

Neurotoxic Effects of Mercury in Dental Nurses



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F.D.A. Public Hearing

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Presentation Overview

- 2005 Norwegian Broadcasting documentary examines complaints by dental nurses
- Reports of high mercury exposure shocking
- Response by dental nurses to airing of documentary: **Offspring affected too!**
- Common sense recommendations:
 - 5) Ban amalgam placement during pregnancy
 - 6) Nurses placed on leave during pregnancy

2005 Norwegian Broadcasting Documentary on “Mercury girls”

Investigation into dental nurses complaints:

- Tremors, memory and concentration problems, liver and kidney problems
- depressions, extreme fatigue, anxiety, mood swings
- vision disturbances, diarrhea and menstrual and muscular problems

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Study Results

- Study of neurological differences between dental nurses and control group
- **Results surprised scientists:** 25% of dental nurses reported having neurological problems.
- Tremors: 36% vs 8% (nurses vs control); Memory: 14% vs 0%; Depressions: 18% v 4%; Heart and Lung Problems: 21% vs 5%.
- Pilot project oversight by Professor Bente Moen, Head of Section for Occupation Medicine at the University of Bergen in Norway

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Experiment Conducted in Response to “Expert” Claims “No Effect” at that Hg Level

- Professor Nils Gjerdet at the Faculty of Dentistry at the University of Bergen conducted experiment
- Following the procedure used in the past in dental office, heated amalgam (under hood) then measured vapors
- **Results were staggering**
- Every time amalgam was prepared the meter read 1000 mg/m³, the maximum limit device measures

New Zealand Nurses Were Exposed to Similar Levels of Mercury

- In 1974, authorities discovered nurses ill with mercury poisoning; given paid leave until levels “normalized”
- Nurses contacted authorities in 1990’s with concerns about their health and that of their children
- Statistically significant study found 25 % of the dental nurses had had a hysterectomy compared to 6 % in the control group.
- New Zealand authorities have funded Dr. Linda Jones et al to expand study

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Response After Documentary Airing

- 394 women called Norwegian television station
- Pattern emerged: Many worked while pregnant and were also breast feeding
- **High number reported children born with birth defects, learning difficulties, immunological, muscular/skeletal problems**
- Mothers had severe bleedings and multiple late abortions



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Response to Documentary in Denmark

- **More than 1650 dental nurses have called the Danish Trade Union**
- Concerns expressed for both their health and the health of their children
- In response, Danish Trade Union launched a new website: www.kviksoelv.dk
- Danes working collaboratively with Parat, Norwegian Trade Union: www.parat.com

Norwegian, Danish* Governments Now Studying Dental Mercury Exposure Effects

- **A thorough literature search** to create an overall survey of knowledge both nationally & internationally
- **An epidemiological study** to examine illnesses among dental groups/others with Hg exposures
- **A clinical study** to find symptoms, illnesses that may exist among a statistically randomly selected group
- **A focused program of medical examinations** so that each person's symptoms and illnesses can be compared to their mercury exposure

* English translation of a 16 February 2006 press release on the website of the Danish Employment Ministry at:

<http://www.bm.dk/sw5110.asp>.

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Norway Now Actively Discourages Dentists from Placing Amalgam

- Amalgam placement takes away from the life of the tooth
- Levels of mercury in pregnant women and children too high
- Follow precautionary principle
- Principle of product substitution: when available, use less toxic materials
- **Amalgam placement banned during pregnancy**



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Background: Literature Review Conducted

- Located study of 6000 dentists and dental nurses by Dr. Diane Echeverria at Battelle Center for Public Health and Research and Evaluation in Seattle, WA
- Found that, **in US dental offices today**, exposure to low levels of mercury below the WHO standard of 20 mg/m³ **resulted in neurological damage detectable in neuropsychological tests**

Common Sense Recommendations



- Developing fetus most susceptible to mercury
- As a precaution, FDA should ban mercury tooth filling placement during pregnancies
- Dental nurses should be placed on paid leave during, before pregnancy
- FDA should provide 800 number **to report Hg exposure problems dental nurses and their children are experiencing**

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Norwegian Press Award for Outstanding Investigative Journalism

- Presented to Ms. Synnøve Bakke and Ms. Kjersti Knudssøn, Norwegian Broadcasting, who won this most prestigious Norwegian journalistic prize for their documentaries on dental mercury exposure
- The judges' statement: **“After the two journalists' impressive and extensive work, our perceptions of what 10,000 dental nurses were exposed to in their workplace has been changed forever.”**

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Award Given to Dental Assistant by the Norwegian Society for Civilian Courage

- Previously a dental assistant for 23 years, Ms. Tordis Klausen was recognized: ***“For her tireless work to acquire and spread information about health damage resulting from exposure to dental amalgam and mercury in dental clinics.”***
- Ms. Klausen lost a civil lawsuit in 1997 and 1999 for compensation; then appealed all the way up to the Norwegian Supreme Court — and was then denied
- Ms. Klausen has since appealed to the European Court of Human Rights in Strasbourg

2006 Zola-Prize Winner Tordis Klausen

Awarded to persons who ***“Openly and courageously have revealed or opposed conditions in Norway that threaten basic values in Norwegian society: human rights, democracy and legal protection.”***



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- Ms. Synnøve Bakke, Norwegian Broadcasting
- Ms. Kjersti Knudssøn, Director of the *Mercury Girls* and *Mercury Children* documentaries



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Information on Documentaries

- Information about the Norwegian Broadcasting documentaries can be found at:
- *Mercury Girls*:
<http://www.tv2world.com/programmes/show/109>
- *Mercury Children*:
<http://www.tv2world.com/programmes/show/110>
- Anyone interested in airing the documentaries should contact TV2 WORLD DENMARK, www.tv2world.com Their email addresses is as follows sales@tv2.dk and tel +45 65 21 22 23

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- “Behavioral effects of low-level exposure to HgO among dental professionals: a cross-study evaluation for psychomotor effects.” Neurotoxicol Teratol, 1998 Jul-Aug;20(4):429-39

