

## **Abstract submission NNC 2016**

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**Essential amino acids supplementation and its effects on age related loss of muscle mass and function - A systematic review**

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**Background and aims:** Loss of muscle mass, strength and/or function are common in the increasing elderly population, a conceptual and diagnostic term often used for this age related alteration of muscle mass is sarcopenia. Using dietary supplements, essential amino acids have shown promise to prevent this muscle wasting. The aim of this systematic review was to evaluate currently published data investigating the use of essential amino acids in prevention of age related muscle wasting in individuals with or at risk of sarcopenia over the age of 65.

**Methods:** The electronic databases PubMed and Scopus were searched. Inclusion criteria were experimental studies in English from 1994-2015, using essential amino acid supplementation and subjects above 65 years. Search terms conducted were "essential amino acids" and "sarcopenia". A manual search for studies in found articles was also performed.

**Results:** Eight studies meeting the predetermined inclusion criteria were analyzed. The studies all indicated that intake of essential amino acids could maintain or increase lean body mass and muscle strength/function. +3,7% mean increase (+1,64% placebo) in lean body mass in studies spanning 10 days to 3 months. Strength and functional gains were measured in varying ways but all showed a clear advantage for the intervention group. The best effect was seen in those subjects with sarcopenia.

**Conclusion:** Supplementation with essential amino acids seem to be effective in individuals above 65 years of age with low muscle mass, strength or function for maintenance or increased lean body mass and muscle strength/function. Optimal dose, intervention period and adequate combination of amino acids remain to be determined and warrants further research.

**Disclosure of Interest:** None to declare