MERCURY LEVELS IN URINE OF FAMILIES ENGAGED IN GOLD RECOVERY

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Metallic mercury is used to recover gold from jewellers' waste by some families in Kelaniya area. Their procedure involves treating jewellers' waste with metallic mercury to dissolve the noble metal and then evaporating off the mercury to leave a gold residue.

Volatility and biotransformation make mercury somewhat unique as an environmental toxicant. The chemical form of mercury to which exposure occurs is a very significant factor. Greatest risk is from exposure to elemental mercury vapour. Absorbed mercury is distributed in the body and high concentrations can be found in kidney and brain. Some of this mercury is excreted in both urine and feaces.

In our study, urine sample from families engaged in gold recovery were studied. Few adjacent families not engaged in gold recovery were used as controls. The mean mercury level of families engaged in the work (0.5141 ppm) was significantly higher than that of controls. (0.0734 ppm), ($t=5.32, p < .001$). These levels vary with age, sex and the number of years of their service. An analysis of variance showed a significant difference between the mean mercury levels of 30-40 yrs. age group and non-working group ($f=3.823$, $p < .05$) and mean mercury levels of 10-25 yrs. age group and 25-35 yrs. age group. ($f=3.504$, $p < .05$).

The dithizone extraction method was used to estimate the mercury levels in urine samples.

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References

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