

PREVENTION

Intensive exercise associated with reduced risk of diabetic nephropathy in patients with type 1 diabetes mellitus

New data from the FinnDiane Study suggest that physical activity may reduce the risk of diabetic nephropathy in patients with type 1 diabetes mellitus (T1DM). These findings are consistent with data from previous cross-sectional studies that showed associations between low levels of physical activity and diabetic complications in this population.

“FinnDiane is a comprehensive multicenter follow-up study with the

aim of identifying clinical, biochemical and genetic factors that predispose to diabetic nephropathy,” explains principal investigator Per-Henrik Groop. “In this particular study we focused on exercise.”

Researchers Johan Wadén, Heidi Tikkanen and colleagues used a validated leisure-time physical activity (LTPA) self-report questionnaire to collect data on the amount and intensity of physical activity in 1,390 patients with T1DM. They assessed renal function using urinary albumin excretion rate at baseline and during a median follow-up of 6.4 years.

The researchers found no association between total LTPA and the development or progression of renal disease. However, the 10-year cumulative renal progression rate was higher in patients with low intensity of LTPA (24%) than in those with moderate (13.5%) or high intensity LTPA (13.1%). Greater frequency of LTPA was also associated with a lower cumulative rate of renal progression.

“Our most intriguing finding was that it is not the amount of physical activity but the intensity that counts,” says Groop. “The greater the intensity of exercise the lower the risk of diabetic nephropathy—you have to sweat.” He explains that the next step will be to define the threshold of exercise intensity that is needed to improve renal outcomes in T1DM.

“Another open question is whether short bursts of intensive exercise or longer training sessions are needed for renal benefits,” says Groop. “In the future we might regularly prescribe intensive exercise to patients with T1DM who do not have contraindications such as heart disease and/or severe retinopathy.”

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