Dioxin risk assessment

Dioxins are persistent and ubiquitous environmental poisons. They are contaminants in some chemical products and are involuntarily produced for example in burning processes. They accumulate in the food chain and concentrate in the fat tissue of animals. Many foodstuffs (fish, dairy products, meat) contain low concentrations of dioxins. Dioxins are extremely toxic to many animal species. Human risks of dioxin exposure are controversial.

In the EU-funded project 'Dioxin Risk Assessment' a risk evaluation was made by combining epidemiological data with selected toxicological results. A reliable risk evaluation of dioxin is crucial to guarantee at the same time the safety of consumers, and the confidence for producers that only scientifically sound decisions are enforced.

The end points selected in the 'Dioxin Risk Assessment' project were cancer and developmental defects which are considered the most relevant and sensitive potential health consequences of dioxin. The results suggest that developmental effects are more important dioxin risks in humans than cancer.

The high frequency of hypomineralised dental defects among normal children may be a sign of exposure to dioxins. Since the dental hard tissues do not undergo remodelling, defects that occurred in infancy can be diagnosed even after many years. Also, because defects are seen after exposure to very low concentrations, they may be the best available indicator of dioxin exposure.

The exposure of dioxin from food is low and its significance to humans is difficult to determine. The highest consumer exposure levels will continue to decrease by setting limits for dioxin in milk and/or fish or by making recommendations concerning the consumption of these foods. It is obvious that, in the long run, environmental regulations will be the most effective way of reducing exposure.

This project has completed in 1999 and all the results will be found in the final report.

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