# Longer Duration of Type 2 Doubles CHD Risk

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Among older white men, coronary heart disease risk is approximately twice as high in those who developed type 2 diabetes relatively early in adulthood and have had the disease for more than 8 years, compared with those who developed it later and have had it for fewer than 8 years, a study has shown.

In older white men with an earlier onset and a longer duration of type 2 diabetes, the risk of CHD events is equivalent to that of nondiabetic men who had already had prior myocardial infarction,

**The risks for vascular events and mortality in men with early onset of diabetes 'were comparable to those in men with prior MI.'**

said S. Goya Wannamethee, Ph.D., of the department of primary care and population health, University College London, and associates.

"Although diabetes is a well-established risk factor for CHD, whether diabetes alone is a CHD equivalent in assessing the risk of future cardiovascular events [has been] controversial. ... Our observations plus prior research [suggest] that CHD risk in patients with diabetes escalates significantly with disease duration and approaches CHD risk equivalence only when disease duration is beyond 8 years," they noted.

Dr. Wannamethee and colleagues examined the relationship among age of diabetes onset, duration of disease, and cardiovascular risk using data from the British Regional Heart Study (BRHS), a prospective assessment of cardiovascular disease in 7,735 white men aged 40-59 years at enrollment in 1978-1980 who were recruited from general practices in 24 British towns. For this analysis, data were assessed on 4,045 of these subjects who were 60-79 years of age at the 20-year mark of the BRHS and were followed for all-cause mortality and CHD morbidity for a mean of 9 more years.

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During that time there were 372 major CHD events, including 263 CHD deaths.

Men with an early onset of type 2 diabetes, with a diagnosis at or before age 60, had a mean duration of disease of 16.7 years. Their CHD risk was approximately twice that of men who had a later onset, with a diagnosis after age 60 and a mean duration of disease of 4.9 years.

"Moreover, the [relative risk] for vascular events and mortality in [men] with early onset of diabetes were comparable to those in men with prior MI, suggesting that a longer duration of diabetes may be necessary to raise risks toward a

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**Major Finding:** Men who developed diabetes at or before age 60 and had the disease for at least 8 years had nearly twice the risk of a major cardiovascular event (relative risk 1.95) than did men who developed diabetes at a later age and had it for fewer than 8 years.

**Data Source:** Analysis of data on 4,045 subjects participating in a prospective study of cardiovascular disease in older, white British men.

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CHD risk equivalent," the investigators said (Arch. Intern. Med. 2011;171:404-10).

These findings should go a long way toward resolving the confusion and debate over the issue, and explain why previous studies that did not specifically address age of onset or disease duration have yielded conflicting results, the researchers noted.

"The clinical implication is that, although 10-year CHD risk for newly diagnosed diabetes may not be very high, CHD risk beyond 10 years or indeed lifetime risk will be much higher. This pattern ... emphasizes the need to be aggressive with CHD risk reduction [that is, statin use and blood pressure modification] in patients with type 2 diabetes diagnosed at a relatively young age," Dr. Wannamethee and associates said.

"Finally, neither adjustment for traditional risk factors nor a range of novel risk factors (including markers of inflammation, endothelial dysfunction, and renal dysfunction) explained the excess CHD risk in patients with known diabetes, particularly in those with early onset. These men still showed an almost threefold increase in risk after adjustment," compared with men who did not have diabetes.

Future studies of this issue must examine whether the findings hold true in women and people of nonwhite ethnicities, they added.

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