

# Cardiovascular disease in the Asia–Pacific region: challenges for health research and policy

*Risk factors and diseases in developing countries are becoming “westernised”*

CARDIOVASCULAR DISEASE is usually considered to be the scourge of wealthy countries. However, the recent *World health report*<sup>1</sup> draws attention to the increasing importance of cardiovascular disease in developing countries. The report identifies principal risk factors and diseases in regions of the world divided into three categories: developed countries, developing countries with low mortality rates, and developing countries with high mortality rates.

It is no surprise that the leading risk factors contributing to disease, disability and death in developed countries are tobacco consumption, high blood pressure, high cholesterol level, overweight, low fruit and vegetable intake, and physical inactivity (Box 1). Coronary heart disease is the leading cause of death and disability, and stroke ranks third.

In developing countries with high mortality rates (eg, Nepal, Myanmar, the Maldives and numerous African countries), factors such as underweight and unsafe sexual practice are more important than risk factors for non-communicable diseases. Nevertheless, tobacco consumption, high blood pressure and high cholesterol levels are still responsible for substantial morbidity and mortality (Box 1). The five leading causes of death and disability in these countries are HIV/AIDS, lower respiratory tract infections, diarrhoeal diseases, childhood diseases and low birthweight — coronary heart disease ranks eighth.

Countries between these two extremes have rapidly changing profiles. In these low-mortality developing countries (eg, Cambodia, China, and Fiji), “developed country”

factors have already outstripped traditional “developing country” factors in terms of importance for overall disease, disability and death (Box 1). In these countries, the juxtaposition of underweight with overweight as the fourth and fifth leading risk factors, respectively, starkly exemplifies the “double burden of disease” they carry. Following an upsurge in “developed country” risk factors in these countries, stroke is now the second most important cause of disability and death, and coronary heart disease the sixth.

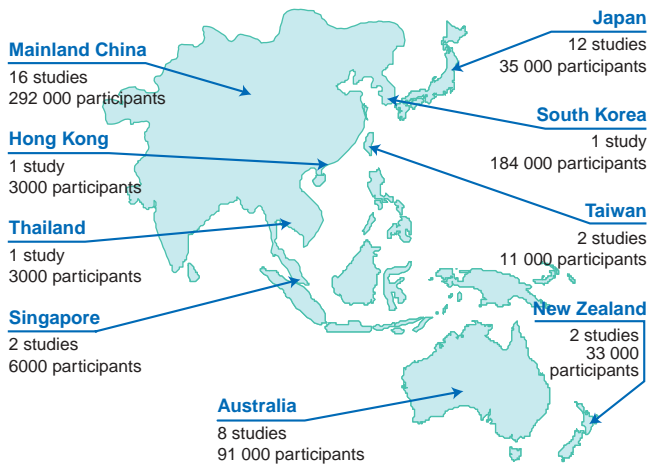
Unfortunately, the health services of low-mortality developing countries have not been able to adjust quickly enough to these changing disease profiles. The lack of epidemiological data on diseases and risk factors has hampered appropriate health service development and responses. A number of Australian organisations, including the Institute for International Health (IIH) at the University of Sydney,<sup>2</sup> are trying to address these issues, with a focus on our neighbours in Asia and the Pacific region. The IIH has recently introduced initiatives, involving data collection and analysis, as well as technology transfer and capacity development, with partners in China, India and Thailand.<sup>3,4</sup> The IIH has also worked with Asia–Pacific partners in multicentre trials and epidemiological studies, including the Asia Pacific Cohort Studies Collaboration (APCSC).

The APCSC is a collaborative project that seeks to pool data from existing longitudinal studies with information on cardiovascular disease in the region. The project database now has data on 659 000 adults in eight countries (Box 2),

**1: The 10 leading selected risk factors for death and disability, by type of country<sup>1</sup>**

	High-mortality developing countries	Low-mortality developing countries	Developed countries
1	Underweight	Alcohol consumption	Tobacco consumption
2	Unsafe sexual practices	High blood pressure	High blood pressure
3	Unsafe water, poor sanitation and poor hygiene	Tobacco consumption	Alcohol consumption
4	Indoor smoke from solid fuels	Underweight	High cholesterol level
5	Zinc deficiency	Overweight	Overweight
6	Iron deficiency	High cholesterol level	Low fruit and vegetable intake
7	Vitamin A deficiency	Low fruit and vegetable intake	Physical inactivity
8	High blood pressure	Indoor smoke from solid fuels	Illicit drug use
9	Tobacco consumption	Iron deficiency	Unsafe sexual practices
10	High cholesterol level	Unsafe water, poor sanitation and poor hygiene	Iron deficiency

**2: Geographical distribution of studies presently included in the Asia Pacific Cohort Studies Collaboration**



and show that the risk factors applicable in Australia are just as important elsewhere. This is a crucial finding that has not previously been established with large numbers. For instance, the analyses show that people with diabetes are about twice as likely to die from heart disease or stroke, regardless of whether they live in Asia or Australasia.<sup>5</sup> Increasing levels of obesity across the region will lead to a considerable increase in diabetes and its sequelae, such as cardiovascular disease. Further, the research shows that younger people with diabetes have much larger excess risks for cardiovascular disease than older people. Asia, with its predominantly young population, can thus expect an even greater increase in cardiovascular disease than that anticipated in Australia.

The challenge now is to use the results from the APCSC, and other relevant studies, as a starting point for tackling the global problem of cardiovascular disease highlighted by the *World health report*.<sup>1</sup> In developing countries, substantial health gains can be made for relatively modest expenditures. In human terms, this means that much ill-health and millions of premature deaths can be avoided. As far as cardiovascular disease is concerned, a necessary step will be to develop accurate risk algorithms, specific to local situations.<sup>8</sup> These algorithms would help in developing treatment and prevention strategies to target overall risk. For example, strategies to reduce salt intake and lower cholesterol level have been shown to be very cost-effective.<sup>1</sup> Blood-pressure-lowering drugs are likely to benefit not only people with hypertension, but also normotensive people at high risk of cardiovascular disease.<sup>9</sup> The ultimate aim will be to develop strategies with maximum benefit for minimum cost. This is especially the case in developing countries, where the conflicting demands on a meagre pool of resources make the need for cheap, finely-targeted strategies absolutely crucial.

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