

## 37. INCREASED PHYSICAL ACTIVITY AND FITNESS ABOVE THE 50TH PERCENTILE PREVENTS THE INSTITUTIONALIZATION OF ELDERLY PEOPLE: A CROSS-SECTIONAL PILOT STUDY

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### Introduction

Institutionalization in a nursing home restricts autonomy, most notably free will, free choice, and free action. Decreased physical activity and fitness are predictive of disability and dependence (Rikli & Jones, 2013; Tak, Kuiper, Chorus, & Hopman-Rock, 2014); however little is known about the impact of these factors on institutionalization. Thus, this study aimed to analyze the impact of physical activity and fitness and on the risk of elderly people without cognitive impairment become institutionalized.

### Methods

This cross-sectional study involved 195 non-institutionalized (80.1±4.4yrs) and 186 institutionalized (83.8±5.2yrs) participants. Cognitive impairment was assessed using Mini-Mental State Examination, physical activity was assessed using the International Physical Activity Questionnaire, and measures of physical fitness were determined by the Senior Fitness Test.

Results: Multivariate binary logistic analysis selected 4 main predictors of institutionalization in both genders. The likelihood of becoming institutionalized increased by +18.6% for each additional year of age, while it decreased by -24.8% by each fewer kg/m<sup>2</sup> in BMI, by -0.9% for each additional meter performed in the aerobic endurance test and by -2.0% for each additional 100MET-min/wk of physical activity expenditure ( $p < 0.05$ ). Values  $\leq 50$ th percentile (age  $\geq 81$ yrs, BMI  $\geq 26.7$ kg/m<sup>2</sup>, aerobic endurance  $\leq 367.6$ m, and physical activity  $\leq 693$ MET-min/wk) were computed using Receiver Operating Characteristics analysis as cut-offs discriminating institutionalized from non-institutionalized elderly people.

### Conclusion

The performance of physical activity, allied to an improvement in physical fitness (mainly BMI and aerobic endurance) may prevent the institutionalization of elderly people without cognitive impairment only if they are above the 50th percentile; the following is highly recommend: expending  $\geq 693$ MET-min/wk on physical activity, being  $\leq 26.7$ kg/m<sup>2</sup> on BMI, and being able to walk  $\geq 367.6$ m in the aerobic endurance test, especially above the age of 80 years. The discovery of this trigger justifies the development of physical activity programs targeting the pointed cut-offs in old, and very old people.

### References

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- Tak, E., Kuiper, R., Chorus, A., & Hopman-Rock, M. (2014). Prevention of onset and progression of basic ADL disability by physical activity in community dwelling older adults: a meta-analysis. *Ageing Res Rev*, 12, 329-338.

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