

## **Section AGEING and SENESCENCE**

### **FINE MOTOR SKILLS OF A HAND IN POLISH AND CZECH FEMALE SENIORS LIVING DIVERSIFIED LIFESTYLE**

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Involution as physiological and multi aspect changes in human body, can worsen the functioning of the elderly. Those changes concern not only the deterioration of motor performance, but influence also other body parts and by that they may cause self-care problems. Weakening of hand performance may be a result of a sarcopenia, the decline of strength and endurance or changes in the peripheral nervous system, such as a reduction in nerve conduction velocity, sensory perception or excitation coupling and contraction of motor units. Involution changes also cause minor disturbances of movement, handling and the eye-hand coordination. These factors may affect elder people daily activities, self-care, and thus result in considerable independence loss. The aim of this study was to analyze the involutinal changes in the field of precise motor skills of a hand in older women living in different environmental conditions. There were 486 women included in the study, aged over 60 years recruited in Poland and Czech Republic. Research in Poland was part of the research project # N N404 MNiSzW 075337 at the Academy of Physical Education in Wrocław, study in the Czech Republic was a part of the research project MSM 6198959221 at University in Olomouc. Both projects were approved by the Ethics Committee for Scientific Research. The measurement was conducted, using the Vienna test system. Aim, hands shaking, precision and speed of movements of arms and hands, dexterity of hands and fingers, the speed of the wrist and fingers were investigated. The best results in coordination and movement of hands has been observed in women from Universities of the Third Age in Poland. It is very probable that it is effect of physical activity programs realised by these institutions. The study confirmed involutinal changes in the analyzed precise motor movements of the upper limbs in all groups of older women. These changes were the greatest in the group of seniors presenting non active lifestyle, which indicates the important role of prevention programs in gerontology.

**Key words:** *fine motor skills, involution, seniors, Vienna test system*

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