

Development of an EU strategy on mercury

Questions to stakeholders

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Mercury is one of the most toxic and most dangerous substances in the world today and as such an immediate and total ban of the use of all Mercury is crucial. Unfortunately there is a lack of understanding in the populace of the dangers involved with Mercury exposure, and even worse, a lack of understanding of how severely people may already be contaminated by it, and finally they do not know that the cause of their discomforts: headaches, lack of motor skills, forgetfulness, fatigue, intolerance, etc. is very likely to be a direct result of such exposure and from the accumulated deposits already present in their bodies. Because the lack of understanding of the dangers inherent in the use of Mercury is so profound, a complete ban on Mercury is presently not realizable.

“Mercury and its compounds are highly toxic to humans, especially to the developing nervous system. They are also harmful to ecosystems and wildlife populations. Microbial metabolism of deposited mercury can create methylmercury, which has the capacity to collect in organisms (bioaccumulate) and to concentrate up food chains (biomagnify), especially in the aquatic food chain. Methylmercury readily passes both the placental barrier and the blood-brain barrier”.

I should like to add to the list above some important supplements that I found in a report made by Maths Berlin, professor emeritus, who was in autumn 2002 assigned by “The Dental Material Commission – Care and Consideration” in Sweden, to summarise and evaluate research findings regarding the environmental medical aspects of exposure to mercury from amalgam that were published during the period from November 1997 to November 2002. The report is named “Mercury in dental-filling materials – an updated risk analysis in environmental medical terms”. Maths Berlin writes:

“Mercury is a potent toxin that affects the basic functions of the cell by bonding strongly with sulfhydryl and selenohydryl groups on albumen molecules in cell membranes, receptors and intracellular signal links, and by modifying the tertiary structure. The structure of albumen molecules is genetically determined, and this leaves ample scope for genetic polymorphism to manifest itself in varying sensitivity and types of reaction to mercury exposure. Mercury is thus a multipotent cytotoxin that intervenes in the primary processes of the cell. This creates scope for a broad spectrum of possible side-effects.”

“The analysis identified the following health risks from mercury in dental fillings:

- Risk of impairment in the functions of the central nervous system.
- Risk of impairment in kidney function.
- Risk of impairment in the immune system.

- Risk of impairment in foetal development, especially development of the nervous system.
- Risk of influence on the retina of the eye
- Risk of influence on the testicle function
- Risk of influence on the thyroid function”

“More recent results may suggest an elevated risk, among women exposed to mercury in the course of their work, of giving birth to babies who are small for their gestational age. In addition, there are experiments on animals indicating that one expected effect of exposure to low doses of mercury vapour is inhibition of brain development. In these experiments, this inhibition resulted in reduced cognitive and motor capacity. Such inhibition of brain development falls within the normal range in the population. These effects in animal experiments resemble those observed after exposure to methyl mercury. However, the dose of mercury that yields the effect has been only about one-tenth of the dose of mercury that exerts an effect following exposure to methyl mercury. Only through epidemiological studies using batteries of neuropsychological tests and possibly neurophysiological survey methods can these effects be demonstrated. The risk of inhibition of brain development during the foetal stage and early childhood is obvious. This hazard is a contradiction for amalgam fillings in children and women of fertile age, until a quantification of the risk prompts a different assessment.”

“With reference to the fact that mercury is a multipotent toxin with effects on several levels of the biochemical dynamics of the cell, amalgam must be considered to be an unsuitable material for dental restoration. This is especially true since fully adequate and less toxic alternatives are available.”

“With reference to the risk of inhibiting influence on the growing brain, it is not compatible with science and well-tried experience to use amalgam fillings in children and fertile women. Every doctor and dentist should, where patients are suffering from unclear pathological states and autoimmune diseases, consider whether side-effects from mercury released from amalgam may be one contributory cause of the symptoms.”

“For medical reasons, amalgam should be eliminated in dental care as soon as possible. This will confer gains in three respects. The prevalence of side-effects from patients’ mercury exposure will decline; occupational exposure to mercury can cease in dental care; and one of our largest sources of mercury in the environment can be eliminated.”

“Special clinical units should be created with the function of investigating unclear pathological states when there is any suspicion of an environmentally related cause. These units should have access to all medical specialities and the research skills that are required for assessment and treatment of this category of patients. Mercury exposure from amalgam is only one of many conceivable agents that may conceivably induce syndromes that are difficult to diagnose. Units of this kind may possibly be linked to environmental-medicine units at regional hospitals.” “It is essential to develop alternative clinical tests that are

simple and cost-effective to use. This requires suspected cases to be assembled in a few locations and systematically studied with all available and relevant methods in a scientific manner.”

With this in mind, I propose the following items to be considered for inclusion in the EU strategy on Mercury:

- A ban on mercury and compounds used in dentistry, pharmaceuticals, and cosmetics. Such a ban can be successfully implemented since fully adequate and less toxic alternatives are available today, and in the long run also far less expensive than claimed.
- Access for consumers to regular examinations by environmental medicine specialists to determine the level of Mercury deposits in their bodies as long as the emission levels in our environment are too high (virtually any level of emission is significant when dealing with Mercury).
- The development of informational campaigns on Mercury and its effect on living organisms and the environment. Also inform the populace on the benefits of containing and cleaning up after existing Mercury pollution. Sweden as an example has shown that a determined effort to collect Mercury from the environment before it ends up in the food chain can be done with significant medicinal and economical benefits.
- Products, particularly including comestibles, containing Mercury should be clearly marked as being a health hazard much like the health warnings seen on tobacco. The label should also carry guidelines for its safe disposal as is the case with batteries, dangerous chemical products, and the like. Because of the extreme toxicity of Mercury, tolerance levels should be very low, and thus even miniscule levels of Mercury should warrant suggested warning labels.

Sincerely yours,

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Reference:

Mercury in dental-filling materials – an updated risk analysis in environmental medical terms by Maths Berlin

An overview of scientific literature published in 1997-2002 and current knowledge

Available on order from:

The Dental Material Commission – Care and Consideration

Kv. Spektern, SE-103 33 Stockholm, Sweden

or on the web site, www.dentalmaterial.gov.se