

## **Framingham Equations Underestimate Cardiovascular Risk Compared with the UKPDS Risk Engine in People with Type 2 Diabetes.**

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Diabetic Medicine (2007); **24**: (suppl 1): 55

We compared 10-year total and fatal cardiovascular disease (CVD) risk estimates, calculated using the UKPDS Risk Engine and Framingham equations, for 4030 subjects with established Type 2 diabetes enrolled into the Lipids in Diabetes Study. Subjects were mean (SD) age 60.7 (8.6) years, systolic blood pressure 141 (17) mmHg, total:HDL-cholesterol ratio 3.9 (1.0) with median (IQR) diabetes-duration 6.0 (3.0-11.0) years and HbA1c 8.0 (7.2-9.0) %. There were 65% men, 91% white Caucasians, 4% Afro-Caribbeans, 5% Indian-Asians, 15% current smokers, 0.57% with atrial fibrillation and 0.92% with left ventricular hypertrophy. Estimated 10-year UKPDS Risk Engine and Framingham equation total CVD risks were median (IQR) 35% (23-51) and 29% (20-37) respectively, with estimated fatal CVD risks of 18% (9-32) and 8% (4-14) respectively. Framingham estimates for total and fatal CVD risks were significantly lower than UKPDS Risk Engine estimates by median 7% (1-15) and 8% (3-19) respectively (both Sign test: P less than 0.00001). UKPDS Risk Engine estimates of the proportion of subjects with a total CVD risk above 20% were 82% compared with 75% for Framingham (P less than 0.00001), suggesting some 7% of subjects above the NICE guideline for introducing statin therapy may not be identified by the Framingham equations.