

Cardiovascular journals

Physical inactivity: A major independent risk factor for CHD in south Asian people



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It is well known that south Asian people have an increased risk of coronary heart disease (CHD) compared with other ethnic groups (Fischbacher et al, 2007). Although the INTERHEART Study attributed this excess risk to increased rates of conventional risk factors (Joshi et al, 2007), there is new evidence from London to suggest that this excess risk is not explained by the increased prevalence of diabetes and other factors such as hypertension and dyslipidaemia.

The observational, longitudinal study by Williams et al (2011; summarised alongside), which comprised 13 293 white and 2120 south Asian participants, suggests that this excess risk may be due to physical inactivity. An excess of CHD mortality was shown to be increased by 44% in the Indian south Asian population, albeit

non-significantly. However, in the Pakistani/Bangladeshi population, this was significantly increased by 87%. Activity levels explained 41% of the excess CHD mortality. Of the white population, 28% reported no exercise on a weekly basis. The figure for the UK Indian cohort was 37%, and this was significantly higher in the UK Pakistani/Bangladeshi cohort at 57%.

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This study highlights the need for attention to the full panoply of risk factors for CHD reduction, generally and specifically, in the south Asian population. An important heterogeneity has been demonstrated within the south Asian population itself. This study will help fine-tune the risk profile of a community to optimise CHD reduction.

Fischbacher CM, Bhopal R, Povey C et al (2007) Record linked retrospective cohort study of 4.6 million people exploring ethnic variations in disease: myocardial infarction in South Asians. *BMC Public Health* 7: 142

Joshi P, Islam S, Pais P et al (2007) Risk factors for early myocardial infarction in South Asians compared with individuals in other countries. *JAMA* 297: 286–94

HEART

Physical inactivity explains excess CHD risk in UK south Asian people

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

1 This observational, longitudinal study aimed to assess the contribution of physical inactivity to the excess coronary heart disease (CHD) mortality observed in the UK south Asian population.

2 Data from the Health Survey of England (1999 and 2004) were used, along with follow-up mortality data from the NHS Central Register.

3 Participants ($n=15\,413$) comprised 13 293 white people (mean age, 56.3 ± 14.1 years; 44.4% male), 1244 Indian people (mean age, 49.3 ± 11.1 years; 52.8% male), and 876 Pakistani/Bangladeshi people (mean age, 48.5 ± 11.4 years; 79.8% male).

4 The primary outcome measure was deaths from CHD.

5 South Asian participants were more likely to be physically inactive than their white counterparts (47.0% vs

28.1%). CHD-related deaths were more common in the south Asian participants than in white participants, particularly among Pakistani and Bangladeshi people (hazard ratio [HR], 2.87; 95% confidence interval [CI], 1.74–4.73).

6 Pakistani and Bangladeshi people died at an age >10 years younger than white participants.

7 After adjustments for potential confounding variables, physical inactivity was found to explain >20% of the excess CHD mortality in the south Asian participants.

8 The authors concluded that physical inactivity makes a significant contribution to the excess CHD mortality in the UK south Asian population.

Williams ED, Stamatakis E, Chandola T, Hamer M (2011) Physical activity behaviour and coronary heart disease mortality among South Asian people in the UK: an observational longitudinal study. *Heart* 97: 655–9

STROKE

New guidelines for the primary prevention of stroke

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

1 The authors of these new guidelines from the American Heart Association (AHA) and American Stroke Association aimed to provide an overview of the evidence on established and emerging risk factors for stroke to provide evidence-based recommendations for the prevention of first stroke.

2 Systematic literature reviews, personal files, reference to

published guidance and expert opinion were used to summarise the current evidence base and produce recommendations.

3 The guidelines classify risk factors and markers for a first stroke according to potential for modification (non-modifiable, such as age and sex; modifiable, such as hypertension, smoking and diabetes; or potentially modifiable, such as metabolic syndrome, alcohol consumption and drug abuse) and strength of evidence.

4 The authors concluded that extensive evidence identifies a number of factors that increase the risk of a first stroke and that provide strategies for reducing that risk.

Goldstein LB, Bushnell CD, Adams RJ et al (2011) Guidelines for the primary prevention of stroke: a guideline for healthcare professionals from the American Heart Association/American Stroke Association. *Stroke* 42: 517–84

JOURNAL OF THE AMERICAN COLLEGE OF CARDIOLOGY

Lipids, pioglitazone and atheroma progression

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

1 This study aimed to identify the factors associated with the beneficial effect of pioglitazone (pio) on coronary atheroma progression in 360 people with T2D and coronary artery disease (CAD).

2 Participants were treated with pio ($n=179$) or glimepiride ($n=181$) for 18 months and atheroma progression was evaluated.

3 Greater increases in HDL-cholesterol (HDL-C) and reductions in HbA_{1c}, triglycerides and C-reactive protein levels were observed in the pio-treated group compared with the glimepiride group.

4 Significant associations were seen between changes in percent atheroma volume and triglycerides ($r=0.15$; $P=0.04$), triglyceride/HDL-C ratio ($r=0.16$; $P=0.03$) and HbA_{1c} ($r=0.16$; $P=0.03$) with pio, and changes in LDL-cholesterol ($r=-0.15$; $P=0.05$), apolipoprotein B ($r=-0.04$; $P=0.04$) and apolipoprotein A-I ($r=-0.20$; $P=0.01$) with glimepiride.

5 Atheroma regression was associated with greater relative increases in HDL-C ($P=0.04$), decreases in triglycerides ($P=0.045$), triglyceride/HDL-C ratio ($P=0.05$) and decrease in HbA_{1c} ($P=0.01$).

6 Beneficial effects of pio on the triglyceride/HDL-C ratio correlated with delayed atheroma progression. The authors concluded that this highlights the importance of targetting dyslipidaemia in people with T2D and CAD.

Nicholls SJ, Tuzcu EM, Wolski K et al (2011) Lowering the triglyceride/high-density lipoprotein cholesterol ratio is associated with the beneficial impact of pioglitazone on progression of coronary atherosclerosis in diabetic patients: insights from the PERISCOPE (Pioglitazone Effect on Regression of Intravascular Sonographic Coronary Obstruction Prospective Evaluation) study. *J Am Coll Cardiol* **57**: 153–9

EUROPEAN HEART J

Estimating modifiable CHD risk: INTERHEART Modifiable Risk Score

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

1 Using modifiable risk factors from the INTERHEART case-control study ($n=19\,470$), the authors aimed to devise and validate a new risk score for myocardial infarction (MI).

2 The INTERHEART Modifiable Risk Score (IHMSR) was developed,

which included apolipoproteins, hypertension, diabetes, smoking and second-hand smoke exposure.

3 Validation studies showed an area under the receiver-operating characteristic curve c -statistic of 0.71 (95% confidence interval, 0.70–0.72).

4 In a large cohort of people at low risk of CVD, the IHMSR was positively associated with incident MI (12% increase in MI risk with a 1-point increase in score). The IHMSR was concluded to be a validated and simple score for MI risk.

McGorrian C, Yusuf S, Islam S et al (2011) Estimating modifiable coronary heart disease risk in multiple regions of the world: the INTERHEART Modifiable Risk Score. *Eur Heart J* **32**: 581–9

AM J HYPERTENSION

Afternoon BP increase associated with microvascular complications in T2D

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

1 The authors explored whether an afternoon (AN) blood pressure (BP) peak is linked to hypertension and microvascular complications in T2D.

2 The cohort ($n=207$) was split into Group A (AN BP >group median) or Group B (AN BP <group median).

3 A higher prevalence of diabetic retinopathy (DR) was observed in Group A than Group B for both systolic ($P=0.004$) and diastolic ($P=0.04$) BP.

4 Increments in afternoon BP correlated significantly with urinary albumin excretion rate.

5 An increase in afternoon BP was observed, regardless of hypertension status, and it was concluded that this increase was associated with increased prevalence of DR but not nephropathy.

Kramer CK, Leitão CB, Canani LH, Gross JL (2011) Afternoon blood pressure increase: a blood pressure pattern associated with microvascular complications in type 2 diabetes mellitus. *Am J Hypertens* **24**: 64–9

INT J CARDIOLOGY

Decline in CHD mortality rate in Australia slowing

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

1 A study was undertaken to explore whether a slowing in the decline in coronary heart disease (CHD) mortality rates seen in young adults in the UK and USA could be seen in Australia.

2 CHD mortality rates for those ≥ 25 years declined by 73% in men

and 70% in women between 1976 and 2006 in the total Australian population.

3 From 1991–1994, a slowing in the fall in mortality rates was observed in men aged 25–54 years, with rates essentially flat in those aged 25–34 years; similar patterns were observed in women aged 25–54 years with significant slowdowns in the rate of decline between 1980 and 1991.

4 The authors concluded that CHD mortality decline has slowed in young Australian men and women since the early 1990s.

O'Flaherty M, Allender S, Taylor R et al (2011) The decline in coronary heart disease mortality is slowing in young adults (Australia 1976–2006): A time trend analysis. *Int J Cardiol* [Epub ahead of print]

“In a large cohort of people at low risk of cardiovascular disease, the INTERHEART Modifiable Risk Score was positively associated with incident myocardial infarction.”