

The data collected when compared with age matched reference data revealed a number of differences in the variables measured. Further analysis should focus on the identification of which anthropometric characteristics, if any, differentiated medal winners at the Junior World Championships and their less successful counterparts. By developing such a profile, in addition to the anthropometric profile chart presented in the study, it may be possible to discern which anthropometric characteristics, if any, are important to rowing performance in Junior rowers and therefore worth measuring from a sports specific perspective. This may have profiling implications in terms of talent identification and development of young rowers as previous research in this area has almost exclusively focused on adult rowers.

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Sporting miscellany

Jerry Morris: pathfinder for health through an active and fit way of life

We extend greetings and best wishes to Jeremy Noah Morris on the occasion of his 90th birthday celebration, 6 May 2000. Professor Morris, better known as Jerry, was born in Liverpool, educated in Glasgow and London, and today is Emeritus Professor of Public Health at the London School of Hygiene and Tropical Medicine. He is a renowned physician-epidemiologist who has made landmark scientific contributions to our understanding of physical exercise and dietary intake as they affect risk of developing coronary heart disease (CHD, or heart attack), and to our understanding of the role of social inequalities in risk of disease. As a protagonist, he has worked tirelessly to develop public policies to prevent disease, promote good health, and overcome those social factors that predispose to disease and limit access to health care. Based on three long term studies over the last half century, one of London transport workers and two of executive grade British civil servants, Jerry Morris has demonstrated conclusively that a physically active and physiologically fit lifestyle lowers risk of heart attack and prolongs high quality living. On the basis of his observations on occupational work and leisure time recreation, Professor Morris is generally considered a guiding spirit to good health through modern day sports medicine and exercise science. Here I summarise briefly some of the pertinent findings from three of his seminal studies.

The first study by Morris and his colleagues was of transport workers, which showed that highly active conductors in double decker buses were at lower risk of CHD than drivers who sat through their shifts at steering wheels. If conductors did develop the disease, it was less severe and occurred at later ages. Morris *et al* also found that postmen delivering the mail on foot had similarly lower CHD rates than sedentary postal clerks and telephonists. Analysing national death rates in an early test of their hypothesis, the Morris team found gradient levels of CHD with occupations of intermediate physical activity.

Realising that the connection between sedentary living and heart attack risk could be a two way street—that is, sedentary habits could be both a cause and an effect of heart attack—Morris and his associates effectively attacked potential selective and confounding characteristics. In a wide range of observations, they found confirmatory differences at autopsy in the hearts of men corresponding to the physical activity entailed in their jobs. Also, blood pressure levels were lower in the conductors, and at the same levels of blood pressure they suffered fewer heart

attacks than the drivers. Bus drivers were indeed more obese, but their rate of sudden heart attack death was higher, whatever their physique.

In a second pioneering study, Morris and associates chose middle aged civil servants free of clinical CHD who held sedentary desk jobs and traced them over time for CHD occurrence and death. Contrary to expectation, no benefit in lower heart attack incidence was found from high totals of leisure time physical activity. Instead, men engaging in vigorous exercise (defined as liable to reach peaks of 7.5 kcal per minute—for example, running at about 6 mph) did manifest less than half the disease of their fellow workers, who were comparable in health status and health habits. Morris *et al* also found that the rise with age in both fatal and non-fatal first heart attacks was appreciably less in the men reporting such apparently beneficial vigorous exercise. The benefit was as evident at the end of the follow up period as at the beginning. Eliminating the effect of other causes (smoking, high blood pressure, obesity) of heart disease did not change the main finding, namely protection against heart attack by moderately vigorous or vigorous activity.

In a third major study, again in civil servants, Morris *et al* showed that only the vigorous aerobic exercise (swimming, brisk walking, cycling, and intense group play as in soccer) was accompanied by lower heart attack incidence; no benefit was evidenced from miscellaneous recreational work, such as gardening and do it yourself activities. And again, totals of physical activity, including general “puttering about”, were unrelated to heart attack incidence. They also showed that incidence rates were low only among men who actively participated in contemporary (proximate) vigorous sports.

The scientific contributions of Jerry Morris have helped establish the concept that patterns of sports play, food consumption, tobacco smoking, and other lifestyle elements alter the hazards of heart disease and premature death. Favourable adjustments of such patterns promote improved health and lengthen high quality life. Heading into his ninety first year, Professor Morris continues to work on identifying the relative importance of intensity, frequency, and duration of recreational activities to promote good health. He envisages designing exercise prescriptions and intervention techniques that will prove useful to policy makers in promoting sports play for all. We wish him all the best, with continued opportunity for his own weekly exercise protocol: three days in the pool and three at the gym, 30 minutes on each occasion.

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