

Note

Briefing on mercury and methyl mercury in hair of the fishermen living along the Songhua River

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From 1989 through 1992, the study on fishermen living along the Songhua River were investigated once for each year. The amounts of fish intake 25kg/a. Number of years of fish intake, amounts of annual fish intake, kinds of fish taken, habits of smoking and drinking and health condition were under investigation. Among the populations under survey, hair samples of 1195 cases of fishermen were selected for Hg or MeHg accumulation study in human beings. The corresponding samples were taken for comparison.

Hair samples were selected from occiput, washed with neutral cleaning solution → ion free water → acetone and then cut into 1-2 mm after being dried for determination. Hg contents were determined by cold atomic absorption spectrometry (AAS) and MeHg contents were determined by gas chromatography with electron capture detector (GC-ECD), sulphhydryl cotton fibre used as absorbent.

The results of 1974-1977 showed that the average Hg contents in hair of fishermen were among 10.37-28.18 $\mu\text{g/g}$. It was found Hg pollution in Songhua River has greatly improved from 1974-1983 as Hg pollution sources were controlled, but the Hg contents accumulated in the hair of fishermen are still higher than those in comparison. The correlation of Hg contents in hair between the two groups differed obviously ($p < 0.01$).

The results showed that the more the amounts of fish intake, the higher the fishermen's Hg value. Significant correlation existed ($p < 0.005$) between the above two factors ($p > 0.05$). Relationship between the corresponding factors in the comparison group did not exist.

The level of Hg accumulated in the hair of fishermen living in the different parts of the river have been observed. It was shown that Hg amounts in fishermen's hair among the different parts of the river differed obviously.

It was shown that MeHg contents accumulated in one third (1/3) of fishermen in one part of the river surpassed the maximum safety value (10mg/50kg), while MeHg contents of fishermen in the other parts of the river were lower than the threshold except in a very few cases.

Through Hg and MeHg contents accumulated in fishermen group along Songhua River dropped greatly in recent years, yet it was still higher than that in the comparison group. Hg and MeHg accumulated in a few of fishermen's hair, especially in the part of the river with higher Hg and MeHg value. Fish intake still should be limited at appropriate amount to prevent from the risk of Hg and MeHg poisoning.

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