

Appendix 2: Efficacy and cost-effectiveness of interventions for preventing and treating diabetes in developed countries

Strategy	Benefit	Quality of evidence*	Cost-effectiveness ratio, in 2002 US\$ per QALY†	Reference‡
Preventing type 2 diabetes				
Lifestyle interventions	35%-58% reduction in incidence of diabetes among people at high risk	I	1 100	Diabetes Prevention Program Research Group ¹
Metformin therapy	25%-31% reduction in incidence of diabetes among people at high risk	I	31 200	Diabetes Prevention Program Research Group ¹
Screening for undiagnosed type 2 diabetes in the general population	25% reduction in incidence of microvascular disease	III	73 500	CDC Diabetes Cost-Effectiveness Group ²
Treating diabetes and its complications				
Moderate glycemic control in people with HbA _{1c} > 9%	30% reduction in incidence of microvascular disease per 1% drop in HbA _{1c}	I	Cost saving	CDC Diabetes Cost-Effectiveness Group ²
Intensive glycemic control (reduce HbA _{1c} to < 8%) if HbA _{1c} between 8% and 9%	30% reduction in incidence of microvascular disease per 1% drop in HbA _{1c}	I	34 400	CDC Diabetes Cost-Effectiveness Group ²
Blood pressure control if pressure > 160/95 mm Hg	35% reduction in incidence of macrovascular and microvascular disease per 10 mm Hg drop in blood pressure	I	Cost saving	Klonoff and Schwartz; ³ CDC Diabetes Cost-Effectiveness Group ²
Cholesterol control if total cholesterol > 200 mg/dL	25%-55% reduction in rate of coronary artery disease events; 43% reduction in death rate	II-1	63 200	CDC Diabetes Cost-Effectiveness Group ²
Smoking cessation	16% quitting rate	I	12 500	Earnshaw ⁴
Annual screening for microalbuminuria	50% reduction in incidence of nephropathy (with ACE inhibitor use for identified cases)	III	47 400	Klonoff and Schwartz ³
Annual eye examination	60%-70% reduction in incidence of serious vision loss	I	6 000	Klonoff and Schwartz; ⁵ Vijan et al ⁶
Foot care in people at high risk of ulcers	50%-60% reduction in incidence of serious foot disease	I	Cost saving	Ragnarson and Apelqvist ⁷
ASA use	28% reduction in incidence of myocardial infarction; 18% reduction in incidence of cardiovascular disease	I	NA	
ACE inhibitor use	42% reduction in incidence of nephropathy; 22% reduction in incidence of cardiovascular disease	I	8 800	Golan et al ⁸
Influenza vaccinations for elderly people with type 2 diabetes	32% reduction in hospital admissions; 64% reduction in combined incidence of respiratory conditions and death	II-2	3 100	Sorensen et al ⁹
Preconception care for women of reproductive age	30% reduction in hospital charges; 25% reduction in hospital days	II-2	Cost saving	Klonoff and Schwartz ³

Note: NA = not available, ACE = angiotensin-converting enzyme.

*I = evidence from at least one randomized controlled trial, II-1 = evidence from a well-designed, controlled trial without randomization; II-2 = evidence from cohort or case-control studies; II-3 = evidence from multiple time series; III = opinions of respected authorities.¹⁰

†Cost-effectiveness ratios were adjusted to 2002 US dollars using the consumer price index for medical care. In cases where there were multiple studies evaluating the cost-effectiveness of an intervention, the median cost-effectiveness ratio is reported.

‡See next page for the list of references.

References

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