A Tale of Two Brothers: A Virtual Case Study

Call them Dan and Dave. Identical twins. They did everything together—sports, college, even the Army. And both were always in good health. In their mid-thirties, that changed. Dave started feeling very tired and started losing weight. Dan had blurred vision, as well as fatigue. So they decided to see their doctors. The results they got were identical: diabetes. Their doctors told each of them to get exercise, manage their diet, and monitor their blood sugar. Both were also told to get follow-up lab tests because diabetes often leads to kidney, eye, and cardiovascular problems. Here's how Dave and Dan dealt with diabetes.

		Years 1–5	Year 6	Year 10	Year 15	Year 20
Dave	Health Effects	Exercises, maintains healthy diet, monitors glucose level. Visits physician for kidney, liver, urine tests.	Continues exercise, healthy diet. Continues monitoring glucose levels and sees physician regularly for kidney, liver, urine tests.	Continues daily glucose monitoring. Maintains careful diet, exercise. Because glucose is above acceptable level, doctor prescribes oral diabetes medication.	Continues careful management through diet and exercise. Visits physician regularly for diabetes tests. Continues oral medication. Doctor finds reduction in blood glucose reading, adjusts medication	Visits physician for regular diabetes tests, which shows modest increase in blood pressure but all other tests okay. Continues careful diet and exercise.
	Costs	Costs of diabetes controlled without medication = $1,684 per year		Costs of diabetes controlled with oral medication = $1,852 per year	Reduction in blood glucose level = $685–$950 savings per year	
Dan	Health Effects	Exercises and maintains healthy diet for 6 months, but then stops. Discontinues glucose monitoring after one month. Fails to get kidney and eye tests.	Feels shortness of breath, dizziness. Goes to emergency room. Lab tests show high blood glucose and early kidney disease. Doctor prescribes medications to control diabetes, lower cholesterol, and slow kidney disease. Takes medication for two months, but then stops. Fails to exercise or manage diet.	Collapses at work, rushed to hospital. Doctors diagnose heart attack; perform bypass surgery to open blocked arteries. Lab tests also show high blood glucose, high blood pressure, and elevated LDL cholesterol, as well as further kidney deterioration. Doctor prescribes cholesterol- and blood-pressure-reducing medication. Takes medications sporadically, continues high-fat diet.	Visits doctor because sore on foot refuses to heal. Tests show nerve damage in the leg and failing kidneys, and peripheral artery disease. Undergoes leg artery bypass surgery because of dangerous blockage. Physician increases medications for cholesterol and blood pressure and increases kidney medication to reduce swelling in feet.	Goes onto dialysis because kidneys fail. Undergoes amputation of right leg below the knee because nerve damage prevents leg sores from healing.
	Costs			Heart attack = $27,630, plus $2,185 per year	Peripheral artery disease = $5,955 per year	Dialysis = $53,659 per year Amputation = $26,894 plus $1,739 per year

Sources on Costs: O'Brien, Diabetes Care, 1998; Brandle, Diabetes Care, 2003; Margolis, Journal of Managed Care Pharmacy, 2005; Testa, Journal of American Medical Association, 1998; American Diabetes Association, Diabetes Care, 2003.