

## **WEIGHT LOSS INTERVENTIONS IN KIDNEY DISEASE: A SYSTEMATIC REVIEW**

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Obesity is an independent risk factor for chronic kidney disease (CKD). We conducted a systematic review to analyze the impact of various weight loss interventions on progression of kidney disease, proteinuria and blood pressure.

We searched MEDLINE (June 2008), the metaregister of controlled trials, and abstracts presented at major nephrology meetings for relevant studies. Two reviewers independently reviewed the search results, selected the studies, and extracted relevant data. Summary estimates were obtained using random-effects model and reported as weighted mean difference (WMD) along with 95% confidence intervals (95% CI).

Twelve studies were included. Body mass index (BMI) decreased significantly (WMD 3.67, 95%CI 0.78 to 6.56) at the end of study period with exercise and/or diet. This resulted in a significant decrease in proteinuria (WMD 1.65 g/day, 95%CI 0.69 to 2.62) and systolic blood pressure but did not result in a change in glomerular filtration rate (GFR) (WMD 1.50 ml/min, 95%CI -6.45 to 9.45). BMI decreased significantly with surgical interventions (WMD 17.31, 95%CI 14.59 to 20.02) which resulted in a decrease in GFR (WMD 24.02 ml/min, 95%CI 11.36 to 36.37) and SBP (WMD 22.63 mmHg, 95% CI 19.07 to 26.19) in patients with glomerular hyperfiltration.

In smaller, short duration studies in CKD population, weight loss interventions with diet and/or exercise substantially reduce proteinuria and blood pressure. In morbidly obese individuals surgical interventions reduce glomerular hyperfiltration and blood pressure. Larger, long-term renal and cardiovascular outcome studies are needed.