

## **Relationships between low hand grip strength and social, physical and medical status in the elderly**

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Hand grip strength (HGS) is a measure of the maximum static force that a hand can squeeze using a dynamometer. HGS is a way to indirectly assess health status and physical abilities. And low HGS is also used as an index to evaluate sarcopenia in the elderly population. Currently HGS is widely used because it is easy and inexpensive to evaluate. Annually the Korea National Health and Nutrition Examination Survey (KNHANES) conducted by the Korea Centers for Disease Control and Prevention, and surveyed social status, nutrition, physical status and other medical history including HGS. Based on 7th KNHANES, In this study, we investigated the relationships between social, physical and other medical status and low HGS in the male and female elderly Korean population. According to the guideline of European Working Group on Sarcopenia, elderly low HGS was defined as a population at 65 years of age or older who showed weak HGS below -2 standard deviation based on the peak value of the young age group. A total of 903 subjects (male=411, female=492) were included in the analysis. And univariate and multivariate logistic regression analyses were used to analyze the factors associated with low HGS in men and women. Univariate logistic regression analysis showed that age, body mass index, degree of aerobic exercise, total energy intake, house income and education level were associated with low HGS in men. And, in women, age, weight gain, fat intake, education level were significantly related. However, in the multivariate logistic regression analysis for the related factors with adjusted age and body mass index, low intake of fat and protein, and low education level was associated with low HGS in men, however weight gain was associated with low HGS in women. In Conclusion, we analyzed the various factors associated with low HGS, and there were differences between men and women in the related factors. Based on this Results, it was thought that active approach and intervention are needed for the prevention of sacropenia through the correction of those related factors. Furthermore, different approaches are needed depending on gender.