

# Risk of ischemic, hemorrhagic stroke up with type 1 diabetes

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(HealthDay)—The risks of ischemic and hemorrhagic stroke are

increased with type 1 diabetes, with incrementally increasing risks with increasing hemoglobin A1c (HbA1c), according to a study published in the November issue of the *Journal of Internal Medicine*.

Christina Hedén Ståhl, from the University of Gothenburg in Sweden, and colleagues conducted a prospective, matched cohort study to examine the excess stroke risk in relation to [glycemic control](#) in patients with type 1 diabetes. Patients with type 1 diabetes registered in the Swedish National Diabetes Register (33,453 participants) were each matched to five [control subjects](#) from the general population (159,924 participants).

The researchers found that 2.3 percent of patients with diabetes and 0.7 percent of control subjects were diagnosed with stroke. Type 1 diabetes patients had overall multiple-adjusted hazard ratios of 3.29 and 2.49 for ischemic and hemorrhagic stroke, respectively, compared with control subjects. With increasing HbA1c, the risk of ischemic and hemorrhagic stroke increased incrementally; the risk of [ischemic stroke](#) was significantly increased with HbA1c within target ( $\leq 6.9$  percent, multiple-adjusted hazard ratio, 1.89). The risks of ischemic and hemorrhagic stroke were markedly increased for HbA1c  $\geq 9.7$  percent, with multiple-adjusted hazard ratios of 7.94 and 8.17, respectively.

"Individuals with type 1 diabetes have an increased risk of ischemic and [hemorrhagic stroke](#), increasing markedly with poor glycemic control," the authors write.

The Novo Nordisk Foundation provided some funding for the study.

**More information:** [Full Text](#)

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