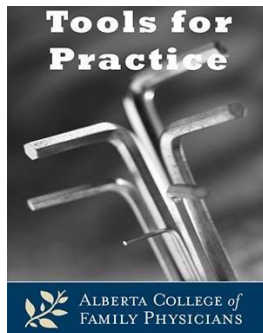


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Evidence Updated: New cohort
Bottom Line: No change
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Is Diabetes a Coronary Heart Disease Equivalent?

Clinical Question: Do patients with diabetes have the same risk of cardiovascular (CV) events as patients with existing coronary heart disease (CHD)?

Bottom Line: Though diabetes does confer an increased risk of CV events, it is not automatically equivalent to having experienced a myocardial infarction (MI) (and thus does not always warrant aggressive pharmacotherapy). CV risk should be predicted, and therapy guided, by taking into account individual risk factors.

Evidence:

- Meta-analysis¹ of 13 observational studies (45,108 patients):
 - Compared with patients with previous MI, diabetic patients have half the risk of CHD.
 - Odds ratio 0.56 (95% confidence interval 0.53-0.60).
- Danish cohort study² (>150,000 patients):
 - After adjusting for some cardiac risk factors, socioeconomic status, and CV drugs:
 - Diabetics had lower risk of MI or coronary death (hazard ratio 0.63 in men and 0.54 in women) than patients with prior MI.
 - Limitations: No adjustment for most traditional risk factors (blood pressure, smoking status, etc.), which would have likely attenuated the association in diabetics further.
- US cohort study³ (>160,000 patients): Hazard ratio for fatal or non-fatal CHD event adjusting for traditional CV risk factors vs those without diabetes or CHD:
 - Diabetes: 1.70 (1.66-1.74);
 - Diabetes duration ≥ 10 years: 2.7 (2.6-2.8);
 - Prior CHD: 2.76 (2.69-2.85);
 - Both diabetes and prior CHD: 3.91 (3.78-4.05).

Context:

- North American guidelines^{4,5} no longer equate diabetes to existing CHD.
- Canadian cholesterol guidelines⁴ classify diabetics with ≥ 1 of the following as high-risk patients who may benefit from a statin:

- Age ≥40 years;
- Age ≥30 years and duration of diabetes >15 years; or
- Microvascular disease (nephropathy, neuropathy, retinopathy).
- The observational study⁶ that originally generated the concept of diabetes-CHD equivalence had multiple limitations, including selection bias and being very underpowered.
- Presence of diabetes approximately doubles the risk of CV events:^{3,7}
 - Associated risk further increased by longer duration of diabetes,^{3,8} increasing HbA1c,⁹ and traditional cardiac risk factors.¹⁰
- Most studies were completed in White individuals, and the applicability of this evidence to high-risk ethnic populations is unclear.

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