

Sources and concentrations of mercury and methylmercury in pregnant women from Suriname: Implications for public health

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Artisanal and small-scale gold-mining operations that use elemental mercury for extraction have contaminated interior areas in Suriname. Communities in these areas rely heavily on locally harvested freshwater fish as a primary protein source. Some species, especially predatory species, have high levels of mercury in their edible tissues. We are currently conducting a large-scale biomonitoring program in Suriname determining total mercury levels in hair from pregnant women. Women in the interior communities have significantly higher levels of total mercury in hair than women from large coastal cities and communities. Because women in our study are not exposed occupationally, the primary source of exposure is thought to come from consuming contaminated fish. The form of mercury found in fish is almost all methylmercury, the most toxic form. To more definitively identify the source and type of exposure, we measured methylmercury and total mercury in hair and blood samples from 75 pregnant women that are part of this cohort. Total mercury and methylmercury are highly correlated in hair and blood. Methylmercury accounts for $\geq 85\%$ of the total mercury in hair and blood indicating that the primary source of exposure is most likely from dietary consumption of contaminated fish.