

Mechanistic effects of Semaglutide on kidney disease in type 2 diabetes: The REMODEL trial



Adults with T2DM and CKD (n=106)

Mean age 65±10 years

24% females

Mean eGFR 51±10 mL/min/1.73m²

Median UACR 187 mg/g

Subcutaneous Semaglutide (1mg once weekly)

2:1

Placebo

52 weeks

Renal biopsy N=33

Summary of outcomes of semaglutide

Kidney damage and function

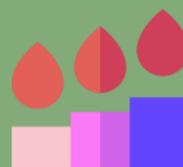
40% lower UACR



12 mL/min higher creatinine clearance

Hemodynamics and fibrosis

Reduction in renal arterial resistive index



Stable apparent diffusion coefficient

Reduced kidney fat

25% decrease in perirenal fat volume



13% decrease in sinus fat volume

Glomerular endothelial cell transcriptome alterations

Downregulation of genes in metabolic, inflammatory, and fibrotic pathways



Conclusion: In participants with T2D and CKD, semaglutide reduced kidney fat, improved glomerular hemodynamics, and ameliorated endothelial injury through metabolic reprogramming and mitigation of inflammation and fibrosis.

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