 minutes 5 minutes
- **Week 6** - 5 minutes 20 minutes 5 minutes
- **Week 7** - 5 minutes 23 minutes 5 minutes
- **Week 8** - 5 minutes 26 minutes 5 minutes
- **Week 9** - 5 minutes 29 minutes 5 minutes
- **Week 10** - 5 minutes 30 minutes 5 minutes

<http://www.ohsu.edu/xd/health/services/heart-vascular/services/cardiac-rehabilitation/health-information/upload/CAR-3064469-Sample-Walking-Program.pdf>

Resistance Training

- Major muscle group training 2-3 times weekly using 'whole body' approach
- Selected muscle group training using the 'split' approach 3 times weekly
- 48 hours between training the same muscle group

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Flexibility

- Exercises targeting major muscle groups
- 10-30 second hold to point of tightness effective for joint ROM enhancement in younger adults
- 30-60 second hold may benefit older adults
- Minimum 2-3 times weekly improves stretch hold; most effective when done daily

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Neuromotor Exercise – Functional Fitness

- Involves balance, coordination, gait, agility and proprioceptive training
- May be beneficial for young and middle age adults; definitively helpful for aging persons
- Optimal frequency not known; some support for 2-3 times a week for a total of 60 minutes or more a week

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Foam Rolling or Myofascial Release

- Perform both before and after exercise
- Engage all major muscle groups especially those that are painful or are cramping
- Roll slowly over each muscle group pausing for 2-5 seconds over muscle segments
- Pause for longer periods up to 30 seconds over muscle 'knots'
- Repeat twice over troublesome areas

<http://breakingmuscle.com/mobility-recovery/what-is-a-foam-roller-how-do-i-use-it-and-why-does-it-hurt>

Calf Rolling for Cramps/Knots



<http://breakingmuscle.com/mobility-recovery/what-is-a-foam-roller-how-do-i-use-it-and-why-does-it-hurt>

Iliotibial Band Rolling



<http://breakingmuscle.com/mobility-recovery/what-is-a-foam-roller-how-do-i-use-it-and-why-does-it-hurt>

Hip Extensor Rolling



<http://breakingmuscle.com/mobility-recovery/what-is-a-foam-roller-how-do-i-use-it-and-why-does-it-hurt>

Exercise Progression Summary

Variable	Sedentary Persons	Persons Who Engage in Irregular Physical Activity	Persons Who Exercise Regularly
Goals	Decrease health risks Become more active	Improve adherence and become a regular exerciser Optimize aerobic fitness	Maintain health Participate or compete in sports
Activities	Walking, lifestyle activity, cycling, low-impact aerobics, circuit weight training	Individual aerobic exercise, group exercise classes, resistance training, lifestyle activity	Individual and group aerobic exercise, competitive games and sports, resistance training
Exertion level	Moderate	Moderate to vigorous	Vigorous
Intensity of aerobic exercise	40% to 60% of maximum heart rate Keep constant	50% to 65% of maximum heart rate Gradually increase	65% to 85% of maximum heart rate Keep constant
Duration	15 to 20 minutes uninterrupted activity or 30 minutes of accumulated activity	20 to 60 minutes	30 to 60 minutes
Frequency	5 to 7 days per week	≥3 days per week	3 to 5 days per week
Progression	Start slow, progress gradually, increase duration by 5% per week	Increase frequency by 1 day per week	Maintain or increase current activity and training goals, consider risk for injury
Counseling style	Empathetic, supportive, encouraging	Praising accomplishments and problem solving with the patient	Informative

ExRx for the Aging Population



Exercise Program Components

- Aerobic exercise
- Muscle strengthening
- Flexibility
- Neuromotor exercise including balance

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Current AHA/ACSM Activity

Recommendations

- More intensity and longer exercise duration lead to greater health benefits
- Recommended aerobic activity levels are in addition to ADL
- 3 options:
 - Minimum of 30 minutes of moderate-intensity aerobic activity on five days each week
 - Minimum of 20 minutes of vigorous-intensity activity on three days each week
 - Combination of the two

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

[Nelson ME, Rejeski WJ, Blair SN, et al. Physical activity and public health in older adults: recommendation from the American College of Sports Medicine and the American Heart Association. Circulation 2007; 116:1094.](#)

Initiating Aerobic Exercise

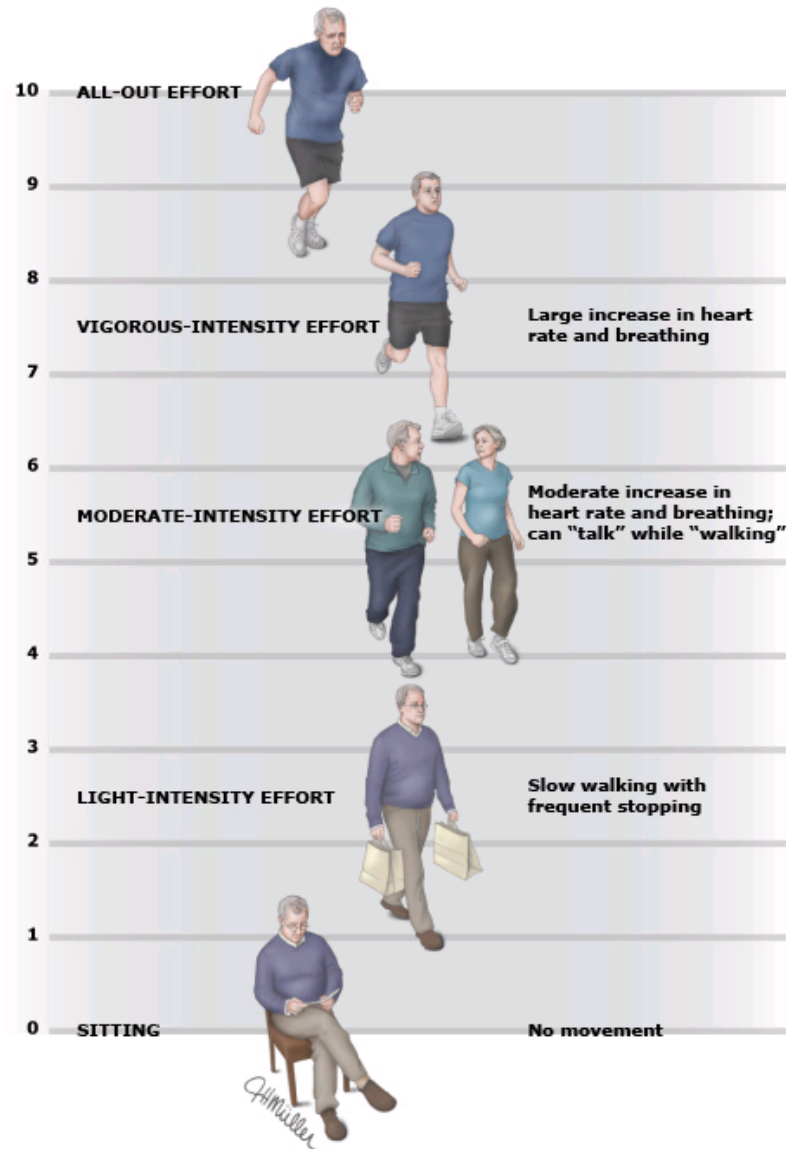
- Exercise can be spread throughout the day to achieve recommended activity levels
- Obese individuals may need 300 minutes of activity in addition to diet to manage weight control
- Chronically ill may not be able to achieve minimal levels of recommended activity but should be as active as possible

Assessing Exercise Intensity

- Use of absolute METS inappropriate for ageing population
- Self reported effort better for determining activity intensity
- Borg Scale
 - Moderate exertion rated 5-6/10; associated noticeable increase in respiratory and heart rate
 - Strenuous exertion rated 7-8/10 associated with large increase in heart and respiratory rate
 - Should be able to carry on conversation while exercising; if not, activity is too strenuous

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

10-point scale of perceived exertion



Scale reproduced and illustrated with permission from: Borg G. Psychophysical bases of perceived exertion. *Med Sci Sports Exerc* 1982; 14:377.

Muscle-Strengthening for Increased Performance

- Strengthening activities should be done at least two non-consecutive days per week
- Exercises should target 8 to 10 major muscle groups at an appropriate exertion level
- 10 to 15 repetitions of each exercise at a moderate to high level of intensity with gradually increase in resistance ideal
- Muscle soreness is normal at first and should subside in a few weeks
- More gradual incremental strengthening best for those with chronic pain to maximize tolerance and exercise adherence

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Muscle-Strengthening – Helpful Hints

- Initial weight should be one that an individual can lift about eight times
- When able to perform 10-15 repetitions, weight can be increased again until only 8 repetitions can be done
- Breathing should be normal while lifting weights, exhaling as the weight is lifted
- Movements should be slow through a repetition: two to three seconds to lift, hold for one second, and three to four seconds to return to the starting position
- Avoid locking the joints in a tightened position.

Flexibility

- Little research on impact on physical wellness but basis for performing all activities
- Helpful tips:
 - Do twice a week for at least 10 minutes
 - Perform after aerobic or strengthening activities after warm up
 - Breathe normally; do not bounce into a stretch.
 - Stretch slowly into the desired position and hold; hold for 10 to 30 seconds
 - Should feel a slight pull but should not stretch to the point of pain.

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Chest Stretch



<http://exerciseismedicine.org/YourPrescription.htm>

Thigh Stretch



<http://exerciseismedicine.org/YourPrescription.htm>

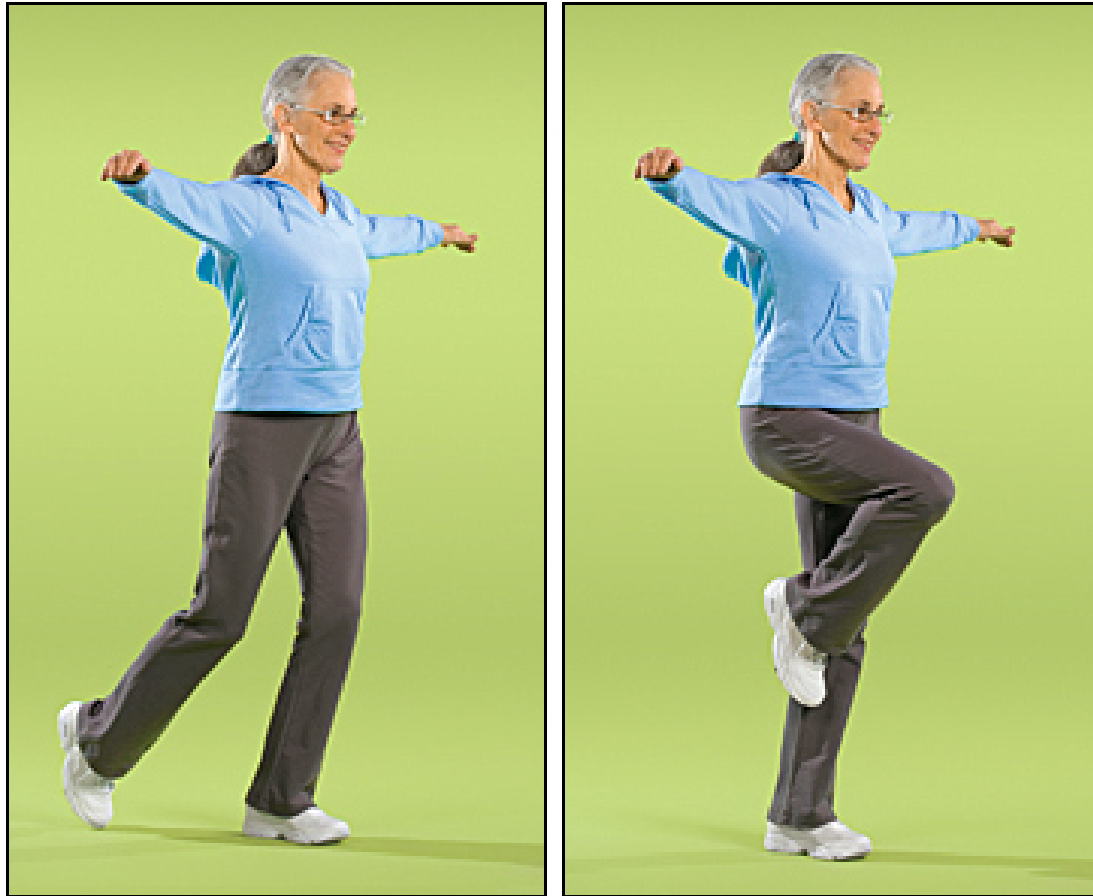
Neuromotor Exercise

- Balance problems common in elderly adults
- Balance exercise improve stability and may prevent falls and related injuries
- Participation in group classes improves stability and may prevent falls and associated injuries
- Selected activities:
 - Tai Chi
 - Gait pattern challenges such as heel-to-toe walking
 - One foot balancing to increase center of gravity awareness
 - Often combined with strengthening exercises

[Lin HW, Bhattacharyya N. Balance disorders in the elderly: epidemiology and functional impact. Laryngoscope 2012; 122:1858.](#)

[Sherrington C, Lord SR, Finch CF. Physical activity interventions to prevent falls among older people: update of the evidence. J Sci Med Sport 2004; 7:43.](#)

Neuromotor Exercise – Balance Walk



<http://exerciseismedicine.org/YourPrescription.htm>

Neuromotor Exercise – One Foot Stand



<http://exerciseismedicine.org/YourPrescription.htm>

Patients with Multiple Morbidities

- Chronic conditions increase with age
- Likely 50 percent of patients with diabetes will also have arthritis
- 30 percent will have coronary disease, or both.
- The American College of Sports Medicine's initiative, Exercise is Medicine provides patient handouts with specific exercise prescriptions available at:
<http://exerciseismedicine.org/YourPrescription.htm>

Obesity

- Start with non-weightbearing exercise
- Avoid high impact activity due to possible orthopedic stress
- Duration and frequency as tolerated
- Premeal exercise prior to breakfast best due to increase in lipolysis

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Arthritis

- Select exercises that minimize joint stress
- Start strengthening at low intensity; progress as pain level permits
- Emphasize flexibility and full ROM
- Avoid during acute flares
- Warn that joint pain may increase after activity; ice area to prevent inflammation
- Moderate physical activity if pain persists/work with pain med timing

Osteoporosis

- Standard PA recommendations apply but greater placed on weight-bearing, balance and strengthening activities
- Excessive weight bearing with the initiation of exercise may increase the risk of fractures
- Individuals with previous osteoporotic fractures require more individualized program
- Should avoid sudden movements, jarring or twisting movement and heavy lifting
- Best to consult a professional therapist for activity plan after a fracture to relieve pain and regain mobility initially

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Diabetes

- Monitor blood sugar because hypoglycemia or hyperglycemia can occur with exercise
- Consume a meal 1-3 hours before exercising, administer insulin at least 1 hour before exercise, and, if the blood glucose level is greater than 250 mg/dL, check urine for ketones
- Supplement energy (caloric) intake every 30 minutes and maintain adequate fluid replacement
- Monitor the glucose level, increase energy (caloric) intake for 12-24 hours following activity, and expect postexercise hypoglycemia; thus, appropriately adjust insulin dosing

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Functionally Limited or Frail

- Go slow and start low, e.g., walk for 5 minutes daily to start
- Training specificity – focus on doing a necessary activity with confidence
- Even modest activity/strengthening helps improve functional capacity
- Dose response – association between intensity and outcome
 - Higher intensity will yield better outcomes
 - Older institutionalized adults had improvement in knee strength, six-minute walk distance, chair stands, stair climbing with low-intensity training

Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for exercise testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.

Aging Adult Exercise Recommendation Bibliography

- Dubbert PM, Morey MC, Kirchner KA et al. Counseling for home-based walking and strength exercise in older primary care patients. *Arch Intern Med.* 2008; 168:979.
- Hamer M, Lavoie KL, Bacon SL. Taking up physical activity in later life and healthy ageing: the English longitudinal study of ageing. *Br J Sports Med.* 2014; 48: 239.
- Pescatello, L.S, Arena, R. et al.(Eds.). (2014). ACSM's Guidelines for testing and prescription (9th ed). Baltimore, M.D.: Wolters Kluwer/Lippincott Williams & Wilkins.
- Morey, M.C. (Oct 20, 2014). Physical activity and exercise in the elderly. UpToDate (On-line). Available : <http://www.uptodate.com/contents/physical-activity-and-exercise-in-older-adults?>
- Villareal DT, Chode S, Parimi N, et al. Weight loss, exercise, or both and physical function in obese older adults. *N Engl J Med.* 2011; 364: 1218

ExRx.Net

- Exercises in all four categories of exercise
- Calculators for exercise testing and progression
- Suggests programs for specific exercise goals
- Patient friendly handouts and links to trackers

Exercise is Medicine

- Exercise is Medicine
 - Address: <http://exerciseismedicine.org>
 - Resources
 - Health Care Provider Toolkit
 - Physical Activity Readiness Questionnaire
 - Risk Assessment Form
 - Risk Management Decision Tree
 - Exercise /Prescription and Referral Form
 - Links to local resources

Other Resources

- Community resources
- Walking programs
 - For patients:
http://www.startwalkingnow.org/why_start_walking.jsp
 - For organizations:
[http://www.heart.org/HEARTORG/GettingHealthy/WorkplaceWellness/Workplace-Wellness UCM 460416 SubHomePage.jsp](http://www.heart.org/HEARTORG/GettingHealthy/WorkplaceWellness/Workplace-Wellness_UCM_460416_SubHomePage.jsp)

Leveraging for Success

- Make it mutual
- Individualize the prescription
- Make it real; life does get in the way
- Practice what you preach

Take Home Message

- Exercise as a free medicine is available to just about everyone
- An exercise prescription provides the structure so that the patient can realize real health benefits no matter what their baseline condition



QUESTIONS?