Lehrstuhl für Bewegungswissenschaft
Fakultät für Sport- und Gesundheitswissenschaften
Technische Universität München

Master-/Bachelor-Thesis

The benefits of being active across the lifespan on motor control and learning

Physical activity and mobility of older adults is accompanied with a range of different positive side effects. Empirical studies showed, among others, a positive effect of physical activity on quality of life, physical fitness and cognitive functioning in the elderly. Similar effects were found for younger adults and different patient groups.

Master athletes, who are participating in sports competitions even in later stages of their lives, are often characterized by a significantly higher level of physical fitness as compared to the average of their age group. Whether this higher level of physical fitness, along with the chronic physical activity are also correlated with a higher level of motor control and cognitive functioning has not been investigated, yet.

Research objectives: Investigating the effect of physical activity on motor functioning in older adults

Participants: Elderly individual with different fitness level (in preparation for a study in master athletes)

Methods: Existing test battery measuring fine motor control and motor learning. Indictors of fitness (questionnaire and/or actigraphy).

Data Analysis: Excel, basic statistics (SPSS or similar).

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Information/Literature:

Bherer, L., Erickson, K. I., & Liu-Ambrose, T. (2013). A review of the effects of physical activity and exercise on cognitive and brain functions in older adults. Journal of aging research, 2013.

Hübner, L., & Voelcker-Rehage, C. (2017). Does physical activity benefit motor performance and learning of upper extremity tasks in older adults?–A systematic review. European review of aging and physical activity, 14(1), 15.

Figure 1: Master athletes are commonly characterized by a high level of physical fitness.

Figure 2: Actigraph for measuring physical activity (accelerometry, Source: actigraphcorp.com).