Major journals

LANCET

Over 40 year-olds at higher risk of developing CV disease

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓✓

1 The age at which adults with diabetes become at risk of developing cardiovascular disease (CVD) is unknown. Historically, it has been assumed that this population is clearly at risk of CVD, without regard to age.

2 This population-based cohort study aimed to ascertain whether and, if so, at what age adults with diabetes became at risk of developing CVD.

3 A total of 379003 people with diabetes and 9018082 people without were identified from the Registered Persons Database of Onatrio, Canada. All people were eligible for care under the Ontario Health Insurance Plan on 1 April 1994. All were >20-years-old. All were followed up from 01.04.1994 to 31.03.2000 for the recording of CV events.

4 Hospital records were used to identify admissions for acute myocardial infarction, stroke or related death.

5 For younger people with diabetes the condition appears to confer a risk of developing CVD that is equivalent to ageing by 14.6 years.

6 The authors found that diabetes does not seem to confer a risk of CVD upon those under 40 years old.

7 The authors conclude that age should be taken into account when targeting populations with diabetes for CVD risk reduction.

Booth GL, Kapral MK, Fung K, Tu JV (2006) Relation between age and cardiovascular disease in men and women with diabetes compared with non-diabetic people: a population-based retrospective cohort study. *Lancet* **368**(9529): 29–36

At what age do people with diabetes become susceptible to developing cardiovascular disease?

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A number of studies have suggested that for middle-aged people with type 2 diabetes the risk of sustaining a myocardial infarction (MI) is equivalent to that of the risk of a person without type 2 diabetes with cardiovascular disease (CVD) who has already sustained an acute myocardial infarction (Haffner et al, 1998). The relationship between age and the risk of an acute MI in people with diabetes is less clear. A recently published population-based retrospective cohort study by Booth and colleagues (summarised on left) addressed this lack of evidence. They also ascertained the ageing equivalent of diabetes-associated cardiovascular risk and the effect of diabetes on gender-related differences in CVD.

Booth and colleagues used two definitions of high risk: a fatal or non fatal CVD event rate equivalent to a 10-year risk of 20% or more; and a rate of coronary heart disease equivalent to that of a previous acute MI event. All residents of Ontario, Canada, aged 20 years and over who were eligible for coverage under the Ontario Health Insurance plan on 1 April 1994 were evaluated. Diabetes status was determined using the Ontario Diabetes Database. These individuals were compared to those without diabetes (those who developed type 2 diabetes during follow-up were excluded from the final analysis).

The population was followed up from 1 April 1994 to 31 March 2000. Information on revascularisation procedures were obtained from hospital records. The population consisted of 379003 people with and 9018082 without diabetes. In both populations the risk of acute MI increased with age. People with diabetes who had previously sustained a cardiovascular event were about 15 years younger than those without in the same risk category.

Of particular interest when comparing the relationship between age and rates of CVD in men and women with and without diabetes is that the lines of best fit for men without diabetes who had had a recent acute MI and for those with diabetes who had not were almost identical. In younger men and women with diabetes this relationship was not present – the patients with diabetes being at lower risk than patients of similar age who had sustained an acute MI. Comparing people with type 2 diabetes to age-matched people without diabetes demonstrated that age-adjusted rates for acute MI and all-cause mortality were up to four times higher. Women with diabetes aged 20–34 had a 40-times higher risk of acute MI than age-matched controls.

This important study confirms the higher risk of CVD in people with diabetes and illustrates the important effect of ageing on this relationship. For both men and women diabetes confers an equivalent risk of CVD as ageing 15 years. Young adults with diabetes have rates of CVD 12–40 times higher than people without diabetes. The study has a number of limitations including no record of secondary prevention therapies and the inability to distinguish between type 1 and type 2 diabetes. Nevertheless this large study adds substantially to our knowledge of the natural history of diabetes in relation to CVD and acute MI. It also illustrates how far we have to go before we can say we are successfully addressing CVD risk in people with diabetes.

Haffner SM, Lehto S, Ronnemaa T et al (1998) Mortality from coronary heart disease in subjects with type 2 diabetes and in nondiabetic subjects with and without prior myocardial infarction. *New England Journal of Medicine* **339**(4): 229–34

As this is my last commentary for this journal I would like to say how much I have enjoyed reading and writing about some of the best research on type 2 diabetes – due to a new and more demanding role I am unable to give it my all from now on.

This paper (Booth et al, 2006; summarised on left) hits home that, despite the hundreds of papers written about cardiovascular disease in people with type 2 diabetes, we still have much to learn and understand about this serious complication of what, over the last decade, has emerged as a condition that should be treated by both cardiologists and diabetologists.

'Although the authors acknowledge that this study was not equipped to explore possible causal mechanisms for the observed relationship, they say that decaffeinated coffee consumption appears to lower the risk of developing type 2 diabetes.'

ARCHIVES OF INTERNAL MEDICINE

Coffee lowers risk of developing type 2 diabetes

Readability	✓✓✓✓✓
Applicability to practice	✓✓✓✓✓
WOW! factor	✓✓✓✓

1 Other studies have shown that coffee consumption lowers the risk of developing type 2 diabetes. However, it has yet to be established whether the caffeine component has any effect on this.

2 This study used a baseline food frequency questionnaire, sent out in 1986, to establish total, caffeinated and decaffeinated coffee consumption in 28812 post-menopausal women from the Iowa Women's Health Study and its association with the risk of developing type 2 diabetes. Coffee intake was noted as 0, less than 1, 1 to 3, 4 to 5 or more than 6 cups a day.

3 In four follow-up questionnaires (in 1987, 1989, 1992 and 1997) participants were asked to self-report diagnosis of 'sugar diabetes'. Response rates were 91%, 89%, 86% and 79%, respectively.

4 A total of 1418 women reported incident diabetes during the 11 years of follow up. Compared with those who drank 0 cups a day, those who drank more than 6 cups a day had a 22% lower risk of developing diabetes (relative risk [RR]=0.78; 95% confidence interval [CI], 0.61–1.01. *P* for trend 0.06).

5 This association was chiefly explained by decaffeinated coffee (RR=0.67; 95%, 0.42–1.08. *P* for trend 0.006) rather than regular coffee (RR=0.79; 95% CI, 0.59–1.05. *P* for trend 0.90).

6 Although the authors acknowledge that this study was not equipped to explore possible causal mechanisms for the observed relationship, they say that decaffeinated coffee consumption appears to lower the risk of developing type 2 diabetes.

Pereira MA, Parker ED, Folsom AR (2006) Coffee consumption and risk of type 2 diabetes mellitus: an 11-year prospective study of 28 812 postmenopausal women. *Archives of Internal Medicine* **166**(12): 1311–6

AMERICAN JOURNAL OF MEDICINE

Aggressive management of diabetes in HF?

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 This study took a random sample of 665 people with a first diagnosis of heart failure (HF) between 1979 and 1999 to assess whether diabetes has any prognostic or prevalence importance in a community population.

2 In this population the risk of death was significantly higher in those with diabetes and no clinical coronary artery disease (*P*=0.025). This was independent of age, sex, body mass index, renal function, and year of first heart failure event.

3 The authors conclude that this is reason enough for the aggressive management of diabetes in people with a history of heart failure.

From AM, Leibson CL, Bursi F et al (2006) Diabetes in heart failure: prevalence and impact on outcome in the population. *American Journal of Medicine* **119**(7): 591–9

BMJ

MI patients cared for by cardiologists better off

Readability	✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓✓

1 This study aimed to evaluate outcomes of patients admitted with acute myocardial infarction (MI) in relation to whether they were seen by a cardiologist or other healthcare professional and to facilities available at the hospital.

2 Patients who were cared for by cardiologists had a significantly lower adjusted rate of death within 90 days, they were more likely to receive specialist treatments such as reperfusion, angiography, and appropriate secondary prevention drugs.

3 The authors found that relatively more patients underwent angiography in hospitals with coronary intervention facilities. Adjusted 90-day death rates did not differ significantly between hospital type.

4 The authors conclude that their data raises some important questions related to the equity of care in hospitals in England and Wales.

Birkhead JS, Weston C, Lowe D (2006) Impact of specialty of admitting physician and type of hospital on care and outcome for myocardial infarction in England and Wales during 2004-5: observational study. *BMJ* **332**(7553): 1306–11

ARCHIVES OF INTERNAL MEDICINE

Novel risk markers for CHD do not improve existing prediction models

Readability	✓✓✓✓
Applicability to practice	✓✓✓✓
WOW! factor	✓✓✓

1 The addition of new risk markers (such as carotid intima media thickness) or blood markers (such as C-reactive protein [CRP]) to existing coronary heart disease (CHD) prediction models was assessed for their ability to better the models' prediction rates.

2 The basic model included traditional risk markers such as diabetes and smoking status.

3 CRP or many of the other newer risk markers did not add significantly to the model's prediction rate. Therefore, their routine use in the clinical setting is not warranted.

Folsom AR, Chambless LE, Ballantyne CM et al (2006) An assessment of incremental coronary risk prediction using C-reactive protein and other novel risk markers: the atherosclerosis risk in communities study. *Archives of Internal Medicine* **166**(13): 1368–73