



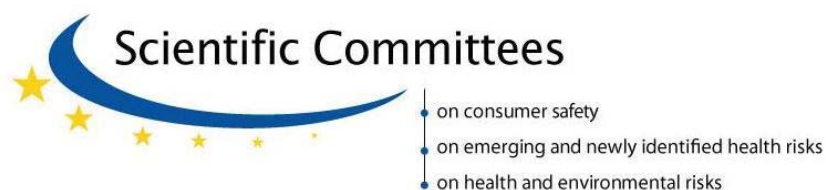
Results of the public consultation on SCHER's preliminary opinion on the environmental risks and indirect health effects of mercury from dental amalgam (update 2014)

A public consultation on this opinion was open on the website of the EU non-food scientific committees from 25 September to 20 November 2013. A public hearing took place on 6 November 2013 in Luxembourg to receive contributions on the scientific basis of the preliminary opinion.

Information about the public consultation was broadly communicated to national authorities, international organisations and other stakeholders. Fifteen organisations and five individuals participated in the public consultation providing specific comments and suggestions on the scientific basis of the opinion. Out of the 15 organisations participating in the consultation, there were six NGOs, three national public authorities, three dentist associations, two businesses companies and one trade union.

Each submission was carefully considered by the Scientific Committee on Health and Environmental Risks and the scientific opinion has been reviewed to take into account relevant comments. The final opinion includes these changes; the literature has been updated with relevant publications, the scientific rationale and the opinion section were clarified and strengthened.

The three tables below show all the comments made about each of the questions posed in the opinion and SCHER's response to them. It is also indicated if the comment was taken into account in the opinion.



SUBMISSIONS					SCHER'S COMMENTS
No.	Name of individual/ organisation	Do you agree with the observations made by the Scientific Committees?	Nature of disagreement	The evidence (s) with the reference(s)	SCHER's response
<i>Question 1: Are mercury releases caused by the use of dental amalgam a risk to the environment? The fate of mercury released from dental clinics as well as the fate of mercury released to air, water and soil from fillings placed in patients should be taken into account</i>					
Q1.1.	Organisation NGO , Health Care Without Harm No agreement to disclose personal data	Uncertain		n/a	No reaction needed
Q1.2.	Individual No agreement to disclose personal data	Agree		Mark E Stone, Mark E Cohen, Lian Liang, Patrick Pang (2003), Determination of methyl mercury in dental-unit wastewater, Dental Materials, Volume 19, Issue 7, November 2003, Pages 675-679.	No reaction needed

<p>Q1.6.</p>	<p>Individual , Florian Schulze (CAT-Berlin) florianschulz e@hotmail.c om</p>	<p>Mostly disagree</p>	<p>Relevant scientific and other information missing from the analysis</p>	<p>The report is taking the emission of methylmercury from dental practice(Point 3.2.2.4.) into account, which is not further specified. Oral methylation can take place by sulfate-reducing bacteria like Desulfomicrobium or Desulfobacter in subgingival dental plaque.[1] These genera are also the predominant sulfate-reducing bacteria in the human large intestine.[2] In correlation with elevated concentration of total mercury in stimulated saliva[3], which was studied in individuals with multiple dental amalgam fillings, humans, especially in populated areas, could be a significant source of mercury pollution. Even more, if there would be an increase of sulfate-reducing bacteria by prevalence or mutation, which could have effects on the methylation rate. Since the only reference in the report dates from 2003, I would claim for further analysis of this aspect and to take this comment into consideration.</p> <p>[1]Langendijk PS, Kulik EM, Sandmeier H, Meyer J, van der Hoeven JS. Isolation of Desulfomicrobium orale sp. nov. and Desulfovibrio strain NY682, oral sulfate-reducing bacteria involved in human periodontal disease. Int J Syst Evol Microbiol. 2001 May;51(Pt 3):1035-44. [2]J. S. van der Hoeven, C. W. A. van den Kieboom, M. J. M. Schaeken Sulfate-reducing bacteria in the periodontal pocket 19 DEC 2007 DOI: 10.1111/j.1399 302X.1995 .tb00156.x [3]Leistevuo J, Leistevuo T, Helenius H, Pyy L, Huovinen P, Tenovuo J. Mercury in saliva and the risk of exceeding limits for sewage in relation to exposure to amalgam fillings. Arch Environ Health. 2002 Jul-Aug;57(4):366-70.</p>	<p>The comment has been taken into account and some consideration are now included in the text of paragraph 3.2.2.4. More details about the effects possibly rising from the direct emissions of Hg and its methylation products into the patient's mouth will be dealt with in a SCENIHR opinion under preparation.</p>
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<p>Q2.6.</p>	<p>Individual, Florian Schulze (CAT-Berlin) , florianschulze@hotmail.com</p>	<p>Mostly disagree</p>	<p>Disagreement with the interpretation of the existing scientific and other data</p>	<p>The use of mercury must be considered not only against the background of its elevated toxicity in the methylated form but also in interaction with other toxic elements like lead or cadmium. The inter-individual ability to eliminate methylmercury from the body, and the genetic predisposition to effects of mercury have another effect on the risk of mercury-induced disease, too. (WHO2010) Recent studies about low-level intoxications with mercury proof long-term developmental delays (loss of IQ) in unborn and young children. Other toxic effects include alteration of sensory functions, motor coordination, memory and attention. Mercury has been linked to diseases like myocardial infarction, heart rate variability, blood pressure, attention-deficit/hyperactivity disorder, amyotrophic lateral sclerosis, autism and Parkinson's disease. [1-9] These serious health effects should be taken into consideration regarding the ongoing increase of Hg and MeHg levels in the environment and fish. Mercury is a chemical of global concern owing to its long-range atmospheric transport, its persistence in the environment once anthropogenically introduced, its ability to bioaccumulate in ecosystems and its significant negative effects on human health. (Minamata Convention) It is never removed from the environment; it is just moved to other locations and eventually buried under soils and sediments. Due to anthropogenic impact the mercury level in surface water has tripled during the past century and the MeHg concentration in historical archives, such as marine bird feathers, increased of a factor of 4 for the North Atlantic during</p>	<p>See answer to the previous comment (Q2-5) for the human effects part.</p> <p>Concerning the environment the SCHER is of the opinion that these additional references provide interesting information but are not useful for the current risk assessment at the local scale.</p>
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