**Introduction and Aims:**
Sarcopenia and obesity are prevalent among patients with chronic kidney disease (CKD) and contribute to poor outcome. Body composition measured by body mass index (BMI) is simple but inaccurate. Accurate understanding of relationship of sarcopenia and obesity with CKD is crucial.

**Methods:**
Body composition in adult participants of the Korean National Health and Nutrition Examination Survey (KNHANES) 2008-2011 who underwent dual-energy x-ray absorptiometry (DXA) was examined. Sarcopenia defined by DXA: appendicular lean mass/height^2^, women ≤ 5.67 kg/m^2^, men ≤ 5.67 kg/m^2^ (EWGOSOP guideline). Obesity defined by DXA: % total body fat was above sex-specific 60th percentile for the whole KNHANES participants. Normal BMI defined as BMI 18.5–25.0 kg/m^2^ (WHO guideline).

**Results:**
The mean age was 49.5 ± 16.1 years, 56.3% were women, 3.0% had CKD. Sarcopenia (14.3%), obesity (16.0%) and sarcopenic obesity (10.7%) measured by DXA were prevalent among 10,734 adult participants with normal BMI. After multivariable adjustment, the association of sarcopenia, obesity and sarcopenic obesity with eGFR was U-shaped. Crude odds ratio (OR) for CKD according body composition was 2.97 (95% CI=2.23-3.95) in sarcopenic obesity group. After adjustment for age, gender, diabetes, hypertension, hyperlipidemia, activity, cardiovascular disease and other risk factors, OR was 1.59 (95% CI=1.16-2.19).

**Conclusions:**
Sarcopenia, obesity and sarcopenic obesity are highly prevalent among the adults with normal BMI in KNHANES. Sarcopenic obesity may have independent risk of CKD even in normal BMI. Measurements of body composition by DXA may provide important information to evaluate the CKD.