

**Association of Sarcopenia with Prevalence of Atopic Dermatitis
and Effect Modification by Body Mass Index
: Nationwide Surveys (KNHANES 2008-2011)**

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Background: Atopic dermatitis (AD) is a chronic inflammatory dermatosis that imposes significant patient burdens. The immunology of chronic inflammation in the pathogenesis of AD has been extensively investigated. Growing evidence suggests that sarcopenia is associated with systemic inflammation. However, evidence is limited on the relationship between AD and sarcopenia. We investigated the association between AD and sarcopenia using a nationwide representative survey in Korea.

Methods: We performed a cross-sectional study with data obtained from the Korean National Health and Nutrition Examination Survey (KNHANES) (2008–2011). We defined the muscle mass index (MMI) as appendicular skeletal muscle (ASM [kg]) divided by the body mass index (BMI [kg/m²]). The association between MMI and the prevalence of AD was analyzed using multivariate logistic regression.

Results: Data from 17,934 participants aged ≥ 19 years were analyzed. Participants were categorized into quintiles according to their MMI. Sarcopenia was defined as the lowest MMI quintile group in both men and women. Sarcopenia was associated with the prevalence of AD after adjusting for various factors related to AD in both men and women (ORs, 1.13, 1.09; 95% CI, 1.03–1.23, 1.01–1.19; p, 0.010, 0.032). After stratification by BMI, sarcopenia was not associated with AD in subjects with obesity (BMI ≥ 25). In contrast, the association between sarcopenia and AD was retained, and the effect size increased among both men and women without obesity (BMI <25) (ORs, 1.17, 1.12; 95% CI, 1.04 – 1.32, 1.02–1.24; p 0.011, 0.023).

Conclusions: Sarcopenia is related to the prevalence of AD, and participants with a lower MMI were more likely to have AD. These results suggest that muscle mass can affect the prevalence of AD. Future research should investigate the molecular mechanism and determine the clinical implications of this correlation.