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## **Body shape change in relation to incident chronic kidney disease in Korean adults**

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**Objectives:** Obesity is one of the risk factors for chronic kidney disease (CKD). Body weight changes, either increase or decrease, are correlated with the development of chronic kidney disease. Parameters that indicate obesity change such as body weight change, waist change, waist-hip ratio (WHR) change, BMI change, and ABSI change were compared in order to find the predictors of CKD.

**Methods:** Korean National Health Insurance Service that consists of, 4,285,648 healthy adults (over 40 years) were analyzed. These patients had a medical checkup in 2009 and had one or more health checkups conducted until 2017. We defined CKD patients as those who had proteinuria or GFR below 60mL/min/1.73m<sup>2</sup> more than 2 times between 2014 and 2017.

**Results:** Initially, 103,928 patients developed CKD between 2014 and 2017. At baseline, CKD developed patients had increased body weight (63.6kg vs 67.1kg,  $p < 0.0001$ ), BMI (24.0 vs 24.9,  $p < 0.0001$ ), waist (80.9cm vs 84.4cm,  $p < 0.0001$ ), WHR (0.50 vs 0.52,  $p < 0.0001$ ), and ABSI (19.5 vs 21.2,  $p < 0.0001$ ) level. Compared with maintenance obesity parameter group, increased obesity parameter group had more tendency to develop CKD, in multivariate logistic regression analysis. WHR showed better Odd ratio of the occurrence of the CKD (OR 1.053, 95% CI 1.050-1.056) than other obesity parameters.

**Conclusions:** Those who have increased obesity-related indicator are more likely to develop CKD than those who have maintained obesity-related indicator. Among those parameters, WHR best explains the development of CKD compared with other parameters.