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Addressing Concerns for Methylmercury in the Future Seafood Supply: Call for Reassessments

Methylmercury in commercial fish presents unique challenges to public health officials and consumers alike. It can be severely neurotoxic at high "doses," yet is ubiquitous and has been ingested, usually at low levels, by virtually everyone who has ever eaten fish. The major outstanding public health question is whether low "doses" caused by normal background levels of methylmercury in fish are causing subtle neurodevelopmental effects that warrant the current modes of risk management action mindful of the growing body of evidence of the benefits of seafood consumption. Caution by some prominent health authorities includes advisories that deter consumption of fish by certain types or locations in order to maintain large margins of safety because actual risk has not been measured. The prudence of this approach remains in debate relative to questions concerning interpretation of the original referenced studies, lack of considerations for the noted health benefits associated with seafood consumption, and obvious changes in the current and future seafood supply. There is growing evidence that fish consumption can reduce the risk of coronary heart disease and can benefit neurodevelopment in the fetus and young children such that reduced or eliminated consumption of fish could actually impose risks. Likewise, general seafood consumption is growing dependent on aquaculture supplies that were not evident during previous considerations for methylmercury exposure from fish.

Today, we have a wealth of data on methylmercury as compared to many other environmental contaminants, but risk managers are still operating in a risk assessment environment that is in need of reconsideration. First, because current risk management is based on a safety assessment process that only calculates one level of exposure to methylmercury deemed to be without significant risk, the risk manager cannot determine whether those who are exposed above that level are or are not at significant risk. Risk management policies worldwide often treat the calculated levels as 'bright-lines' above which individuals are at unacceptably high risk, even though they might still retain significant margins of safety. Whether reducing their fish consumption will significantly reduce risk is not known. On the other hand, limited or no fish consumption can reduce health benefits and elevate other risks. There is evidence that some consumers tend to reduce fish consumption even when they are not the target of consumption advice or when their fish consumption is already low. In developing countries, the implications for limiting the consumption of an important source of protein can be especially serious.

The current challenge is to determine whether it is feasible to shift to a new paradigm for methylmercury based on assessments of risk that are adequately protective without being unduly precautionary, e.g., that are not based solely on a single level of exposure and that take into account the potential health benefits from fish consumption. We recommend that public health authorities worldwide accept this challenge.