

Paper Category:	Prevention and public health
Paper Title:	Association of Handgrip Strength with Incident Diabetes Mellitus in Korean According to Gender
Abstract Body:	<ul style="list-style-type: none"> • Background • Objectives • Method • Results • Discussions and Conclusions

Background : Diabetes mellitus (DM) is a well-known disease to cause such comorbidities as chronic kidney disease (CKD) and cardiovascular disease. Consequently, it is necessary to discover diagnostic instruments for prevention of DM. Handgrip strength known as a diagnostic tool of sarcopenia is a predictor of many disease such as CKD, cardiovascular disease. However, the value of handgrip strength as an indicator of incident DM in Korean is unknown.

Objectives : The aim of our study is to identify the relationship between handgrip strength and the incidence of DM in Korean adults taking into account gender.

Method : A total of 173,195 participants were registered from a nationwide cohort. Finally, 33,326 participants remained in our study after exclusions. DM has occurred in 1473 individuals during the follow-up period (mean follow-up period was 4.1 years). The study population was subdivided into quartiles of relative handgrip strength, defined as the absolute handgrip strength divided by BMI to reduce the impact of body size. Multivariate cox regression demonstrated that relative handgrip strength was inversely associated with new-onset DM.

Results : Compared with the lowest quartile (Q1), the hazard ratios (HRs) [95% confidence intervals (CIs)] for new-onset DM for the highest quartiles (Q4) was 0.60 (0.43 – 0.84) in men and 0.72 (0.52 – 0.99) in women after adjusting for confounding factors. The incidence of DM decreased as relative handgrip strength increased. These inverse relationships were more statistically significant in men than in women.

Discussions and Conclusions : This is the study revealing that relative handgrip strength is related to incident DM in both men and women. Furthermore, the association of relative handgrip strength with DM is more significant in men than in women. Relative handgrip strength can be used as a practical tool to prevent and detect DM.

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