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Maternal blood lead

In their recent paper, McMichael *et al* describe the results of a comprehensive study of reproductive outcomes among women environmentally exposed to lead (JECH 1986 **40:** 18). The authors report a positive association between maternal blood lead concentration and preterm deliveries but no association between blood lead and spontaneous abortion. We would like to suggest that the authors' data are inadequate for making such a conclusion about spontaneous abortion.

The abortions included in their study are only a small subset of the abortions experienced by the study population. In addition, they are heavily weighted toward second trimester abortions. Sixty-two percent of exposed women in the study were at least 14 weeks' pregnant at enrollment. Yet prospective and life-table studies have shown that nearly 90% of all spontaneous abortions occur before this gestational age (ie, during the first trimester).[1 2] This suggests that the large majority of abortions experienced by McMichael's population occurred before they could be enrolled. This is supported by the fact that only 3·4% of exposed pregnancies ended in abortion—far less than the 12–15% usually reported in unexposed populations.[3] Therefore, there is reasonable doubt that the small group of late abortions observed in this study is representative of spontaneous abortions as a whole.

The authors conclude that "the lack of any clear positive association of spontaneous abortion with maternal PbB within this study population suggests that small, non-occupational increases in lead exposure are insufficient to disrupt the early stages of pregnancy". We suggest that there are not enough data from the early stages of pregnancy to offer reassurance on this point.

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The author replies as follows:

Your correspondents correctly point out that the spontaneous abortions observed within our cohort of lead-exposed pregnant women in Port Pirie were almost certainly a minority of all spontaneous abortions. Our conclusion, which they quote in their third paragraph, should rather have ended: ". . . non-occupational increases in lead exposure are insufficient to affect the risk of second trimester spontaneous abortion".

While the sample of spontaneous abortions observed was censored with respect to gestational age—and may therefore have been biased with respect to any overall association of spontaneous abortion with lead exposure—we do not know of any reason why the sample might have been biased with respect to any association of second trimester events with lead exposure.

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