

## Impact on absolute mortality due to intensive glucose lowering for patients with diabetes

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**Introduction:** Intensive control of blood glucose in diabetic patients is associated with suboptimal survival.<sup>1</sup> In the Action to Control Cardiovascular Risk in Diabetes (ACCORD) trial, 10 104 patients were randomised to intensive or standard therapy (target glycosylated haemoglobin levels <6.0% vs 7-7.9%) for a mean treatment duration of 3.7 years.<sup>2</sup> To properly appreciate the implications of this trial's findings, they should be viewed in absolute terms.

**Methods:** Relevant results reported in the ACCORD trial were therefore used to calculate unadjusted number needed to treat (NNT) and relative risk (RR) values and their 95% confidence intervals (CIs), as described previously.<sup>3</sup>

**Results:** Fatal event rates expressed as unadjusted RR and NNT/year values together with their respective 95% CIs, are shown in the Table.

**Conclusion:** Intensive glucose lowering was associated with a small but statistically significant negative NNT/year that amounts to a "number needed to harm". This contrasts with the mortality benefit (NNT/year of +163),<sup>3</sup> which accrued from simvastatin therapy in the high-risk patients reported in 4S (Scandinavian Simvastatin Survival Study). In terms of all-cause mortality, the potential harm from such intensive glucose lowering is a matter of concern.

Deaths	RR (95% CI)	NNT/year (95% CI)
From any cause	1.22 (1.02 to 1.46)	-367 (-196 to -2750)
Cardiovascular		
Unexpected	1.14 (0.84 to 1.56)	-1699 (-510 to 1278)
Myocardial infarction	1.67 (0.80 to 3.46)	-2337 (-969 to 5674)
Congestive heart failure	1.30 (0.72 to 2.36)	-3115 (-957 to 2481)
Procedure related	2.20 (0.75 to 6.47)	-3115 (-1336 to 9380)
Arrhythmia	0.33 (0.10 to 1.06)	2337 (1169 to 2359681)
Stroke	0.75 (0.31 to 0.69)	6231 (-3037 to 1538)

### References

1. Currie CJ, Peters JR, Tynan A, et al. Survival as a function of HbA(1c) in people with type 2 diabetes: a retrospective cohort study. *Lancet* 2010;375:481-9.
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3. Kumana CR, Cheung BM, Lauder IJ. Gauging the impact of statins using number needed to treat. *JAMA* 1999;282:1899-901.