

Small-scale gold miners vulnerable to dangers of mercury poisoning

ABOUT 20 000 SMALL-SCALE GOLD MINERS in South Africa could be unwittingly exposing themselves and the surrounding environment to mercury poisoning due to their operations.

According to a CSIR study in a rural community close to a river and gold-mining operations in Mpumalanga, nearly half of the people tested had urine and blood mercury levels that may cause symptoms such as fever, insomnia, mood swings and tremors.

Small-scale gold miners, mostly illegal, are at risk of inhaling mercury vapours when the gold/mercury amalgam is heated, often in open containers, when they attempt to extract the gold.

According to CSIR senior researcher Riëtha Oosthuizen, the inhalation of mercury vapours is a significant threat to human health: "Although the miners handle mercury directly, it can also affect the environment. Exposure of people living in close proximity to mine sites is primarily via mercury vapours from amalgam-burning or gold-melting, or via consumption of contaminated water or fish." However, samples of the water and edible fish from the specific river showed normal levels.

"If exposure is via inhalation of mercury vapour, about 80% of the mercury may enter the bloodstream and is distributed to other organs, including the brain, where it affects the central nervous system. These effects may be irreversible. Metallic mercury may also cross the placenta of pregnant women," she explains.

The study was complicated by the fact that most of these mining operations are taking place illegally, without mining permits or the permission of the owners. In addition the miners are mostly illiterate and therefore generally unaware of the danger associated with the use of mercury in the amalgamation process.

After completion of the survey those individuals with elevated mercury levels in their urine and blood were referred to a local occupational outpatient clinic specialising in mercury poisoning. - Wiida Basson

Enquiries:
Riëtha Oosthuizen
roosthui@csir.co.za



Riëtha Oosthuizen

