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**The relationship between Vitamin D level and Sarcopenia :
Insights from a Korean Population Study**

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Abstract

Background: Loss of muscle mass increases insulin resistance, as well as falls, fractures, and mortality. Recent studies have shown that cells in various tissues can express vitamin D receptors, indicating that vitamin D deficiency could increase the prevalence of various diseases, including sarcopenia, cardiovascular disease, obesity, and cancer. The objective of the present study is to determine the correlation between the vitamin D and sarcopenia in older subjects aged ≥ 65 years and contribute to the health of this population, which is known to gradually increase insulin resistance by reduced muscle mass.

Methods: The present cross-sectional investigation analysed data of 3,174 Korean adults aged ≥ 65 years (1,360 males and 1,814 females) who participated in the Korea National Health and Nutrition Examination Survey. Sarcopenia was defined as cases where the skeletal muscle mass was two standard deviations lower than the mean skeletal muscle mass of healthy adults aged 20–39 years; others were defined as normal. Logistic regression analysis was performed to determine the effects of blood vitamin levels on sarcopenia.

Results: Vitamin D deficiency was associated with a significantly increased probability of sarcopenia in males (odds ratio [OR]=1.86, 95% confidence interval [CI]=1.29~2.68) and females (OR=1.79, 95% CI=1.30~2.47).

Discussion: This finding suggests that maintaining adequate vitamin D levels could reduce the risk of sarcopenia in older individuals. The reduced sarcopenia risk would, in turn, decrease insulin resistance, fall, fracture, and mortality rates, enhancing the health of older subjects.