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ANITA HÖKELMANN, ANDRÉ NAPIONTEK  
Institute for Sport Science, Otto von Guericke University, Magdeburg, Germany

## HEALTH PROMOTION AMONG SENIORS THROUGH MUSIC AND MOVEMENT

### INTRODUCTION

Many people in the 21<sup>st</sup> century more and more often reach the age of 100 years. Everyone wishes to enjoy life and old age in good health, being able to maintain enough endurance and mobility to remain independent. To maintain these qualities, a person must remain physically active. Some skills require an individual to produce rapid responses to various sources of sensory information. Automobile drivers at an advanced age, for example, must be able to move their foot quickly between the accelerator pedal and the brake pedal, whenever an animal or a child suddenly gets in the way. On the other hand, elderly people like to organize all aspects of their life themselves. Independence is a very important issue for seniors, and the aim of senior sport is competent maintenance of life practicalities. This includes motor and psychological certainty of management of daily requirements of life. Over 2000 years ago Socrates said that, "It is a shame to become older because of our own neglect", recognizing that ageing cannot be stopped, but it can be influenced in a positive or negative manner, for instance, by practicing ice-skating, which according to Goethe was "a suitable defence against ageing."

For over thirty years European scientists, psychologists, doctors, and sport experts have been dealing with the question of how one can redefine age by changing social conditions, extending life expectancy and creating a new meaning to life. Sport for seniors is part of this new meaning of life.

Sport for the elderly is becoming more and more popular. Participation of senior citizens in sports is constantly on the rise (Fig. 1).

Sport for seniors must include the following features:

- reduced strength,
- reduced speed movement,

- reduced flexibility of joints and
- reduced reaction and coordination abilities [2].

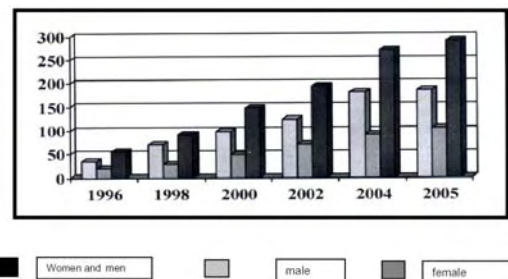


Figure 1. Development of membership in senior sport clubs

The Institute for Sport Science has conducted a project for seniors to maintain and improve physical fitness through moderate movement in combination with music. Thanks to music:

1. movements are rhythmically created (the dynamic structure of movement is organized in relation to time);
2. expressive movements are created;
3. emotions/feelings of physical load are recalled or awakened.

An intervention concept was developed to stabilize and improve abilities and skills in seniors.

The premises for this arrangement included:

- music-oriented motor practice for the whole body,
- dancing exercises, games with music, relaxation exercises, walking/running exercises to the music,
- a multifaceted and variable load engaging multiple muscle groups
- careful transitions during the exercise and dance routines in order to minimize extreme changes in exertion and cardiovascular overload

- music is used as a special factor to awaken emotions and impart joyous meaning to the exercise
- group rhythmic exercise promoting movement coordination, rhythm, and direction of the intensity of the exercise
- consideration of the group's musical tastes

The aim of the study was to prove that music-oriented motor exercises in sport for seniors lead to a significant improvement in performance, i.e. selected performance parameters, which constitute the basis for competence in life's practicalities and characteristics of good health.

The following research question was formulated:

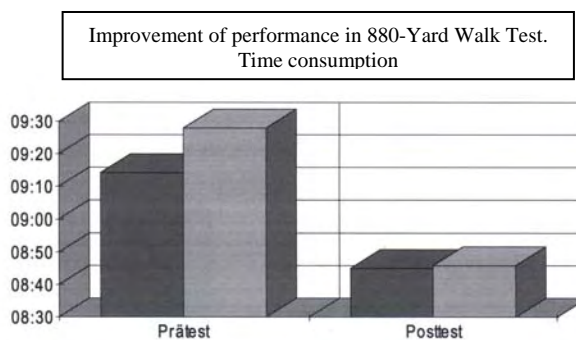
Does weekly music-oriented exercise over a period of ten months lead to improvement of performance for selected physical and coordinative abilities?

### METHODS

30 seniors (aged 60-70 years) participated in a year-long study of 90-minute weekly exercise sessions. Pre-tests were administered prior to the start of the study and post-tests were administered ten months after the study completion. The test measures included an 880-yard walking test, a reaction test (falling stick test), a sit and reach test, balance test and a rhythm test. In addition, a survey regarding attitudes towards exercise and individual exercise preferences was carried out.

### RESULTS

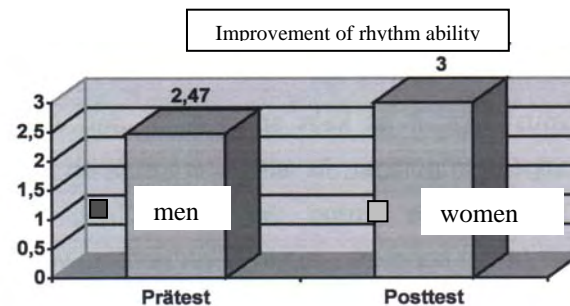
Both men and women under study significantly improved their walking performance. The women achieved higher results than men (Fig. 2). Two women achieved the highest performance results in the entire group of subjects.



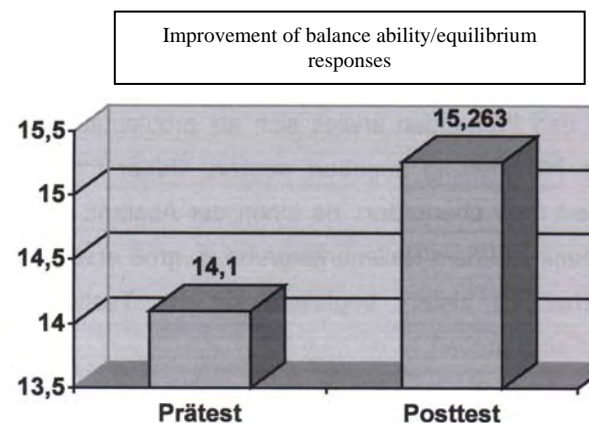
**Figure 2.** Walking time (in minutes); level of statistical significance: 0.01

There was no improvement of performance recorded for the flexibility test. The results vary and are not statistically significant. It can be concluded that training did not influence flexibility performance.

The result of the rhythm test, the balance test and the reaction test indicate an improvement in the case of all participants, with high statistical significance (Fig. 3, 4). The music-oriented exercise with clear instructions concerning movement speed, intensity and duration leads to a significant improvement in performance. Music-oriented training influences subjects' motivation to perform better, and releases energy from the reserves. Body coordination and the ability to maintain balance are improved by movement of the whole body with different movement rhythms in arms and legs (polycentric and polyrhythmic principles) and locomotion as well as by movements and balancing position on the stepper. The ability to react is positively influenced by the high requirements of the speed of movement.



**Figure 3.** Rhythm ability in points (mean); level of statistical significance: 0.05



**Figure 4.** Balance ability (m); level of statistical significance: 0.01

Significant improvements in subjects' cardiovascular endurance and rhythmic abilities were observed. Although statistically non-significant, there were improvements in balance, movement ability, reaction time and power analysis. The seniors' attitude toward movement and exercise improved noticeably, and the majority of subjects said they would have liked the project to continue.

Conclusions: music-oriented exercise for seniors, individually and in groups, containing versatile, complete body exercises, promotes interest in physical activity, enhances physical well-being, and improves physical performance.

Music-oriented motor practice with seniors, which contains versatile exercises for the whole body, both individually, in pairs, and altogether, promotes the joy of physical loads, physical well-being and improves efficiency with individual power factors, while preventing the decline in functional outcome measures related to independent living.

## REFERENCES

- [1] Beckers E., Ehlen J., Luh A., *Bewegung, Spiel und Sport im Alter*, Sportverlag, Köln 2006
- [2] Nagel V., *Fit und geschickt durch Seniorensport*, Sportwissenschaft und Sportpraxis, Bd. 11 Czwalina Verlag Hamburg 1997.