The Suitability of Mercury/ Silver Amalgam Filling Implants
FDA Hearing 6-7th Sept 2006

Mercury/silver fillings are commonly referred to by dentists as silver, silver amalgam or silver alloy fillings. This terminology is deceptive to the public. A recent Zogby poll found that 75% of the public did not realize that mercury was the principle component of these fillings[1].

Silver amalgam is not an alloy but more correctly characterized as a solid solution. *"It is a fallacy that mercury is neutralized when it is combined with other components of silver amalgam. The laws of physical chemistry are followed. Mercury is diluted by the other components of amalgam in what may be considered a solid solution. Although the vapor pressure of mercury is reduced, mercury is still given off. An identical situation arises when alcohol is diluted by water."* [2] When heated the alcohol readily vaporizes from the water much like mercury readily vaporizes from a mercury/silver filling.

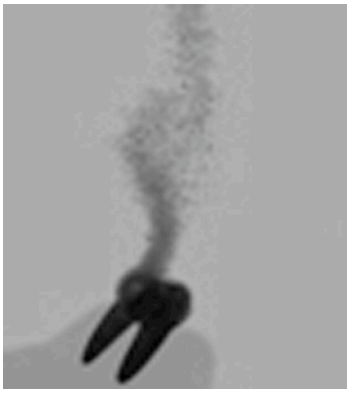

Figure 1.

The vapor pressure of mercury doubles with each ten degrees Fahrenheit increase in temperature. Starbuck's coffee for example is served a 140 degrees F. An amalgam filling heated to this temperature would have a vapor pressure 4 fold greater than at body temperature. This is graphically demonstrated by the increase in visible mercury vapor seen at only a 110 degree F temperature as shown in the video demonstration *Smoking Teeth Figure 1*. *Smoking Teeth* DVD's have been provided along with additional documentation by the International Academy of Oral Medicine and Toxicology for each member of this committee.

Professor James Masi, a metallurgist has demonstrated why mercury vapor can be seen and measured coming from mercury/silver fillings and moreover why the amount increases with chewing[3]. In Figure 2 below Dr. Masi has touched the surface with a round flat probe with one pound per square inch of pressure and then photographed the result with a scanning electron microscope. Note the circular areas of shiny mercury droplets. The probe has easily has brought liquid mercury to the surface of the 25 year-old "set" amalgam filling.

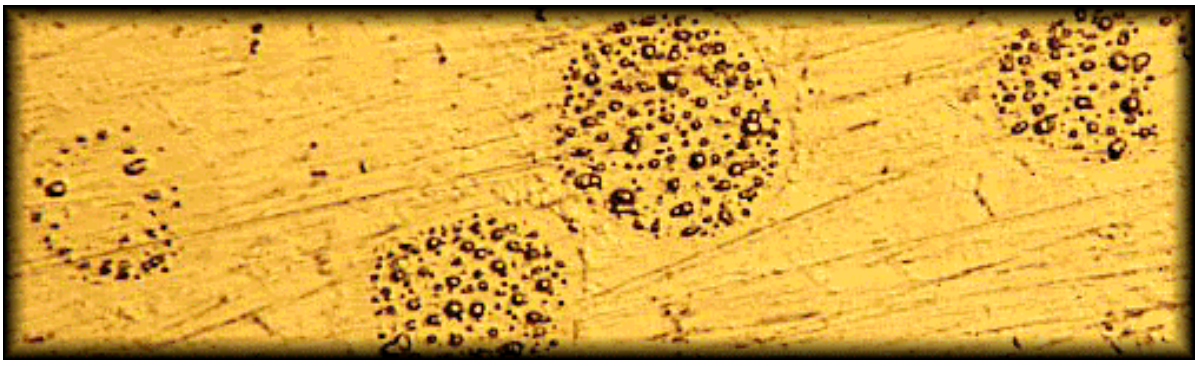

Figure 2.

Autopsies of humans using both neutron activation analysis[4] [5] [6] and atomic absorption[7] have firmly established that implanted mercury/silver fillings are by far the predominant source of human exposure to mercury. Further research has confirmed that there is substantial maternal fetal transfer of mercury from amalgam[8] and in situ mercury/silver fillings in the birth mother's mouth are the predominant source of fetal exposure to mercury[9]. There are vulnerable subsets of

the population apparently lacks the ability to effectively excrete this mercury leading to a build up of mercury and early onset of neurological impairments[1011]. An additional subset forms abnormal neurotoxic porphyrins[12]. None of these populations are normally identified prior to implanting of mercury/silver fillings. Treatment with mercury/silver fillings is common during pregnancy despite the manufacturers long standing recommendations against such practices[13].

Dental work involving amalgam including routine cleanings results in a large bolus dose of elemental mercury that is slowly excreted in healthy individuals over the next 1 to 18 years [14 15 16 17].

Advocates for the continued use of mercury/silver implants are fond of declaring that the mercury in a silver filling has never been proven to have harmed anyone[18]. This is the equivalent of declaring that the bullet in the gun never harmed anyone. We are not concerned about the mercury in the filling but rather the mercury that continuously exits the filling and accumulates in distant organs or the fetus[19 20].

They have also claimed that these kinds of fillings are safe and cost effective. *Using national blood mercury prevalence data from the Centers for Disease Control and Prevention, we found that between 316,588 and 637,233 children each year have cord blood mercury levels > 5.8 µg/L, a level associated with loss of IQ*[21]. That means that 8 to 16% of the newborns had levels of mercury in the umbilical cord blood sufficient to cause neurological impairment. Although we believe the authors incorrectly identified the source of the mercury to potentially be from fish they estimated the lost productivity to be $8.7 billion annually (range, $2.2–43.8 billion). That makes the neurological harm from mercury alone greater than the annual cost of all amalgam fillings.

Further research needs to be done on this matter but with the present state of knowledge it is clear that the implanting of mercury in the bodies of humans without regard to their genetic makeup, physical health, pregnancy status, dental personnel protection or accurate informed consent should cease immediately. It is the responsibility of the amalgam manufacturers to produce the alleged voluminous evidence of safety. Once the amount of mercury exposure has been quantified both for the patient and the dental personnel an appropriate risk assessment can be conducted in this country as it has been previously in others.

Respectfully submitted to the FDA Neurological and Dental Panels by:
David Kennedy, D.D.S. Past President
For the International Academy of Oral Medicine and Toxicology

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