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Functional Assessment and Exercise for the Aging Adult

Part 1: Introduction to Exercise

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Note to Participants: There are interactive pop-up questions throughout this lecture. If you choose to pause the lecture and return at a later time, a natural break time would be after answering the interactive questions. (You are able to pause at any time and the presentation will "remember" where you were. It's just a more natural time to pause after the interactive questions.) For your convenience, this outline reflects where/when within the lecture the interactive questions occur.

This lecture has 51 slides and is 46 minutes in duration.

- I. Introduction
 - A. Components of the exercise prescription
 - B. The evidence of strengthening exercise
 - C. Slippery slope of aging
 - D. Evidence of functional loss

Interactive Questions – slide 17 @ 18 minutes

- II. Physical stress theory
 - A. Tissues response to mechanical stress
 - B. Components of mechanical stress
 - C. Types of mechanical stress

Interactive Questions – slide 25 @ 25 minutes

- III. Principles of exercise intervention
 - A. Overload
 - B. Task specificity

Interactive Questions – slide 28 @ 27 minutes

- IV. Overload
 - A. Intensity, duration, frequency and speed
 - B. Outcomes based on overload by intensity
 - C. Intensity and older adults, frail adults
 - D. Frequency

Interactive Questions – slide 44 @ 36 minutes

- V. Specificity
 - A. Relationship between strength and function
 - B. Specificity of seed in training (power)
 - C. Tasks specificity

Notes

Bibliography

1. Gill TM, Baker DI, Gottschalk M, et al. A prehabilitation program for physically frail community-living older persons. *Arch Phys Med.* 2003;84(3):394-404.
2. Janssen I, Shepard DS, Katzmarzyk PT, Roubenoff R. The healthcare costs of sarcopenia in the United States. *J Am Geriatr Soc.* 2004;52:80-85.
3. Baumans T, VanPuyvelde K, Mets T. Sarcopenia and functional decline: pathophysiology, prevention and therapy. *Acta Clin Belg.* 2009;64(4):303-16.
4. Fried LP, Bandeen-Roche K, Chaves PH, Johnson BA. Preclinical mobility disability predicts incident mobility disability in older women. *J Gerontol A Biol Sci Med Sci.* 2000;55(1):M43-52.
5. Weiss CO, Hoenig HH, Varadhan R, Simonsick EM, Fried LP. Relationship of cardiac, pulmonary, and muscle reserves and frailty to exercise capacity in older women. *J Gerontol A Biol Sci Med Sci.* 2009 Oct 12 [epub ahead of print].
6. Evans WJ. Effects of exercise on senescent muscle. *Clin Orthop Rel Res.* 2002;1(403) (suppl):S211-S220.
7. Shumway-Cook A, Patla AE, Stewart A, Ferrucci L, Ciol MA, Guralnik JM. Environmental demands associated with community mobility in older adults with and without mobility disabilities. *Phys Ther.* 2002;82(7):670-81.
8. Schwartz RS. Sarcopenia and physical performance in old age: introduction. *Muscle Nerve.* 1997;5 (suppl):S10-2.
9. Fiatarone Singh MA. Exercise comes of age: rationale and recommendations for a geriatric exercise prescription. *J Gerontol A Biol Sci Med Sci.* 2002;57A(5):M262-M282 .
10. Cress, M.E., et al. Best practices for physical activity programs and behavior counseling in older adult populations. *J Aging Phys Act.* 2005;13(1):61-74.
11. Cress ME, Buchner DM, Prohaska T, et al. The association between physical function and lifestyle activity and exercise in the health, aging and body composition study. *J Am Geriatr Soc.* 2004;52(4):5029.
12. Mayson DJ, Kiely DK, LaRose SI, Bean JF. Leg strength or velocity of movement: which is more influential on the balance of mobility limited elders? *Am J Phys Med Rehabil.* 2008; 87(12):969-976.
13. Roth SM, Ferrell RF, Hurley BF. Strength training for the prevention and treatment of sarcopenia. *J Nutr Health Aging.* 2000;4(3):143-155.
14. Krebs, DE, Scarborough DH, McGibbon CA. Functional versus strength training in disabled elderly out patients. *Am J Phys Med Rehabil.* 2007;86(2):93-103.

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15. Cauley JA, Lui LY, Stone KL, et al. Longitudinal study of changes in hip bone mineral density in Caucasian and African American women. *J Am Geriatr Soc.* 2005;53(2): 183-189.
 16. Carabello RJ, Reid KF, Clark DJ, Phillips Em, Fielding RA. Lower extremity strength and power asymmetry assessment in healthy and mobility-limited populations: reliability and association with physical functioning. *Aging Clin Exp Res.* 2009 Nov 25 [epub ahead of print].
 17. Rikli RE, Jones CJ. *Senior Fitness Test Manual.* Champaign, IL: Human Kinetics; 2001.

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