

Tuna, sushi, sashimi and mercury by Connie Veneracion

March 14, 2006

http://www.manilastandardtoday.com/?page=connieVeneracion_mar14_2006

My family is a big fan of tuna. We eat tuna in every imaginable form—fresh or canned, raw or cooked. Tuna salad and tuna spread, made from canned tuna, are top favorites in our household. For grilling, it's tuna belly and "panga." In my food blog (www.pinoycook.net), the number of recipes using tuna, and the wide variety of ways in which I cook the fish, will show you what I mean when I say we are serious tuna lovers.

When news of mercury in tuna hit the headlines about two years ago, I seriously considered cutting down on canned tuna. A few months later, as more news hit the headlines—this time assuring that previous reports had been exaggerated—I considered the possibility that competitors of tuna raisers and sellers may have been responsible for the antituna campaign. After all, we come across such business tactics every day.

At home, due to all the conflicting reports, I decided to take tuna off the red-alert list. Until something more definitive could be established, it would be wiser not to let our diet get affected by business tugs-of-war. Then, in January, I received an invitation that would bring the mercury-in-tuna issue at the forefront of my concerns once more.

Health Care Without Harm (www.noharm.org), an international coalition working for an environmentally sustainable health care industry, conducted the Mercury in Health Care-Southeast Asia Conference. Cosponsored by the United Nations Environment Programme (UNEP), the Philippine Heart Center and the Philippine Department of Health (DoH), the focus of the conference was mercury as a serious-but preventable-pollutant stemming from the health care industry. Unfortunately, I was not able to attend. However, the organizers were kind enough to furnish me with copies of the speakers' presentations and other related documents.

I must admit that my real interest in attending the conference was to find more information on the rudimentary data on mercury infected tuna that I have come across on the Web. Little did I imagine that mercury in tuna is just one of the many ways by which humans are exposed to mercury poisoning. As I read through the materials, I was more than a little shocked when I learned that we live with the dangers of mercury poisoning every day in ways we may not have been aware of. I didn't even know that the term "mad hatter" originates from symptoms related with mercury poisoning.

Mercury is a natural element that can neither be created nor destroyed. It is naturally present on the earth's crust. It is propelled into the atmosphere by natural causes such as volcanic eruptions. The way I understand it, in natural proportions, mercury poses no hazards to human health. It is exposure to large quantities, via man-made causes, that can lead to serious health problems.

Man-made causes include coal combustion; production of lime and cement; mining and smelting of gold, silver, lead, zinc, copper, iron, bauxite; waste disposal health facilities and waste disposal at home.

But the exposure of the general population comes from three major sources: vaccines, dental amalgams (fillings) and eating infected seafood.

Vaccines? Aren't vaccines supposed to immune our bodies from diseases? Well, it appears that there is a vaccine additive called thimerosal that is mercury-laced. The most common vaccines with this ingredient are diphtheria-tetanus-whole cell pertussis (DTP), haemophilus influenzae (HIB) and Hepatitis B.

And what about dental fillings? Well, in case you haven't noticed, "silver fillings" are no longer being used. That is, unless your dentist is one of those Jurassic practitioners who is averse to anything new. There is an old dentist in Caloocan City who, as late as 1996, was still insisting that these "silver fillings" were still "the best".

According to Amalgam.Org (www.amalgam.org), "A 'silver filling' is a euphemism for an amalgam restoration, which... consist[s] of mercury, silver, tin, copper, and a trace amount of zinc." The dental amalgam has two fundamental flaws. One, it results in the "sustained release of mercury and other metals from the amalgam into the body". Two, because of galvanic action between the dissimilar metals in the amalgam, "galvanism produces electricity that flows through the body... between 0.1 and 10 microamps, compared to the body's natural electric current of 3 microamps." The mercury leakage can cause serious health problems and malformation of the unborn fetus. But because of the "slow, insidious processes", the effects may not be discernible until after several years.

Finally, there's mercury in seafood. Among these, "white" or albacore tuna has been specifically targeted. Smaller species of tuna generally contain less amounts of mercury. The problem is in the suppression of information and/or mislabeling.

I have a can of Century tuna (chunks in water) in my pantry right now. I checked the label and it does not say what specie of tuna is in the can. There is a huge sign that says "heart friendly"... but what about the mercury content? www.gotmercury.org even encourages consumers of fresh and frozen tuna to ascertain the specie before ordering and eating.

In the end, it all boils down to public awareness. If the public knows that certain problems exist, people can guard against hazards. For sure, if I find myself in a dental clinic where the dentist insists on "silver filling", I'll walk out and probably sue him for medical malpractice. With regards to tuna... I'm throwing out the last can of Century tuna in the pantry and I won't buy any more canned tuna that does not specify the specie used. Will we give up sushi and sashimi? I doubt it. But aside from being bold enough to ask what kind of tuna we're going to be served, it will help even more if we can learn about the various species and learn to distinguish the meat of each specie with one look. And that I intend to do.

The author blogs at <http://houseonahill.net>

[Mercury in health care](#)

January 27, 2006 at 7:51 pm · Posted by Alecks Pabico
Filed under [Public Health Issues](#)

REMEMBER Minamata?

In 1932, the Japanese petrochemical firm Nippon Chisso Hiryu began operating an acetaldehyde and PVC (polyvinyl chloride) manufacturing plant in Minamata using mercury as a catalyst. For 36 years, the plant was directly discharging its industrial waste into Minamata Bay with no adequate treatment facilities. In 1958, Chisso's toxic dumping spilled over to the tributary of the Minamata River contaminating a wider area of the Yatshushiro Sea.

The methylmercury poisoning of the sea water, known as the first major environmental man-made disaster in Japan, affected thousands of people in the fishing village, causing deaths, physical deformities and a neurological disorder that has come to be known as the [Minamata disease](#). Victims suffered from the degeneration of the nervous system — numbness in the limbs and lips, slurred speech, constricted vision, involuntary movements, and in some cases lapsing into unconsciousness and serious brain damage — that left them resembling "living wooden dolls." (Above is the famous photo by W. Eugene Smith which brought world attention to the disease.)

In 1959, the birth of 22 infants afflicted with serious residual effects diagnosed as cerebral palsy signaled the onset of the lingering congenital illness among children. Medical researchers eventually linked the disease to the mercury waste (contaminated sludge was estimated at a total of 1.5 million cubic meters) that poisoned the fish that the people had been eating.

Almost 50 years later, mercury remains an environment and public-health risk as it continues to be used in many products (fluorescent lamps, batteries, electrical switches, cosmetics, fabric softeners, polishes, pesticides) and processes around the world, including small- and large-scale gold mining, coal-fired power generation, cement production, waste incineration, chlor-alkali production, cremation and landfill operations. The most likely routes of exposure are through inhaling inorganic mercury vapor after a spill or while it is being manufactured, or ingesting methylmercury-contaminated fish.

A naturally occurring element commonly found in the earth's crust, mercury is one of the most serious toxic pollutants whose use also remains prevalent in the health care industry. Mercury-based medical equipment like thermometers, blood pressure devices, gastrointestinal tubes, dental amalgam, laboratory chemicals and pharmaceutical supplies as vaccines, nasal sprays, and diuretics are the norm in hospitals and clinics. A typical fever thermometer contains approximately one gram of mercury, enough to contaminate a lake with a surface area of 20 acres (eight hectares). Sphygmomanometers contain about 80 to 100 grams per unit.

Identified as a significant source of mercury pollution, the health care sector is presently faced with the challenge of eliminating the neurotoxic heavy metal. In keeping with their Hippocratic oath to "first, do no harm," doctors, dentists, nurses and other health workers

are therefore being considered as frontline advocates of mercury-use reduction to make health-care practices safer to human health and the environment.

A recently-concluded two-day conference on "[Mercury in Health Care](#)" at the Philippine Heart Center organized by [Health Care Without Harm \(HCWH\)](#) and the [United Nations Environment Programme \(UNEP\)](#), with the support of the Center, [Department of Health \(DOH\)](#), and [Department of Environment and Natural Resources \(DENR\)](#), has tried — and succeeded — in doing just that.

The first in a series of four regional conferences attracted some 150 health care practitioners, both in the government and private sector, mostly from the Philippines and neighboring Southeast Asian countries of Vietnam, Indonesia, Malaysia, and Thailand. The meeting provided the delegates the venue to share experiences and expertise in order to raise awareness about workplace, local and global hazards associated with exposure to mercury and methylmercury, and also to discuss ways to substitute affordable and reliable alternatives for mercury-containing devices and products. The conference agenda also called for the formation of national and regional working groups that would develop strategies to substantially reduce and ultimately eliminate mercury use from the health care sector.

Three more workshops are scheduled to be held in South America (Buenos Aires), Southern Africa (Durban), and South Asia.

The choice of a Southeast Asian country as host of the first workshop could not have been more fitting as Asia has become the largest contributor of anthropogenic (man-made) atmospheric mercury, accounting for over half of the global emission of 5,000 metric tons a year. Ten percent of this emission, said Dr. Peter Orris, director of the Occupational Health Service Institute at the University of Illinois in Chicago, comes from the health care sector, primarily generated by incineration of medical waste which can contain significant concentrations of mercury. In the early 1990s, medical waste incineration was the biggest source of mercury in the U.S.

Findings of the 2002 UNEP study also confirm this development. The [Global Mercury Assessment Report](#) initiated in 2001 by the UNEP Governing Council found that 57 percent of global atmospheric emissions based on 1995 estimates originated from Asia, though mostly in fossil fuel (carbon) combustion and production of non-ferrous metals and cement. Nonetheless, UNEP also acknowledged the fact that health care-related products and activities are "important sources of anthropogenic releases" of mercury.

Since the release of the UNEP study, governments, particularly in North America and Europe, have been working with the UN body towards mercury-use reduction. The [World Health Organization \(WHO\)](#) has also issued a policy promoting the elimination of mercury in the health care sector. In its wake, thousands of hospitals and pharmacies in the U.S. and Europe have phased out mercury-based medical devices even as the European Union is pursuing a mercury export ban that will take effect in 2011.

Despite the significant reduction in the use of mercury in many industrialized countries, most developing countries continue to lag behind mainly because there has been an information deficit about the serious health and environmental risks associated with mercury, and the availability of safe, cost-effective non-mercury alternatives in health

care. The demand for digital thermometers and aneroid sphygmomanometers is only starting to emerge in the developing world with the growing awareness of such options.

But cost has really been the primary discouraging factor especially since mercury-containing devices have become even more inexpensive as the likes of China and India, for instance, now produce large quantities of mercury thermometers at cheaper prices. With the low demand for mercury in the developed countries, low-priced mercury and outdated mercury technologies have also found a lucrative market in less developed countries.

"Affordability is really an issue that prevents the quick shift to mercury-free health care facilities," admitted Dr. Esperanza Icasas-Cabral, the chief of cardiology at the Asian Hospital and Medical Center and former president of the Philippine Hypertension Society.

Cabral added that resistance is not only among patients but doctors who have long been trained in mercury-containing devices. Since the introduction of the Baumanometer in 1926, the mercury manometer has occupied an eminent position in blood pressure measurement, a long tradition that is not easily forsaken, she said.

But mercury-free sphygmomanometers, of which the most common is the aneroid type, are also economical in the long run, said Cabral, as they eliminate the risk of mercury spill and associated training costs. Cleaning up a sphygmomanometer spill at the Butterworth Hospital in Michigan a few years ago cost about US\$4,000. Aneroid sphygmomanometers have also been tested and found to provide accurate pressure measurements that make them suitable replacements, only they require frequent calibration.

And considering the rate of breakage of mercury thermometers in hospitals, costs do balance out in the case of using more durable digital alternatives. "There is also the cost to treating patients from the long-term impacts of mercury to consider," said Jamie Harvie, executive director of the Institute for a Sustainable Future and a recognized pollution prevention expert in the US. "You also have to think about the cost to public health."

In dental medicine, mercury-free alternatives to amalgam, which is approximately 50 percent mercury, are making inroads in reducing the risk of mercury contamination in patients. Though the U.S. and British dental associations continue to consider amalgam as "generally safe," the local dental profession is slowly replacing it with composite materials, shared Dr. Michelle Sunico.

Sunico, who is in charge of clinical operative dentistry at the College of Dentistry of the University of the Philippines, counseled her fellow dental health practitioners about using amalgam substitutes whenever feasible and minimizing amalgam waste generation. "As dentists, we should also work towards caries reduction and prevention...thereby eliminating the need for amalgam," she said.

Indonesia and Malaysia are also seeing an increasing use of amalgam substitutes in restorative dentistry, particularly in private practice. Dr. Ong Hean Tee, chairman of the Penang Environmental Working Group (PEWOG), however said the alternatives are not

being used as much with other devices like thermometers and blood pressure manometers, and laboratory chemicals. Ong attributed this to the fact that there is as yet “no active search for alternatives to mercury-containing medical devices in the health care sector in Malaysia.”

While Sondang Widya Estikarasi of the National Agency for Drug and Food Control in Indonesia noted an increase in the use digital thermometers and sphygmomanometers in his country, the trend is happening more in big government and private hospitals and clinics located in the big cities.

Indonesian pharmaceutical firms, he said, are also starting to produce single-dose vaccines that no longer contain thimerosal, a mercury-containing preservative that has been used as a vaccine additive for almost 60 years. But only the big hospitals and clinics are providing such vaccines as an option at this time.

Commonly used vaccines for diphtheria-tetanus-whole cell pertussis (DTP), haemophilus influenzae (HIB), and hepatitis B contain thimerosal. In recent years, there has been an increase in the number of these vaccines being recommended for routine use in infants, a development that Dr. Irma R. Makalinao, toxicology expert at the UP College of Medicine, has viewed with great concern.

“There is a potential for the increased exposure of infants to mercury from thimerosal in vaccines,” she said.

Though a WHO advisory committee recently concluded that it is safe to continue using thimerosal in vaccine, Makalinao warned that there is probably no safe limits for mercury as far as children are concerned.

At the closing of the conference yesterday, the delegates adopted the following [plan of action](#):

1. In medical, dental and other health care institutions in the country:

- Encourage health care institutions throughout the region to sign the Mercury-Free Health Care Pledge
- Generate awareness of mercury’s health and environmental hazards, along with the accuracy and dependability of alternatives by educating health care workers, management, students, teachers and the public
- Collect and share existing studies so as to be able to clearly demonstrate the strong scientific evidence of mercury’s hazards and the viability of alternatives
- Assess mercury management practices, conduct mercury inventories, develop checklists, policies, guidelines and protocols
- Add mercury education to staff orientation programs, and develop baseline data of hospital staff exposure
- Call on all hospitals in the region to phase-out mercury from health care, by procuring and phasing-in mercury-free medical devices

2. Throughout Southeast Asia:

- Establish national networks of stakeholders, composed of government, non-government organizations and health care institutions that would initiate awareness campaigns and implement programs to replace mercury containing health care devices with mercury-free alternatives (The Health Care Without Harm office in Manila will serve as regional Secretariat to help in sharing and disseminating information and assisting in national programs.)

3. Globally:

- Advocate through health care institutions, national governments and professional associations for national legislation and a binding international instrument to substantially reduce global supply and demand of mercury

Beware of mercury inside thermometers

By MIRIAM V. TORRECAMPO
People's Tonight

THE Philippines has expressed commitment to the global phase out of mercury in devices, especially thermometers and other measuring equipment, found in health care facilities

The pledge was made at the end of the two-day Southeast Asia Conference on Mercury in Healthcare.

However, it may take three to seven years for the Philippines to eliminate mercury in all of its health care facilities, said engineer Ana Trinidad Rivera, of the Department of Health-Environmental and Occupational Health Office.

"It won't be easy because it would also entail cost in the beginning. But in the long run mas lesser ang cost natin especially kung kailangan natin i-treat ang mga health workers from mercury poisoning," she told People's Tonight.

Rivera said there are enough alternatives available in the market to warrant the phase out of mercury used in hospitals and clinics.

"Some facilities have already shifted to non-mercury containing equipment like digital thermometer, aneroid sphygmomanometer," she said. She also recommends the use of digital thermometer at home.

Mercury, a heavy silvery-white liquid metal, is also present in fluorescent lights, cosmetics, dental fillings, diuretics, fabric softeners, felt floor waxes, polishes, fungicides, industrial wastes, vaccines, laxatives, seafood, sewage disposal, tattooing, water and wood preservatives.

Hospital workers and patients are more at risk to mercury exposure and contamination, Rivera said.

But ordinary persons face dangers of mercury-poisoning as in the case of a child ingesting the toxic material after a thermometer broke inside his mouth.

Rivera noted that most hospitals now lack the appropriate clean up program for mercury.

"As much as possible iniwasan natin pag-release ng inorganic mercury sa environment kasi umiikot lang siya sa air, water and soil," she said.

Health Secretary Francisco Duque III noted that an estimated 2,000 tons of new mercury is generated and released to the environment every year, 70 percent of which come from the incineration of medical wastes.

Studies show that mercury causes toxic effects and genetic defects in the unborn child. In adults, mercury exposure causes heart, liver and reproductive diseases and even cancer.

Chronic exposure to inorganic and methyl mercury affects the central nervous system as manifested through tremors. This is common among small-scale miners.

Acute exposure to mercury, especially to its metallic form (found in thermometer bulbs) could cause damage to the gastrointestinal tract.

But Rivera said there is no documented mercury poisoning among health care workers at present.

"Ngayon lang naging aware especially in our health care facilities na kailangan i-document ang mga cases na ganito. Hindi siya reported kung nagkaroon ng breakages or poisoning," she noted.

Dr. Irma Makalinao, a professor at the Department of Pharmacology and Toxicology, University of the Philippines College of Medicine, said four mercury poisoning cases were documented at the National Poison Control Center of the Philippine General Hospital from 1998 to 2004.

The patients, who were children, ingested mercury from broken thermometer bulbs. All underwent detoxification.

Rivera said the DOH is advocating the recovery of mercury coming from health facilities and store them for proper disposal.

In case of thermometer breakage at home, the spilled mercury should be covered with soil or saw dust and disposed properly.

"Don't let children play with broken mercury thermometers. Aside sa broken glass, maaaring ma-inhale ang mercury na nagbi-vaporize. Huwag walisin ang mercury, but place saw dust or soil to cover the spillage, carefully place them in a tightly sealed container and then refer it to the local environmental bureau for proper disposal," Rivera advised.

Saturday, January 28, 2006
People's Tonight
8:04:07 PM