

The UKPDS Life Expectancy Calculator for Individuals with Type 2 diabetes

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Ten-year cardiovascular disease risk estimates are often used in individuals with Type 2 diabetes to aid management decisions and to inform patients. However, life expectancy estimates may have greater resonance for some patients and would have greater relevance for setting individually fair rates for annuity payments and life insurance premiums, calculating compensation payments and helping patients with financial planning for example in complying with current inheritance tax laws that require assets to be gifted seven years prior to death.

The UKPDS Outcomes Model is a validated computer simulation model designed to assess the total burden of disease over an extrapolated lifetime for populations with Type 2 diabetes using readily available demographic and risk factor data and derive life expectancies with 95% confidence intervals (CIs). We have ported and adapted the software to produce the UKPDS Life Expectancy Calculator that can run the complex simulations required rapidly enough for it to be used on most computing platforms.

We used the calculator to estimate life expectancy for a 60 year old White Caucasian male smoker with known Type 2 diabetes for six years, HbA_{1c} 7.5%, systolic blood pressure 131 mmHg, total cholesterol 3.8 mmol/l, HDL-cholesterol 1.2 mmol/l. His estimated life expectancy is 11.7 years (95%CI 10.7-12.7) whereas his estimated 10-year fatal CVD risk (UKPDS Risk Engine v3) is 7.9% (95%CI 6.4-9.7). The UKPDS Life Expectancy Calculator provides an alternative way of assessing fatal CVD risk that could be of value to patients, clinicians and financiers when validated at the individual patient level.