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**Mercury poisoning**

التسمم بالزئبق

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***Fourth Year 2014-2015***

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***المرحلة الرابعة 2014-2015***

## ((Mercury poisoning))

## Introduction:

# What is mercury poisoning?

# There are three kinds of mercury. Depending on what the exposure is, you could have different symptoms and disease statesElemental, or [metal](http://www.scientificamerican.com/article/wine-metal-health) mercury, is found in [thermometers](http://www.scientificamerican.com/article/a-homemade-high-precision). The problem with that is the inhalation of fumes that come off that mercury. Playing with it and ingesting it is not as toxic. That kind of mercury causes significant amounts of neurological damage. As the exposure gets longer, there may be additional changes in the bone marrow that affect the ability to produce blood cells, infertility and problems with heart rhythm. Mercury salts, which are basically industrial, if you breathe in or ingest them, gravitate more toward the kidney and not so much the nervous system.The organic mercury is what gets into the food chain. It's put into the water by chemical plants that are manufacturing things and they get into shellfish and fish, or elemental mercury that gets into the water is changed into organic mercury by sea life; we eat fish or shellfish and we get mercury exposure. That organic mercury acts very similarly to the elemental form. It affects a lot of nervous system damage. If a woman is pregnant, this can also cause birth defects and loss of the fetus if the levels get high enough.

# **What's the difference between having mercury exposure and mercury poisoning?**

# A lot of this has to do with numbers versus symptoms. Just because you're exposed to a toxin doesn’t mean you get poisoned. You can build up a blood or tissue level but not yet manifest symptoms related to poisoning. Call it a threshold. A person with no symptoms, no changes physically or chemically, we just say they've been exposed and have a high mercury level. It doesn’t become poisoning under the true definition unless someone has had physical or chemical changes in his or her  body. It's a very fine distinction, but one person is symptomatic and the other asymptomatic. The person who is symptomatic is poisoned. The one who is asymptomatic has a high blood level consistent with exposure. That doesn’t mean it's safe to have levels without symptoms. Over time, even if you're exposed at low levels, the symptoms may not manifest until weeks or months later.

# A person can find out if they had a higher-than-normal exposure — the urinary level is the most specific way. Blood levels can also be used, and we plot those against your geographic area (**7) (8)**.

**Necropsy findings and environmental contaminants in common loons from New York.**

Diagnostic and analytical findings are presented for 105 common loons (Gavia immer) found dead or debilitated in New York (USA) from 1972-99. Aspergillosis (23% of cases) and ingestion of lead fishing weights (21%) were the most common pathologies encountered. Stranding on land, shooting, other trauma, gill nets, air sacculitis and peritonitis, and emaciation of uncertain etiology accounted for most of the remaining causes of disease or death. Analysis for total mercury in the liver of 83 loons yielded a geometric mean (gm) of 10.3 mg/kg (wet basis) and range of 0.07 to 371 mg/kg, with emaciated birds generally showing higher levels. Organochlorine contaminant levels in brain were generally low, principally consisting of PCB's (gm = 2.02 mg/kg) and DDE (0.47 mg/kg).

And also: Potential Relation Between Mercury Concentrations and Necropsy Findings in Cetaceans from sGerman Waters of the North and Baltic Seas

Concentrations of total mercury and methylmercury were analysed in muscle, kidney and liver samples from 57 harbour porpoises and three white-beaked dolphins, stranded or by-caught from the German waters of the North and Baltic Seas. Levels of total mercury ranged between 0.6 and 450 μg/g dry weight (dw) and of methylmercury between 0.2 and 26 μg/gdw. No differences in concentrations of either total mercury or methylmercury were observed between stranded and by-caught animals nor between males and females. However, a difference in mercury content of cetaceans from the North and Baltic Seas was found. A significant correlation between animal age and total mercury as well as methylmercury in all examined organs could be demonstrated.

Pathological, microbiological and parasitological studies were performed on the animals. The majority of pathological lesions were caused by helminths. Lesions characteristic of acute or chronic intoxication with mercury could not be found. However, there were significant associations between mercury levels and severity of lesions with respective to nutritional state of the cetaceans examined, demonstrated by means of polychotomous logistic regression for ordinal variables and adjusted for the effects of age and location **(1)**.

**Mercury poisoning:** A type of heavy metal poisoning caused by excessive exposure to mercury. More detailed information about the[symptoms](http://www.rightdiagnosis.com/m/mercury_poisoning/symptoms.htm), [causes](http://www.rightdiagnosis.com/m/mercury_poisoning/causes.htm), and [treatments](http://www.rightdiagnosis.com/m/mercury_poisoning/treatments.htm) of Mercury poisoning is available below

**Causes of Mercury poisoning**

The primary cause of Mercury poisoning is the result:

* at any time, from exposure to toxins, poisons, environmental, or other substances.
* **Symptoms of Mercury poisoning**

The list of signs and symptoms mentioned in various sources for [Mercury poisoning](http://www.rightdiagnosis.com/m/mercury_poisoning/intro.htm)

includes the 28 symptoms listed below:

* [Tremor](http://www.rightdiagnosis.com/sym/tremor.htm)
* [Psychiatric disturbance](http://www.rightdiagnosis.com/medical/psychiatric_disturbance.htm)
* Painful extremities
* [Gingivitis](http://www.rightdiagnosis.com/g/gingivitis/intro.htm)
* [Stomatitis](http://www.rightdiagnosis.com/sym/stomatitis.htm)
* [Nausea](http://www.rightdiagnosis.com/sym/nausea.htm)
* [Vomiting](http://www.rightdiagnosis.com/sym/vomiting.htm)
* [Diarrhoea](http://www.rightdiagnosis.com/sym/diarrhea.htm)
* [Metallic taste](http://www.rightdiagnosis.com/sym/metallic_taste.htm)
* [Hearing loss](http://www.rightdiagnosis.com/sym/hearing_loss.htm)
* [Paresthesia](http://www.rightdiagnosis.com/sym/tingling.htm)
* [Paralysis](http://www.rightdiagnosis.com/sym/paralysis.htm)
* [Death](http://www.rightdiagnosis.com/sym/death.htm)
* [Headache](http://www.rightdiagnosis.com/sym/headache.htm)
* [Seizures](http://www.rightdiagnosis.com/sym/seizures.htm)
* [Breathing difficulty](http://www.rightdiagnosis.com/sym/breathing_difficulties.htm)
* [Coughing](http://www.rightdiagnosis.com/sym/coughing.htm)
* [Chest pain](http://www.rightdiagnosis.com/sym/chest_pain.htm)
* [Interstitial pneumonitis](http://www.rightdiagnosis.com/medical/interstitial_pneumonitis.htm)
* [Pulmonary edema](http://www.rightdiagnosis.com/sym/pulmonary_edema.htm)
* [Behavioral changes](http://www.rightdiagnosis.com/sym/behavioral_symptoms.htm)
* Neurological changes
* [Gastrointestinal disturbances](http://www.rightdiagnosis.com/sym/digestive_symptoms.htm)
* [Kidney toxicity](http://www.rightdiagnosis.com/medical/kidney_toxicity.htm)
* [Dehydration](http://www.rightdiagnosis.com/sym/dehydration.htm)
* [Shock](http://www.rightdiagnosis.com/sym/shock.htm)
* Mercury pigmentation
* [Neuropsychiatric symptoms](http://www.rightdiagnosis.com/sym/neurological_symptoms.htm)

**Diagnostic Testing**

Home medical tests related to [Mercury poisoning](http://www.rightdiagnosis.com/m/mercury_poisoning/intro.htm):

* **Food Allergies & Intolerances: Testing:**
  + [Food Allergy Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Food Intolerance Testing](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Water Testing](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Lead Poisoning Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Heavy Metal Poisoning Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
* **Poison-Related Testing:**
  + [Water Test Kits](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Carbon Monoxide Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Microwave Radiation Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Lead Poisoning Testing](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Radon Gas Tests](http://www.rightdiagnosis.com/home-testing/allergy.html)
  + [Heavy Metal Poisoning Testing](http://www.rightdiagnosis.com/home-testing/allergy.html)

## Wrongly Diagnosed with Mercury poisoning?

* [Alzheimer's Disease](http://www.rightdiagnosis.com/a/alzheimers_disease/intro.htm)
* [Dementia](http://www.rightdiagnosis.com/d/dementia/intro.htm)

**Mercury poisoning as a Cause of Symptoms or Medical Conditions**

When considering symptoms of [Mercury poisoning](http://www.rightdiagnosis.com/m/mercury_poisoning/intro.htm), it is also important to consider Mercury poisoning as a possible cause of other medical conditions. The Disease Database lists the following medical conditions that Mercury poisoning may cause:

* [Band keratopathy](http://www.rightdiagnosis.com/medical/band_keratopathy.htm)
* [Cerebellar syndrome](http://www.rightdiagnosis.com/m/marie_type_ataxia/intro.htm)
* [Chronic brain failure](http://www.rightdiagnosis.com/medical/chronic_brain_failure.htm)
* [Diarrhoea](http://www.rightdiagnosis.com/symptom/diarrhoea.htm)
* [Gastrointestinal bleeding](http://www.rightdiagnosis.com/g/gastrointestinal_bleeding/intro.htm)
* [Glomerulonephritis](http://www.rightdiagnosis.com/g/glomerulonephritis/intro.htm)
* [Hypersalivation](http://www.rightdiagnosis.com/s/sialorrhea/intro.htm)
* [Peripheral neuropathy](http://www.rightdiagnosis.com/p/peripheral_neuropathy/intro.htm)
* [Proximal renal tubular acidosis](http://www.rightdiagnosis.com/p/proximal_renal_tubular_acidosis/intro.htm)
* [Pyruvic acid levels raised (blood)](http://www.rightdiagnosis.com/medical/pyruvic_acid_levels_raised_blood_.htm)
* [Tremor](http://www.rightdiagnosis.com/t/tremor/intro.htm)

## Drugs and Medications used to treat Mercury poisoning:

**Note:**You must always seek professional medical advice about any prescription drug, OTC drug, medication, treatment or change in treatment plans.

Some of the different medications used in the treatment of [Mercury poisoning](http://www.rightdiagnosis.com/m/mercury_poisoning/intro.htm) include:

* [Dimercaprol](http://www.rightdiagnosis.com/medical/dimercaprol.htm)
* BAL in Oil

## Unlabeled Drugs and Medications to treat Mercury poisoning:

Unlabelled alternative drug treatments for Mercury poisoning include:

* [Penicillamine](http://www.rightdiagnosis.com/p/penicillamine_teratogenic_agent/intro.htm)
* Cuprimine
* Depen

**Latest treatments for Mercury poisoning:**

The following are some of the latest treatments for [Mercury poisoning](http://www.rightdiagnosis.com/m/mercury_poisoning/intro.htm):

* [Chelation](http://www.rightdiagnosis.com/medical/chelation.htm)
* [Activated charcoal](http://www.rightdiagnosis.com/medical/activated_charcoal.htm)
* [Gastric lavage](http://www.rightdiagnosis.com/medical/gastric_lavage.htm)
* IV fluids
* [Dimercaprol](http://www.rightdiagnosis.com/medical/dimercaprol.htm)
* [DMSA](http://www.rightdiagnosis.com/medical/dmsa.htm)
* [Tetracyclines](http://www.rightdiagnosis.com/t/tetracycline_teratogenic_agent/intro.htm) **(2),(3),(4)**

# **Mercury Poisoning and Its Treatment with N-Acetyl-D,L-Penicillamine**

Severe chronic elemental mercury poisoning produced in a factory worker the signs usually attributed to organic mercury poisoning. Since it is known that the converse occurs, the two types of mercury poisoning need not be considered entirely distinct diseases.

Urinary mercury excretion rose from some 2 mg daily to a peak of 8 mg during treatment with N-acetyl-D,L-penicillamine (not D-penicillamine). Fecal mercury excretion rose from 0.8 to 1.0 and later from 0.25 to 0.5 mg daily. Neurologic signs, including a bizarre movement disorder, began to improve within days of the start of treatment and were minimal two months later.

Because the use of N-acetyl-D,L-penicillamine in mercury poisoning has been associated with chemical or clinical evidence of improvement in 88 per cent of reported cases (as compared with British anti-lewisite in 32 per cent, and calcium ethylene diamine tetra-acetate in 50 per cent), it deserves further trial in organic and chronic elemental mercury poisonings **(5),** (6).

REFRENCES:

* (1) harbour porpoise; white-beaked dolphin; mercury burden; pathology; North Sea; Baltic Sea

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* (2) Articles from The Journal of Clinical Investigation are provided here courtesy of **American Society for Clinical Investigation**

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