

Can controlling blood pressure reduce the incidence of ocular complications in people with diabetes?

Clinical Question	What are the effects of controlling blood pressure levels among of people with diabetes on incidence and progression of diabetic retinopathy and preservation of visual acuity?
Bottom Line	<p>Among the 11 trials that reported the incidence of diabetic retinopathy among 4940 participants, findings supported intensive blood pressure intervention, with an estimated reduction in 5-year incidence of 18%. This was particularly relevant for those participants with type 2 diabetes that were hypertensive at study enrolment. A study in normotensive subjects with type 1 diabetes also showed a decrease in the incidence of diabetic retinopathy for those undertaking blood pressure control, but more research is required to confirm this finding.</p> <p>Five trials including 5144 participants with diabetes reported data on progression of retinopathy. Overall, the evidence indicated no benefit of more intense intervention on blood pressure with respect to progression of diabetic retinopathy.</p>
Caveat	<p>There was considerable variability among the trials with respect to sample size, blood pressure control interventions, eligibility criteria, diabetic retinopathy outcomes reported, years during which trials had been conducted, and length of follow-up of participants.</p> <p>The investigators of the clinical trials included in this review did not systematically report on adverse events related to tight blood pressure control apart from death from any cause.</p>
Context	Diabetic retinopathy is a common complication of diabetes and a leading cause of visual impairment and blindness. Research has established the importance of blood glucose control to prevent development and progression of the ocular complications of diabetes. Concurrent blood pressure control has been advocated for this purpose, but individual studies have reported varying conclusions regarding the effects of this intervention.
Cochrane Systematic Review	Do DV, Han G, Abariga SA, Sleilati G, Vedula SS, Hawkins BS. Blood pressure control for diabetic retinopathy. Cochrane Database of Systematic Reviews 2023, Issue 3. Art. No.: CD006127. DOI: 10.1002/14651858.CD006127.pub3. This review contains 29 trials with a total of 4620 type 1 and 22,565 type 2 diabetic participants.

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Systematic review link:

<https://www.cochranelibrary.com/cdsr/doi/10.1002/14651858.CD006127.pub3/full>