

Lead poison risk in 2M homes

By our Science Correspondent

Almost two million homes in Britain put unborn children at risk of mental retardation through lead poisoning, according to a survey carried out by the University of Glasgow, Department of Materia Medica. Published in the *Lancet*, the survey gives new and powerful reinforcement to the hypothesis that lead in tap water, and other environmental lead contamination, is associated with mental retardation and behavioural abnormality in children.

Earlier studies in Glasgow and in the United States have indicated strongly that such an association might exist, although a survey carried out in London by the Institute of Child Health and the Great Ormond Street Hospital for Children produced ambiguous results.

The new Glasgow survey is based on a retrospective analysis of blood samples taken from infants within two weeks of birth for the genetic disease phenylketonuria, a procedure which became standard practice in Scotland in 1966. This test involves the spotting of an absorbent card with blood drops from a puncture in the child's heel.

The blood is tested for the indicator of the genetic disorder and then the cards are stored in dry conditions; this saves the blood for later examination.

The survey compared the blood lead levels of 41 children with mental retardation which could not be put down to any known cause, with the blood lead levels of 36 infants matched carefully in all ways except that they were mentally normal. The water-lead concentrations in the home of the mother during pregnancy were also examined and the survey identified highly significant correlations both between high blood-lead in the infants and mental retardation and between high lead in tap water and high blood-lead in the infants.

The report makes it clear that mental retardation is most probably the result of damage to the developing foetus. Recent surveys of lead in tap water in England have resulted in optimistic announcements from the Department of the Environment about the size of the problem in Britain.

The Glasgow survey gives the problem a new dimension. "In Scotland, lead concentrations in 27 per cent of first-flush samples of drinking water were in excess of the World Health Organisation limit and 7 per cent and 9.5 per cent of samples in England and Wales respectively were also above the limit. Thus an estimated total of 1.7 million households in Britain – a much greater and more widespread frequency than was previously thought – are at risk," says the report.

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