

The present trial studied 33 seniors undergoing sports activities and compared them with 42 seniors without sports activities by focusing on their health and fitness state and the attempt of a correlation with the aminoacid metabolism (AA). Including criteria: Age  $\geq$  70 years, self supporting seniors. Sportily active seniors: Having activity 3x/week including elements of strength, endurance and coordination. Excluding criteria: HBA1c  $>$  9 mg/%, syst.BP  $\geq$  180 mmHg, status of acute MI ( $\leq$  2 months ago), carcinoma  $\leq$  1 year without relapse. Doing aerobic sports supports people  $\geq$  70 years to achieve healthy and succesfull ageing and to conserve capacity for self-reliance and quality of life. Aerobic sports activities and specific diet guarantee functioning of the anti-oxidative system. Well balanced diet supplies the substrates for hemeostasis and repair mechanisms for the musculoskeletal system. The muscle organ is mainly known as AA source. Sarcopenia means disturbance in this hemeostasis. Anabolic stimuli through sport and food facilitate good health. Best are sports activities including elements of endurance, strength and coordination. With today's state of knowledge, it is not permissible to judge the degree of ageing process from the AA metabolism. The results with regard to the complex antioxidative system reveal that there is no handy marker to determine the redoxstatus.