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Regression analysis of cancer incidence rates and water fluoride in the U.S.A.

based on IACR/IARC (WHO) data (1978-1992). International Agency for Research on Cancer.

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Age-specific and age-standardized rates (ASR) of registered cancers for nine communities in the U.S.A. (21.8 million inhabitants, mainly white) were obtained from IARC data (1978-82, 1983-87, 1988-92). The percentage of people supplied with "optimally" fluoridated drinking water (FD) obtained from the Fluoridation Census 1985, U.S.A. were used for regression analysis of incidence rates of cancers at thirty six sites (ICD-WHO, 1957).

".. cancers of the oral cavity and pharynx, colon and rectum, hepato-biliary and urinary organs were positively associated with fluoridated drinking water."

About two-thirds of sites of the body (ICD) were associated positively with fluoridated drinking water, but negative associations were noted for lip cancer, melanoma of the skin, and cancers of the prostate and thyroid gland. In digestive organs the stomach showed only limited and small intestine no significant link.

However, cancers of the oral cavity and pharynx, colon and rectum, hepato-biliary and urinary organs were positively associated with fluoridated drinking water.

This was also the case for bone cancers in male, in line with results of rat experiments. Brain tumors and T-cell system Hodgkin's disease, Non-Hodgkin lymphoma, multiple myeloma, melanoma of the skin and monocytic leukaemia were also correlated with fluoridated drinking water.

Of the 36 sites, 23 were positively significant (63.9%), 9 not significant (25.0%) and 4 negatively significant (11.1%). This may indicate a complexity of mechanisms of action of fluoride in the body, especially in view of the coexisting positive and negative correlations with the fluoridation index. The likelihood of fluoride acting as a genetic cause of cancer requires consideration.