Sir—Recent reports from European and American countries indicate that the proportion of males born has significantly decreased.1–3 Are the trends in sex ratio reported for these countries also observed in Asia? We analysed the data on newborn infants in Japan.

The number of live births by sex for Japan was obtained from vital statistics provided by the Japan Ministry of Health and Welfare. To estimate the relationship between male and female births, we calculated the proportion of males born, which was generally employed in previous studies.1–3 The trends in the male proportion from 1970 to 1995 were analysed with linear regression.

Figure 1 shows the male proportion among newborn infants in Japan between 1899 and 1995. Up to the 1970s, the male proportion increased from 0.510 to 0.517 (Panel A). In ‘Hinoeuma’ years (1906 and 1966), the male:female ratio was much higher than those in the previous and succeeding years. From 1970 to 1995, however, it decreased to around 0.513. The linear trend in the male proportion between 1970 and 1995 was significant (Panel B). Annually, the male proportion decreased by 0.115 per 1000 live births (95% confidence interval 0.147–0.083).

In Japan, up to the 1970s, the male proportion among newborn infants increased. This may be due to general improvements in obstetric care, which produced a decline in stillbirths that disproportionately affect males.1,3

Because of the Japanese superstition that women born in ‘Hinoeuma’ years would lead unhappy lives, parents tend to register the birth of their female infants in the previous or the next year. Between 1970 and 1995, the decrease in the male proportion in Japan is slightly larger than that found in Denmark, the Netherlands, Canada and the United States.1–3 A toxic effect of environmental contaminants on the reproductive system leading to a low male:female ratio was proposed as a reason for this.1–3 On such contaminant, dioxin, is known to reduce the male proportion among newborn infants.4 Dioxin is concentrated in fish, of which these Japanese eat more compared to people in European and American countries.

Since reduced male proportion at birth is viewed as a sentinel health event that may be linked to environmental factors,3 the geographical relationship between the linear trends in the male proportion, and the source and distribution of possible contaminants, should be investigated. Thus, reduction in the proportion of males born was also observed in Japan. Monitoring of changes in sex ratio should be continued in various areas of the world.

References

Sir—I was very interested to see the article by John Haybittle on use of the Gompertz function to relate changes in life expectancy to the standardized mortality ratio and I agree wholeheartedly with justification (introduction) and closing paragraph (conclusion); that life expectancy has more meaning than does SMR for the layman and I suspect for many clinicians. I have long held this view, which is why I suggested that the British smoking doctor study be re-analysed by the current life table method and re-presented as survival graphs.²

In presenting the conversion figure (Figure 2)¹ should not Dr Haybittle have employed a logarithmic scale in the abscissa, since an SMR of 0.5 is equally as good as an SMR of 2.0 is bad. This is what you would expect from the Gompertz function \( \mu(t) = Be^{kt} \) but also, and more relevant to the purpose of the paper, to make things simple for the layman, this would give nearly straight line relationships between SMR and change in life expectancy from the norm or standard (see attached figures).

**References**

¹ Haybittle J. The use of the Compartz function to relate changes in life expectancy to the standardized mortality ratio. *Int J Epidemiol* 1998; 27:885–89.