



## Original Research Article

## Nordic walking in geriatric population – An evidence based seminar

Urvisha D Chavda<sup>1,\*</sup>, Chirag P Solanki<sup>1</sup>, Rahul M Chhatlani<sup>2</sup><sup>1</sup>School of Physiotherapy RK University, Rajkot, Gujarat, India<sup>2</sup>Faculty of Physiotherapy, Marwadi University, Gujarat, India

## ARTICLE INFO

## Article history:

Received 20-04-2021

Accepted 30-04-2021

Available online 17-05-2021

## Keywords:

Geriatric Population

Ageing

Nordic walking

## ABSTRACT

**Background:** Aging is an involuntary and inevitable process that causes progressive structural and functional loss in the body, such as deterioration of functional capacity, muscle mass and strength loss, loss of bone mass and delays in reaction time, which are risk factors that lead to a loss of autonomy and increased risk of falling. Nordic walking is an activity involving specially designed poles used to push against the ground with each stride for the purpose of activating the upper body while walking. It is more intensive form of walking using muscles of upper body and lower body. It is safe, feasible and beneficial form of exercise training in older adults.

**Method:** Evidences Reviewed from Literature search 2015-2021. It was taken from PubMed, Google scholar, Wiley online library.

**Conclusion:** It can be stated that nordic walking training helps to improve wellness, physical strength, flexibility, quality of life and functional balance. Nordic walking is a non expensive and feasible option to improve fitness in elderly people. Nordic walking can be included as exercise prescription for elderly and it is one of the best way for elders to stay healthy.

© This is an open access article distributed under the terms of the Creative Commons Attribution License (<https://creativecommons.org/licenses/by/4.0/>) which permits unrestricted use, distribution, and reproduction in any medium, provided the original author and source are credited.

## 1. Introduction

Aging is an involuntary and inevitable process that causes progressive structural and functional loss in the body, such as deterioration of functional capacity, muscle mass and strength loss, loss of bone mass and delays in reaction time, which are risk factors that lead to a loss of autonomy and increased risk of falling.

Elderly is defined as being 65years of age/older. (Land field et al. 2004).

## 1.1. Classification of elderly

1. Young- old
2. Middle- old
3. Old- old

\* Corresponding author.

E-mail address: [chirag.solanki@rku.ac.in](mailto:chirag.solanki@rku.ac.in) (U. D. Chavda).

Life expectancy has been increasing since 1970 because death rate for elderly aged 65 or older has decreased. Sarcopenic subjects more often experience tiredness during daily activity and there is increase risk of falling and are more prone to injuries. Physical activity can slow down the loss of skeletal muscle mass and function. It is impossible to prevent the decline of physical strength completely but appropriate physical activity can slow down speed of decline.

Nordic walking is an activity involving specially designed poles used to push against the ground with each stride for the purpose of activating the upper body while walking. It is more intensive form of walking using muscles of upper body and lower body. It is safe, feasible and beneficial form of exercise training in older adults.

Normal walking utilizes muscles of the lower half of body while nordic walking is a whole body activity that uses muscles of the back, arms, shoulder and neck. It reduces load on the lower body and helps people remain stable while

walking. This form of walking requires the use of many muscles to increase walking speed with poles.

Nordic walking is well known as a useful exercise that provide stability to people who are old or have orthopedic problems and balance problem. It is also useful in patient with knee osteoarthritis and obesity.

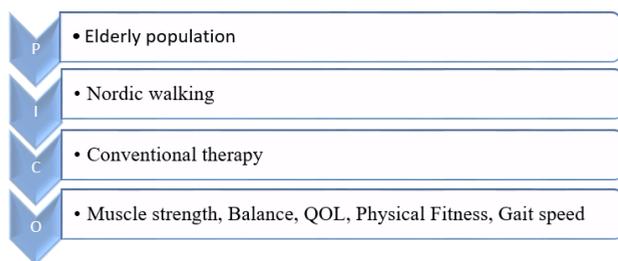
### 1.2. What is Nordic poles?

Poles with thumb hole, hand strap and full size rubber feet. It increases stability and protect against fall. Minimum length is 79cm and maximum length is 135cm.

### 1.3. Benefits of Nordic walking

1. Tones the upper and lower body at the same time
2. Uses 90% of the skeletal muscles
3. Burns up to 46% more calories than ordinary walking
4. Reduces the pressure on knees joints
5. used for neck, shoulder and back problems
6. Poles propel the walker along, making it easier to move faster than normal without feeling the effort.
7. It is one of the most effective cross training techniques for athletes and sportspeople who require ultimate cardiovascular and endurance conditioning.
8. It is easy to learn and to keep up.
9. It combines exercise with the nature which has been proven to boost mood.

## 2. Evidences



**Fig. 1:** PICO format is used

Bullo V, et al.,<sup>1</sup> conducted a study on Nordic Walking can be incorporated in the exercise prescription to increase aerobic capacity, strength and quality of life for elderly: a systematic review and meta-analysis.

1. Patient: Elderly people age >60 years
2. Intervention: Nordic walking
3. Control/comparison: Sedentary group
4. Outcome: Aerobic capacity, strength, qol, balance
5. Result: 15 studies was identified. Nordic Walking improved dynamic balance, muscle strength, aerobic capacity, and the quality of life.

6. Conclusion: Nordic Walking can be considered as a safe and accessible form of aerobic exercise for the elderly population, muscle strength, balance ability and quality of life.

Phyllis Wacker, et al.<sup>2</sup> conducted a study on Improvements in Functional Capacity from Nordic Walking: A randomized controlled trial among older adults.

1. Patient: Elderly people age >65 years
2. Intervention: Twice/ week for 9 week nordic walking
3. Control/comparison: Normal walking
4. Outcome: Strength, balance, flexibility
5. Result: In the Nordic walking group test scores were statistically significantly better after the intervention it showed improvement in chair-stand test, arm curls, 2-min step test, sit-and-reach test, back scratch, and up-and-go test.
6. Conclusion: NW has favorable effects on functional capacity in older people and is a suitable form of exercise for them.

Vida Janina, et al.<sup>3</sup> studied Effects of short-term Nordic walking training on sarcopenia-related parameters in women with low bone mass: a preliminary study.

1. Patient: Elderly people age >63 years.
2. Intervention: 3 times / week for 12 weeks nordic walking.
3. Control/comparison: Normal activity.
4. Outcome: Muscle strength, function, BMI.
5. Result: It induced a significant increase in skeletal muscle mass, strength index of the knee extensor, flexor, functional mobility, and functional performance and a significant decrease body mass index, and percent body fat in participants.
6. Conclusion: Short-term Nordic walking training induces positive changes in knee muscle strength and functional performance in women with low bone mass. This finding could be applied in clinical practice for intervention programs in women with osteopenia and osteoporosis.

Sara Ahmed, et al.,<sup>4</sup> conducted a study on Nordic walking for geriatric rehabilitation: a randomized pilot trial.

1. Patient: Elderly people age >65 years
2. Intervention: Nordic walking training
3. Control/comparison: Overground walking
4. Outcome: -gait speed
5. Result: NW and OW participants improved, respectively, 45 and 41 m on 6MWT and increased their gait speed by 0.14 and 0.07 m/s, respectively.
6. Conclusions: NW is 106% more effective in improving gait speed among elderly than OW.

Min Sun Song, et al.,<sup>5</sup> studied effects of nordic walking on body composition, muscle strength, and lipid profile in elderly women

1. Patient: Elderly women age >65 years
2. Intervention: 12 week nordic walking
3. Control/comparison: Normal walking
4. Outcome: Muscle strength, body composition
5. Result: There was a significant difference in the weight, grip strength, sit to stand, arm curl, and total cholesterol measurements between the groups. In addition, arm curl was significantly increased in the Nordic walking group compared to the normal walking group and the control group.
6. Conclusion: The results indicate that Nordic walking was more effective than normal walking in improving upper extremity strength.

### 3. Conclusion

1. It can be stated that nordic walking training helps to improve wellness, physical strength, flexibility, quality of life and functional balance.
2. Nordic walking is a non expensive and feasible option to improve fitness in elderly people.
3. Nordic walking can be included as exercise prescription for elderly and it is one of the best way for elders to stay healthy.

### 4. Source of Funding

No fund was needed.

### 5. Conflict of Interest

There was no personal or institutional conflict of interest for this study.

### 6. Acknowledgement

Would like to thank my family & friends and their support & guidance.

### References

1. Bullo V, Gobbo S, Vendramin B, Duregon F, Cugusi L, Blasio AD, et al. Nordic Walking Can Be Incorporated in the Exercise Prescription to Increase Aerobic Capacity, Strength, and Quality of Life for Elderly: A Systematic Review and Meta-Analysis. *Rejuvenation Res.* 2018;21(2):141–61.
2. Parkatti T, Perttunen J, Wacker P. Improvements in Functional Capacity From Nordic Walking: A Randomized Controlled Trial Among Older Adults. *J Aging Phys Act.* 2012;20:93–105. doi:10.1123/japa.20.1.93.
3. Ossowski ZM, Skrobot W, Aschenbrenner P, Cesnaitiene VJ, Smaruj M. Effects of short-term Nordic walking training on sarcopenia-related parameters in women with low bone mass: a preliminary study. *Clin Interv Aging.* 2016;11:1763–71. doi:10.2147/CIA.S118995.
4. Figueiredo S, Finch L, Mai J, Ahmed S, Mayo NE. Nordic walking for geriatric rehabilitation: a randomized pilot trial. *Disabil Rehabil.* 2013;35(12):968–75. doi:10.3109/09638288.2012.717580.
5. Song MS, Yoo YK, Choi CH, Kim NC. Effects of nordic walking on body composition, muscle strength, and lipid profile in elderly women. *Asian Nurs Res (Korean Soc Nurs Sci).* 2013;7:1–7. doi:10.1016/j.anr.2012.11.001.

### Author biography

**Urvisha D Chavda**, Pursuing MPT- Ortho

**Chirag P Solanki**, Assistant Professor

**Rahul M Chhatlani**, Assistant Professor

**Cite this article:** Chavda UD, Solanki CP, Chhatlani RM. Nordic walking in geriatric population – An evidence based seminar. *J Educ Technol Health Sci* 2021;8(1):23-25.