

Neurotoxic Effects of Mercury in Dental Nurses



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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:
 - 1) Ban amalgam placement during pregnancy
 - 2) Nurses placed on leave during pregnancy

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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

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/m^3 **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

