Risk of congenital anomalies near the Byker waste combustion plant

Sirs,

While congratulating Cresswell et al.1 on their interest and zeal in the study of environmental consequences of industrial pollution, I regret that, as in so many similar studies, a basic methodological flaw weakens the credibility of the outcome. In this study, a major source of the pollution is an incinerator fumesack; another component is wind-borne dust from a landfill. Yet the spatial analysis is based on a circular pattern.

This simple pattern, which has long seduced environmental researchers into procreating unsound epidemiological offspring,2–4 presumes that winds play no part in distributing airborne pollution. Clearly, this presumption is indefensible. And even with this circle, the presumption of ‘nearer = more exposed to pollution’ is equally unsound; for the ‘umbrella effect’ of fumestacks can lift pollution clear over the heads of nearby communities to descend on and afflict people at more distant addresses. Through both mechanisms, therefore, the numbers of those more frequently and heavily exposed to the airborne pollution become diluted by the numbers of those exposed rarely or never.

The authors briefly dismiss the use of meteorological data as impracticable. But is this true? In Britain, regionally relevant data are almost always available, whether from Environmental Health, airport authorities or universities. This information is essential for constructing a far more realistic spatial pattern which takes at least some account of the effects of wind frequency and speed, so crucial in this type of study.5–8 In clinical trials, after all, the greatest rigour must be used to separate exposed from non-exposed; so why not try a little harder in environmental epidemiology?

Let investigators of airborne pollution dismiss once and for all the siren enticements of the Spurious Circle. Borrowing from Shakespeare: “Out! Out! Damned circle!”

References
5 Gailey FAY, Lloyd OL. Spatial and temporal patterns of airborne metal pollution; the value of low technology sampling to an environmental epidemiology study. Sci Total Environ 1993; 133: 201–219.

Yours faithfully,
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Reducing inequalities in non-fatal accidents in England

Sirs,

McCarthy and Primastea1 report data on non-fatal accidental injuries from two waves of the Health Survey for England according to gender and occupation social class. However, they fail to report statistical analysis of this data making interpretation, at best, conjectural. In particular, there is no clear evidence presented in the paper concerning trends in socioeconomic inequalities in major accidental injuries, as suggested by the title.

Using odds ratios,2 we have analysed the data referred to by McCarthy and Primastea – although we found that the data published in the sources they cite3,4 is slightly different from that published in their article for the years 2000–2001. The Table shows the results of our analyses. We do not present data on work-related accidental injuries as we were unable to access appropriate sample sizes for the 2000–2001 cohort.

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