Reproductive risks associated with diving

Sir,—Raymond (1993;50:1055–6) considers the risks to reproduction from convective heat exposure among divers who use hyperbaric chambers. It is worth noting that they may be presumed to be at risk not only from the heat, but also from the pressure.

Röckert and Haglid reported that plasma testosterone concentrations of rats exposed to a hyperbaric environment of air were significantly and substantially (about 50%) reduced. Röckert and Haglid reported that plasma testosterone concentrations in human divers showed it to decrease after diving.

I have hypothesised that the sex ratio (proportion of males) of mammalian (including human) offspring is affected by the hormone concentrations of both parents at the time of conception; high concentrations of testosterone being associated with subsequent births of boys and high concentrations of gonadotrophin with subsequent births of girls.2 This suggestion is supported by the findings of Lyster 4 and Röckert and Haglid who reported highly significant low sex ratios in the offspring of Australian abalone divers and Swedish navy divers. It is also supported by the finding of a significantly low sex ratio in the offspring of men who were exposed to the nematocide DBCP: such men have been reported to have high gonadotrophin but normal testosterone concentrations.3

Workers in industrial medicine might consider using the sex ratios of offspring as a criterion of reproductive risk. Unusual sex ratios of offspring are characteristic of a number of diseases—for example, prostatic cancer,4 hepatitis B5, multiple sclerosis,6 ototoxicosis,7 and non-Hodgkin’s lymphoma.8

Meanwhile it might be prudent to re-examine the testicular function and sex ratios of offspring of further samples of divers.

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2 Röckert HOE, Haglid K. Reversible changes in the rate of DNA synthesis in the testes of rats after daily exposure to a hyperbaric environment of air. IRCS Journal of Medical Science 1983;11:531.
4 Lyster WR. Altered sex ratios in children of divers. Lancet 1982a;152.
5 Röckert HOE. Changes in the testicular vascularity of testes of rats exposed to air at 6 atmospheres absolute pressure. IRCS Journal of Medical Science 1977;4:107.

Occupational exposure to dust and lung disease among sheet metal workers

Sir,—The study Occupational exposure to dust and lung disease among sheet metal workers by Hunting and Welch (1993;50:432–42) was an ambitious undertaking.

This correspondence considers the modelling and selection techniques employed, the validity of the work history and exposure modelling, the potential impact of possible selection bias, and the appropriateness of the industrial hygiene evaluation on the fibreglass insulation findings.

In terms of the modelling and variable selection techniques, the final analyses of exposure to chronic bronchitis and emphysema have not been adjusted even though the confounding effects of age are ubiquitous and universally recognised in epidemiological research. Age should have been included in the regression equation regardless of its statistical significance if such inclusion changes the estimated coefficients of the risk variables by any appreciable degree.9,10 Without such an adjustment, the statistical significance of the association between chronic bronchitis and high level fibreglass exposure (ripout) may...
SAS program for testing the difference between two correlated correlation coefficients.

J Lee

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