

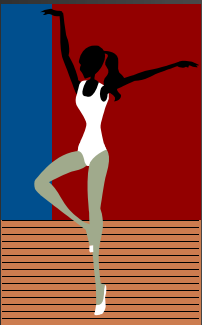


Balance

## Facts on Balance



Falls are a serious problem for the elderly.  
(1)



Balance training can reduce falls and  
increase confidence in mobility.  
(2)

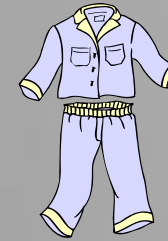
Balance is important for many athletic  
movements.  
(3)

An injury is less likely to be re-injured  
with the addition of balance training  
during rehab.  
(4)



# Introduction to Balance program

Wear comfortable clothes



Perform Balance! in bare feet  
and on a flat surface



Build up to the suggested time slowly



30 seconds with eyes open

20 seconds with eyes closed

(Only perform eyes closed exercises if you feel  
stable and are not dizzy.)

Alternate legs for each exercise

Master each exercise before moving on  
to the next one



If you feel dizzy or lose your balance:  
stop the exercise and consult your  
healthcare provider.

# Preventing Falls and Injury

- ▶ To reduce the risk of falls and injury and to complement the specific balance exercises presented in this program we recommend:
- ▶ Live actively
- ▶ Engage in regular exercise
- ▶ Perform postural exercises to maintain upright posture
- ▶ Eat a balanced, healthful diet with adequate levels of protein, calcium, and vitamin D
- ▶ Keep hydrated
- ▶ Avoid overuse of sedatives
- ▶ Check with your health care provider before beginning the exercises especially if you are elderly

(references 5-10)



Maintain a level  
pelvis – no  
arching of the  
low back



# Progression of Training:

Move from supported to unsupported

Add head rotation

Add head extension

Balance with eyes open

Balance with eyes closed



Single leg standing with support





Single leg standing with head rotated to the standing leg side with support





Single leg standing with head rotated  
to the lifted leg side with support



**Single leg standing without support**  
(only perform this series of unsupported exercises if you are free from balance issues)



Single leg standing with head rotated to the standing leg side without support



Single leg standing with head rotated to the lifted leg side without support



Single leg standing with head  
extended without support



Single leg standing without  
support and eyes closed  
(only perform this series of eyes-closed  
exercises if you are free from balance issues)



Single leg standing with head rotated to the standing leg side without support and eyes closed





Single leg standing with head rotated to the lifted leg side without support and eyes closed



Single leg standing with head extended  
without support and eyes closed

# Balance Recap

- ▶ Balance exercises can help increase stability, decrease risk for falls, and help prevent re-injury.
- ▶ Living actively, exercising regularly, and maintaining upright balanced posture can also help to improve balance.
- ▶ Stay hydrated, eat healthy, and avoid overuse of sedatives. (see selected references)
- ▶ Enjoy challenging yourself with Balance.

# Selected References

1. Speechley M, Tinetti M. Falls and injuries in frail and vigorous community elderly persons. *J AM GERIATR SOC* 1991, 39(1):46-52 PMID:1987256
2. Judge JO. Balance training to maintain mobility and prevent disability. *AM J PREV MED* 2003, 25(3) S2:150-6.
3. Emery CA, Cassidy JD, Klassen TP, Rosychuk RI, Rowe BH. Effectiveness of a home-based balance-training program in reducing sports-related injuries among healthy adolescents: a cluster randomized controlled trial. *CMAJ* 2005, 172(6) doi: 10.1503/cmaj.1040805
4. Close J, Ellis M, Hooper R, Glucksman E, Jackson S, Swift C. Prevention of falls in the elderly trial (PROFET): a randomised controlled trial. *LANCET* 1999, 353:93-7. doi:10.1016/S0140-6736(98)06119-4. PMID 10023893
5. Barnett A, Smith B, Lord S, Williams M, Baumand A. Community-based group exercise improves balance and reduces falls in at-risk older people: a randomized controlled trial. *AGE AGEING* 2003, 32(4):407-14.
6. Madureira MM, Takayama L, Gallinaro AL, Caparbo VF, Costa RA, Pereira RMR. Balance training program is highly effective in improving functional status and reducing the risk of falls in elderly women with osteoporosis: a randomized controlled trial. *OSTEOPOROS INT* 2007, 18:419-25. doi 10.1007/s00198-006-0252-5
7. Buchner DM, Cress ME, de Lateur BJ, Esselman PC, Margherita AJ, Price R, et al. The effect of strength and endurance training on gait, balance, fall risk, and health services use in community-living older adults. *J Gerontol A Biol Sci Med Sci* 1997, 52:218-24.
8. Sinaki M, Brey RH, Hughes CA, Larson DR, Kaufman KR. Significant reduction in risk of falls and back pain in osteoporotic kyphotic women through a spinal proprioceptive extension exercise dynamic (SPEED) program. *Mayo Clinic Proceedings* 2005, 80:849.
9. Carter ND, Khan KM, McKay HA, Petit MA, Waterman C, Heinonen A, et al. Community-based exercise program reduces risk factors for falls in 65- to 75-year-old women with osteoporosis: randomized controlled trial. *CMAJ* 2002,167:997-1004. Erratum in: *CMAJ* 2003 168:152.
10. American College of Sports Medicine. Guidelines for Exercise Testing and Prescription, 5th ed. 1995, Baltimore: Williams and Wilkins, pp. 1-373.