

# Institutionalized elderly rehabilitation – effects on physical fitness and quality of life

Cláudia Alves, Eugénia Mendes, André Novo, Leonel Preto  
School of Health, Polytechnic Institute of Bragança – Portugal



**Keywords:** aging, physical fitness, perceived health status, exercise | | maria.mendes@ipb.pt

## INTRODUCTION

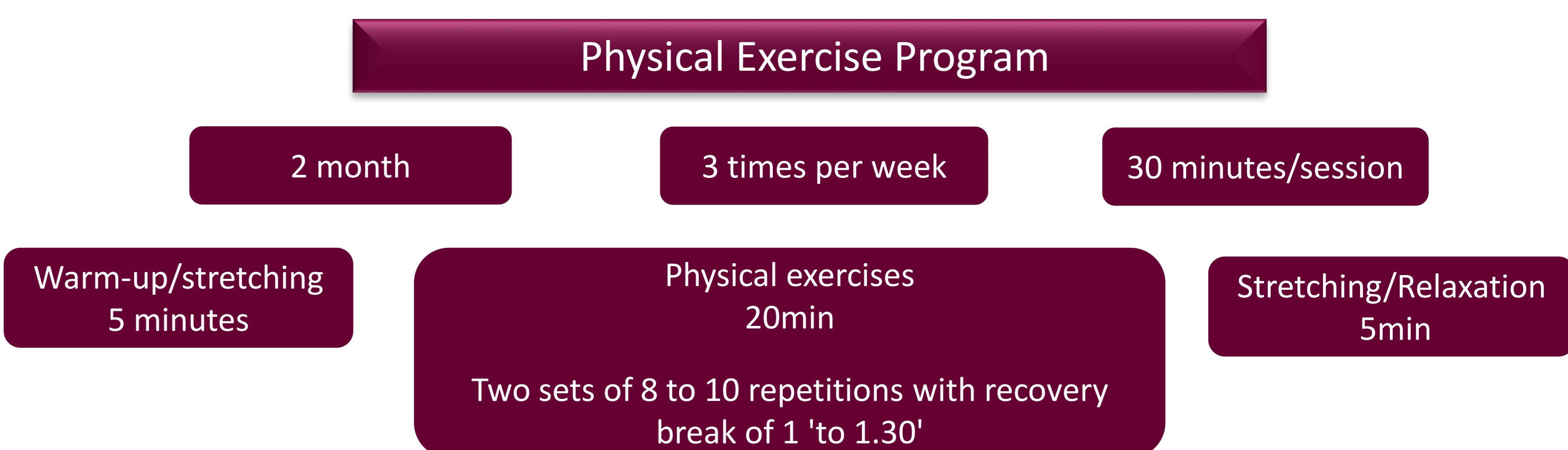
Physical activity is important for healthy ageing and may help to maintain good function in older age. Institutionalization is often due to functional decline and institutions frequently do not provide activities to maintain or regain functionality. Exercise therapy is an important component of rehabilitation programs for elderly and helps reduce pain, improve joint stability, functional ability, muscle strength and endurance, and aerobic capacity; preventing bone loss and fractures, and improving or maintaining quality of life.

## OBJECTIVE

This study aims to investigate if a physical exercise program improves self-perception of health status, physical fitness, muscle strength and body composition in a group of institutionalized elderly.

## METHOD

A quasi-experimental study was conducted using the Portuguese version of the Short Form-36 Health Survey (SF-36v2), the Rikli Jones Senior Fitness Test, hand dynamometry and bioelectrical impedance before and after a physical exercise program.



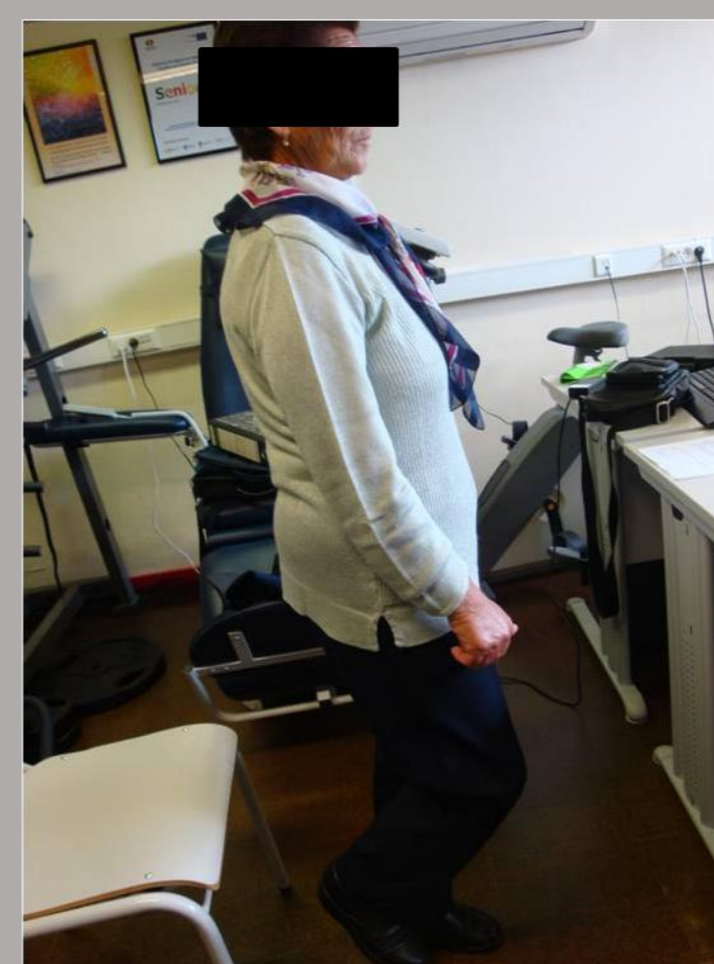
## RESULTS

A total of 20 elderly aged 76,1±8,7 years with 18,3±13,3 months of institutionalization, participated in a two-month of physical exercise program. Results show that scores of SF-36v2 after the program had significantly increased in physical and mental components. They also increase significantly in scales such as physical functioning, bodily pain, vitality, social functioning, general health and mental health. Physical fitness results show that all components improve after the intervention. Noteworthy are aerobic endurance, lower flexibility, superior flexibility and agility, speed and dynamic balance all with statistical significance. An increase in muscle mass and a decrease in body fat, metabolic age, visceral fat and body water was observed, but without statistical significance. had no changes. Probably, the time between the two assessment moments (two months) was not enough so that they could register significant changes in bone mass and hand dynamometry.

Rikli Jones Senior Fitness Test	N	T0	T1	p
		Mean	Mean	
2 Minute Step in Place	20	9.85 ± 3.04	10.25 ± 3.43	0.163
30-Second Chair Stand (repetitions)	20	9.85 ± 3.04	10.25 ± 3.43	0.163
Arm Curl (repetitions)	20	14.35 ± 5.45	15.05 ± 6.03	0.099
Chair Sit-and-Reach (cm)	20	-12.40 ± 12.02	-11.80 ± 11.57	0.010
Back Scratch (cm)	20	-27.75 ± 10.37	-26.50 ± 10.28	0,000
Up-and-Go (seconds)	20	7.30 ± 1.97	6.80 ± 1.47	0.008

SF - 36v2	N	T0	T1	p
		Mean	Mean	
Physical functioning	20	43.50 ± 22.71	55.00 ± 23.95	0.000
Role-Physical	20	96.25 ± 12.23	100.00 ± 0.00	0.180
Bodily Pain	20	41.25 ± 17.00	50.50 ± 15.03	0.002
General Health	20	32.20 ± 9.70	34.75 ± 8.02	0.048
Vitality	20	42.50 ± 9.38	50.50 ± 8.56	0.048
Social Functioning	20	49.37 ± 21.25	59.37 ± 19.39	0.003
Role - Emotional	20	96.66 ± 14.90	100.00 ± 0.00	0.317
Mental Health	20	48.20 ± 11.04	58.20 ± 7.94	0.001
Physical Component	20	35.43 ± 6.42	37.62 ± 5.78	0.001
Mental Component	20	46.74 ± 5.16	51.42 ± 3.90	0.000

Body composition	N	T0	T1	p
		Mean	Mean	
Weigth (kg)	20	77.43 ± 16.92	77.30 ± 16.31	0.838
Body Fat(%)	20	30.76 ± 6.89	30.73 ± 6.89	1.000
Metabolic age	20	67.46 ± 10.97	67.15 ± 10.68	0.102
Body water (%)	20	50.10 ± 4.78	10.05 ± 4.80	0.518
Visceral Fat	20	14.38 ± 6.53	14.31 ± 6.44	0.317
Bone Mass (Kg)	20	2.68 ± 0.46	2.68 ± 0.46	1.000
Muscle Mass(Kg)	20	14.38 ± 6.53	14.31 ± 6.44	0.317



## CONCLUSION

This work reveals that physical fitness and quality of life of the institutionalized elderly are positively influenced by physical activity, and participation in exercise programs can reduce functional decline. Physical exercise programs can contribute to improve physical status and self-perception of well-being leading to autonomy and confidence in performing daily living activities. In institutionalized elderly population this is a very important step towards independent life.

## REFERENCES

Almeida, A. J. & Rodrigues, V. M. (2008). The quality of life of aged people living in homes for the aged. *Rev. Latino-am. Enfermagem*, 16(6), 1025-1031.  
 Chodzko-Zajko, W. J., Proctor, D. N., Fatarone Singh, M. A., Minson, C. T., Nigg, C. R., Salem, G. J. Medicine, A. C. O. S. (2009). American College of Sports Medicine position stand. Exercise and physical activity for older adults. *MedSci Sports Exerc*, 41(7), 1510-1530. doi: 10.1249/MSS.0b013e3181a0c95c  
 Gonçalves, L. H., Silva, A. H., Mazo, G. Z., Benedetti, T. R., dos Santos, S. M., Marques, S., Rezende, T. L. (2010). Institutionalized elderly: functional capacity and physical fitness. *Cad Saude Publica*, 26(9), 1738-1746.  
 Mishra, G. D., Gale, C. R., Sayer, A. A., Cooper, C., Dennison, E. M., Whalley, L. J., & Team, H. S. (2011). How useful are the SF-36 sub-scales in older people? Mokken scaling of data from the HALCYON programme. *Qual Life Res*, 20(7), 1005-1010. doi: 10.1007/s11136-010-9838-7.  
 Ribeiro, L. H., & Neri, A. L. (2012). Physical exercise, muscle strength and the day-to-day activities of elderly women. *Ciência & Saúde Coletiva*, 17(8), 2169-2180.  
 Walters, S. J., Munro, J. F., & Brazier, J. E. (2001). Using the SF-36 with older adults: a cross-sectional community-based survey. *Age Ageing*, 30(4), 337-343.  
 WHO. (2010). *Global recommendations on physical activity for health*. World Health Organization.