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**TITLE:** Mercury Levels in Women and Children from Suriname

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**ABSTRACT BODY:**

**Abstract:** Background: Small-scale, artisanal gold mining in Suriname frequently uses mercury to collect gold from sediment/soil slurries. Much of the mercury used in this process ends up in the surrounding watersheds including fish that inhabit these areas. Locally harvested fish are a staple source of protein for many communities in the interior areas of Suriname. There is concern that women and children in certain interior areas and possibly others (e.g. the capital Paramaribo) may be exposed to unacceptably high levels of mercury.

Methodology: Hair samples were collected from women and children in 5 villages in the interior of Suriname. These included 3 villages within the primary gold-mining area and 2 villages upstream of the gold-mining operations.

Collection and analysis of these samples was supported in part by our GEOHealth planning award. Hair samples have also been collected from women in the capital of Suriname, Paramaribo. Blood samples are also being collected from women in Paramaribo and several interior villages.

Results: Women and children from the interior villages had hair mercury levels that were on average 2-2.5X (range of 1.6-5.6 µg/g) the concentration used by the USEPA as an actionable level (1.1 µg/g) considered to be of health concern. Women from Paramaribo had hair mercury levels that were on average 0.5X that of the action level used by the USEPA, however 26% still had hair mercury levels above this action level.

Conclusion: Mercury in hair samples from women and children primarily in interior areas of Suriname are quite similar to those found in previous cohort studies documenting negative neurodevelopmental impacts on children that have been prenatally exposed. Additional research underway will help determine if there are any neurodevelopmental effects resulting from such exposures in these culturally diverse and unique communities in comparison to those that have been examined in previous work.

**KEYWORDS:** Metals, Biomarkers/Biomonitoring/Exposome, Children, Exposure Measurement, Women's Health.

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