

Epilepsy/Seizures

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## 1 Epilepsy/Seizures

Epilepsy/Seizures

B. Windham (ED)

### 1.1 Introduction

Seizures are a result of sudden, brief electrical changes or disturbances in the brain. Epilepsy is where there are chronic, recurrent seizures. Some seizures are as a result of metabolic or chemical imbalances, alcohol or drug use, cardiac disease, infectious disease, toxic neurological effects, etc. Syncope involves losing consciousness, but for non-epileptic reasons such as reduced blood flow to the brain, hypoglycemia, insulin resistance, etc. Epilepsy affects about 2 million people in the U.S., with a higher incidence of seizures. (41)

The central nervous system has 2 major divisions-central nervous system and peripheral nervous system. The peripheral nervous system has 2 divisions, somatic and autonomic. The autonomic nervous system exercises control over automatic and involuntary functions of the body such as heart rate, respiration, etc. Seizures involve a complex interaction between the autonomic nervous system and the central nervous system. Seizures are often preceded by a partial seizure or aura having varied characteristics, which can warn those susceptible to seizures of an imminent seizure. Some can actually control or prevent actual seizures by preventive or biofeedback measures (41). Anti-epileptic drugs (AEDs) are commonly used to control seizures but sometimes are not effective and sometimes have adverse long-term health effects, including inducement of birth defects/congenital conditions in use by pregnant women or infants.

Seizure triggers include low blood sugar, dehydration, fatigue, lack of sleep, stress, temperature extremes, depression, flashing lights, allergens, caffeine, alcohol, aspartame, pesticides, toxic metals. The most common allergen triggers are wheat, milk, and petrochemicals (41). Identification and avoidance of such triggers usually reduces effects. Caffeine causes release of adrenaline which has blood sugar effects that can trigger seizures. Similar for alcohol, and aspartame an excitotoxin that has trigger effects especially on those subject to depression or mood disorders. Similar for MSG, another common excitotoxin (42). As will be documented exposures to mercury from dental amalgams and toxic metals can also commonly trigger and be factors in seizures and epilepsy, with improvement after amalgam replacement and detoxification.

### 1.2 Mercury exposure and chronic health effects

*Dental amalgam is the largest source of both inorganic and methyl mercury<sup>1</sup> in most who have mercury*

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<sup>1</sup>**Informativo:** “Dental Amalgam Mercury Solutions”.

amalgam fillings<sup>1</sup>. Those with several amalgam fillings have on average at least 10 times as much mercury exposure as those without amalgam fillings. After replacement of mercury amalgam fillings, the level of mercury in saliva and excretion declines approximately 90%. Prior to vaccinations, the *largest source of mercury exposure of a fetus or infant*<sup>2</sup> is from the mother's dental amalgam<sup>2</sup>. Over the last decade, most vaccinations contained high levels of mercury and were the *largest source of mercury exposure in most infants and young children*<sup>3</sup> 3.

Amalgam dental fillings produce *voltaic electrical currents*<sup>4</sup> in the teeth which push high levels of mercury into the gums and oral mucosa (4), increase mercury vapor release into oral air and saliva (1), where it is distributed throughout the body and causes significant harmful effects. These currents are measured in micro amps, with some measured at over 4 micro amps. The central nervous system operates on signals in the range of nano-amps, which is 1,000 times less than a micro amp (4).

These voltaic currents and the resulting high levels of mercury exposure are documented to often have significant *neurological effects*<sup>5</sup> (39). Negatively charged fillings or crowns push electrons and mercury into the oral cavity since saliva is a good electrolyte and cause higher mercury vapor losses.<sup>5</sup> Mercury and other metals accumulate in the gums and oral mucosa at the base of teeth with amalgam fillings or metal crowns over amalgam, and is called mercury tattoos 4. Patients with *autoimmune neurological conditions caused by mercury*<sup>6</sup> (38, 39- like *MS*<sup>7</sup>, *depression*<sup>8</sup>, epilepsy, etc. are often found to have a lot of high negative current fillings 5.

In addition to its extreme *neurotoxicity*<sup>9</sup> and *immunotoxicity*<sup>10</sup>, mercury commonly causes *autoimmunity*<sup>11</sup> which can also be a factor in conditions like epilepsy, MS, lupus, etc.<sup>22, 8, 38, 39</sup> Prenatal exposure to mercury has been found to predispose animals and infants to seizures and epilepsy. 6, 7, 2

A major factor in epilepsy has been found to be *essential mineral deficiencies and imbalances*<sup>12</sup> - such as magnesium, zinc, calcium, etc.<sup>13-18</sup> Mercury is well documented to cause *cell membrane permeability changes, mineral efflux from cells, leaky gut, and enzyme blockages*<sup>13</sup> that commonly result in essential mineral deficiencies and imbalances 14-20, 8. Mercury causes significant destruction of stomach and intestine epithelial cells, resulting in damage to stomach and intestinal lining which along with mercury's ability to bind to SH hydroxyl radical in cell membranes alters permeability 14-16, 3 and adversely alters bacterial populations in the intestines causing leaky gut syndrome with toxic incompletely digested complexes in the blood 14-20, 3, as well as poor nutrient absorption<sup>14-20</sup>.

Some of the main mechanisms of toxic effects of metals include *cytotoxicity*<sup>14</sup>; changes in cellular

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<sup>2</sup>**Informative:** "Infertility, Birth Defects, and Fetal Developmental Effects Related to Mercury from Amalgam Dental Fillings & Other Toxins".

<sup>3</sup>**Informative:** "Neurological and Immune Reactive Conditions Affecting Kids: The mercury connection to neurological pervasive developmental disorders (**autism, schizophrenia, dyslexia, ADD, childhood depression, learning disabilities, OCD, etc.**) and developmental immune conditions (**eczema, asthma, and allergies**)".

<sup>4</sup>**Informative:** "Oral galvanism and Electromagnetic Fields (EMF)".

<sup>5</sup>**Informative:** "Neurological Effects of Mercury Exposure".

<sup>6</sup>**Informative:** "Immune Reactive Conditions: The Mercury Connection to Eczema, Psoriasis, Lupus, Asthma, Scleroderma, Rheumatoid Arthritis, and Allergies".

<sup>7</sup>**Informative:** "Mercury from Amalgam Fillings is a Common Cause of MS, ALS, PD, SLE, RA, MCS, AD, etc.". .

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<sup>9</sup>**Informative:** "Neurological Effects of Mercury Exposure".

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<sup>12</sup>**Internet:** "<http://www.flcv.com/damspr18.html>".

<sup>13</sup>**Internet:** "<http://www.flcv.com/damspr18.html>".

<sup>14</sup>**Informative:** "Mercury Exposure Levels from Amalgam Dental Fillings; Documentation of Mechanisms by Which Mercury Causes over 30 Chronic Health Conditions; Results of Replacement of Amalgam Fillings; and Occupational Effects on Dental Staff".

membrane permeability; inhibition of enzymes, coenzymes, and hormones; and generation of lipid peroxides or free radicals-which result in neurotoxicity, immuno toxicity, impaired cellular respiration, gastrointestinal /metabolic effects, hormonal effects, and immune reactivity or autoimmunity 14-23, 2-9, 39. Also mercury binds with cell membranes interfering with sodium and potassium enzyme functions, causing excess membrane permeability, especially in terms of the blood-brain barrier.14-16 Less than 1 ppm mercury in the blood stream can impair the blood-brain barrier.

Mercury's forming strong bonds with and modification of the-SH groups of proteins causes mitochondrial release of calcium 18, 14, 16, 3, 40, as well as altering molecular function of amino acids and damaging enzymatic processes 15, 16, 3, 40, resulting in improper cysteine regulation 19, 20, inhibited glucose transfer and uptake 15, 14, damaged sulfur oxidation processes 19, 20, 40, reduced glutathione availability<sup>14</sup> (necessary for detoxification), and neurological effects<sup>22, 18, 38, 23</sup>. The *essential mineral deficiencies and imbalances*<sup>15</sup> have been found to be a major factor in Epilepsy, and correcting mineral imbalances has been found to cause significant improvement in epilepsy.<sup>13, 5, 6</sup>

A large epidemiological study by the National Institute of Health, the nation's principal health statistics agency, found a significant correlation between having a larger number of amalgam fillings and people suffering from conditions such as multiple sclerosis and epilepsy 24. Fewer of those with these conditions have zero fillings than those of the general population while more of those with the condition have 17 or more amalgam surfaces than in the general population. Other studies have found similar connections between vaccinations containing mercury and epilepsy.<sup>23, 3, 25</sup>

A doctor with extensive experience in researching and treating mercury toxicity has found that blocked nerve ganglions are a common cause of seizures, migraines, and other chronic neurological problems.<sup>6</sup>Based on his experience Dr. Klinghardt has found that the majority of such conditions are due to dental metals and toxins related to *root-canaled teeth*<sup>16</sup> or improperly healed tooth extraction sites (*cavitations*<sup>17</sup>). He finds that after treatment to unblock the ganglions and mercury detox or cavitation treatment, most patients rapidly recover from such conditions. Numerous other doctors whom he has trained through seminars and courses have had similar experience.

Other doctors treating *autism*<sup>18</sup>, including seizures which are common in autism, found that mercury and other toxic metals disable the metallothionein function that has several major metabolic and neurological functions. This results in inability to excrete toxic metals, accumulation of mercury and other toxic metals, inability to detoxify mercury and other toxic metals, significant imbalances in zinc/copper levels in the brain and G.I. tract, and major neurological and digestive system effects.  
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Another researcher 28 who has developed test equipment and tested epilepsy/seizure patients has found the following commonly present in epilepsy/seizure patients: Ascaris (pet hookworm) larvae in brain, bacterial infections, viruses, dental metals, vanadium (natural gas leak), and other toxins including PVC, titanium, zirconium, asbestos, lead, solvents, ergot (mold). She also finds that malvin can provoke seizures: the coloring in grapes, blueberries, strawberries, plums, etc.- and which is also found in chicken and eggs. After determination of the factors involved for a given patient and treatment she says most patients are cured. The main treatments are recommended for most cases: dental metal and cavitation checks and cleanups, avoidance and detox of environmental toxins, parasite cleanse and kidney/liver cleanses. Other doctors have likewise found that patients with toxic exposures and weakened immune systems are more susceptible to parasites and biological invaders which must also be treated.<sup>29</sup>

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### 1.3 Alternative Treatments of Epilepsy and Seizures

Most patients with epilepsy recovered or had significant improvement after amalgam replacement 5, 6, 8-12, 26-29 and likewise for many with autism and seizures who were treated for mercury toxicity by treatment clinics.<sup>30</sup>

For reasons previously documented and further documented by medical studies and clinical experience in references cited, supplementation alternatives are often beneficial in treatment of seizures and epilepsy. B vitamins, essential minerals, some herbal products, some amino acids and essential fatty acids are often beneficial. Vitamin B6 plays an important role in the conversion of glutamic acid to GABA (gamma-aminobutyric acid). GABA is the principal inhibitory neurotransmitter in the brain. Impairment of GABA neurotransmission processes has been found to often be a factor in seizures. B6 deficiency can result in reduced GABA production. (41) Other B vitamins also are necessary for proper brain function. B13 also has been found to reduce seizures in some. Vitamin D and Vitamin E have also been found to be beneficial in reducing seizures and seizure severity. Magnesium deficiency has been shown to increase seizures in some and be a factor in some seizures; manganese aids in sugar metabolism, selenium deficiency can result in deficient glutathione peroxidase which can be a factor in some seizures. Supplementation of these as well as zinc and calcium have been found to reduce seizures in many. (41, etc.) Diet measures including avoidance of obesity and insulin resistance, along with certain amino acids and essential fatty acids have been found to reduce seizures in many. Taurine is an inhibitory amino acid and like GABA has been found to be effective in reducing seizure activity in some. Evening primrose oil has been found to reduce seizures in some. Regular exercise has also been found to reduce seizures in most and to improve general well-being. The herbs Black Cohosh, Lobelia, and coleus forskohlii extract have been found to be beneficial in some (41). Relaxation techniques such as yoga and biofeedback techniques have been found helpful by some.

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Dr. Ward Dean’s nutritional program for seizure disorders: He recommends using a nutritional “shotgun” therapy, which includes:

Atkins Diet \* Magnesium: 500-1,000 mg/day \* Selenium:100-200 mcg/day \* Taurine : 1-3 gm/day \* L- carnitine : 1-3 gm/day \* GABA (gamma amino butyric acid) 500-1,000 mg/day \* Vitamin B complex, w/special emphasis on: \* Vitamin B1: 50-100 mg/day \* Vitamin B6: 200-500 mg/day \* Folic Acid: 400-1,000 mcg/day \* Vitamin E: 400-800 IU/day \* DMG (dimethylglycine): 50-200

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<sup>37</sup>**Internet:** “<http://www.healing-arts.org/children/metal-metabolism.htm>”.

<sup>38</sup>**Informative:** “Neurological Effects of Mercury Exposure”.

<sup>39</sup>**Informative:** “Immune Reactive Conditions: The Mercury Connection to Eczema, Psoriasis, Lupus, Asthma, Scleroderma, Rheumatoid Arthritis, and Allergies”.

<sup>40</sup>**Informative:** “Mercury Exposure Levels from Amalgam Dental Fillings; Documentation of Mechanisms by Which Mercury Causes over 30 Chronic Health Conditions; Results of Replacement of Amalgam Fillings; and Occupational Effects on Dental Staff”.

<sup>41</sup>**Internet:** “<http://www.life-enhancement.com/>”.

<sup>42</sup>**Internet:** “<http://www.blaylockreport.com/>”.



mg/day \* Pregnenolone: 100-500 mg/day \* Kava Kava: 200-800 mg/day

Hal Huggins (35) says he has a lot of clinical experience that mercury causes epilepsy and replacement often cures it. Others such as Dr. Noel Campbell, Dr. Hulda Clark (485), and ElectroDermal Screening testers with considerable clinical experience say likewise.

Autism: A Unique Type of Mercury Poisoning, Sallie Bernard et al

Seizures; epilepsy — — Causes seizures, convulsions — — — — Seizures; epilepsy Causes subtle, low amplitude seizure activity

New research into the effects of mercury in Vaccines and links to Epilepsy are coming to light

Green Bay News-Chronicle: Exposure to mercury linked to neurobehavioral disease epidemic in children, July 30, 2004, [http://www.safeminds.org/pressroom/press\\_releases/30July2004-GreenBayNews.pdf](http://www.safeminds.org/pressroom/press_releases/30July2004-GreenBayNews.pdf)<sup>43</sup> & Breakthrough Research: New Columbia University Study Confirms IOM Vaccine-Autism Report Is Wrong, [http://www.safeminds.org/pressroom/press\\_releases/14June2004\\_Hornig-Thimerosal\\_Mouse.pdf](http://www.safeminds.org/pressroom/press_releases/14June2004_Hornig-Thimerosal_Mouse.pdf)<sup>44</sup> National Vaccine Information Center <http://www.909shot.com/><sup>45</sup>

Epilepsy Cure: Over 21 years ago, in June 1978, I started taking a large dose of the B Complex vitamins. The dosage was 20mg. B1, B2 etc.; B12 20mcg and folic acid at 400mcg. I immediately felt more energetic and alive. I had grand mal epilepsy for the prior 25 years, since I had entered puberty at age 13. In those days 20 mg was probably a megadose, I'm not sure, today I take 50mg. because its more commonly available. I had been taking anticonvulsant medication trade name Mebroin including Phenobarbital and a smaller amount of Dilantin. I was able to wean my way off the anticonvulsant medication in July of 1978. I have not taken any medication since, and have become a new person <http://curezone.com/forums/m.asp?f=83&i=305><sup>46</sup>

A study published in the *New England Journal of Medicine* examined newborns for birth defects related to anticonvulsant drugs. Each newborn belonged to one of three groups: newborns exposed to anticonvulsant drugs in the womb; newborns of mothers with epilepsy who did not take anticonvulsant drugs; and newborns of mothers without epilepsy or a history of seizures. Results showed birth defects were more frequent in infants exposed to anticonvulsant drugs (20% of infants exposed to one drug had birth defects and 28% of infants exposed to two or more drugs had birth defects). However, the infants of mothers with epilepsy who were not treated with anticonvulsant drugs were at no greater risk of birth defects than infants of mothers without epilepsy.

Harvard Medical School Family Health Guide <http://www.health.harvard.edu/fhg/Darchive/diseases.1101>

This study suggests birth defects are caused by anticonvulsant drugs and not by epilepsy itself. A separate, earlier study based on data from a number of different countries identified the types of birth defects associated with common anticonvulsant drugs. Some of these findings are summarized below:

### Side Effect Warning for New Rheumatoid Arthritis Drug, Remicade (Infliximab)

All drugs have side effects, but some of them don't become apparent until after the drugs have been approved and in use for some time.

Remicade (infliximab), a powerful new drug for rheumatoid arthritis, has been found to worsen congestive heart failure. The drug was actually being tested to see if it would help patients with congestive heart failure. Instead, the opposite was seen in a trial involving 150 people with moderate to severe congestive heart failure. Of the 101 subjects treated with Remicade, 7 died. In contrast, no fatalities occurred in the 49 patients being treated with the sugar pill placebo.

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<sup>43</sup>**Internet:** "[http://www.safeminds.org/pressroom/press\\_releases/30July2004-GreenBayNews.pdf](http://www.safeminds.org/pressroom/press_releases/30July2004-GreenBayNews.pdf)".

<sup>44</sup>**Internet:** "[http://www.safeminds.org/pressroom/press\\_releases/14June2004\\_Hornig-Thimerosal\\_Mouse.pdf](http://www.safeminds.org/pressroom/press_releases/14June2004_Hornig-Thimerosal_Mouse.pdf)".

<sup>45</sup>**Internet:** "<http://www.909shot.com/>".

<sup>46</sup>**Internet:** "<http://curezone.com/forums/m.asp?f=83&i=305>".

Some 2 million Americans suffer from rheumatoid arthritis, while 5 million have congestive heart failure. So an undetermined number must have both illnesses. As a result, Centocor, the company making Remicade, after consultation with the US Food and Drug Administration, has sent letters to doctors urging that patients with both rheumatoid arthritis and congestive heart failure not be treated with their drug. *November 2001 Update*

This new information, comes straight from the National Institute of Health, the NHANES III Study (National Health and Nutritional Examination Survey), a study that according to the mission statement of National Center for Health Sciences “is to provide statistical information that will guide the actions and policies to improve health of the American people. As the Nation’s principal health statistics agency, NCHS leads the way with accurate, relevant, and timely data.”

A recent statistical analysis of this data was done to see if there were any links to dental fillings and adverse health conditions.

Their initial figures revealed that while 78% of the American public have dental fillings, 95% of the people with International Classification of Disease Codes 340-349: “Disorders of the Central Nervous System”, which include MS, Epilepsy, Paralysis and Migraines, have dental fillings.

National Institute of Health, NHANES III Study (National Health and Nutritional Examination Survey) [http://www.mercola.com/article/mercury/no\\_mercury.htm](http://www.mercola.com/article/mercury/no_mercury.htm)<sup>47</sup>

### **Prenatal Mercury Exposure Raises Blood Pressure**

Exposure to mercury before birth may lead to increased blood pressure in childhood, reports an international team of researchers. The islanders consume a diet rich in marine products, such as pilot whale meat, which expose them to mercury, according to the investigators. Blood pressures increased by about 14 points as blood mercury concentrations at birth increased from 1 to 10 micrograms per liter. The report indicates that 10 micrograms per liter corresponds to the upper limit of mercury exposure recommended by the German Commission on Human Biomonitoring, indicating that blood pressure can be increased by exposure to mercury levels below recommended limits. Children with lower birth weights experienced blood pressure increases about 50% higher than normal birth weight children having similar mercury levels. The investigators cite evidence that mercury toxicity can cause high blood pressure that persists long after the mercury exposure has been removed, resulting in a significant risk for diseases such as heart attack and stroke.

### **Epidemiology July 1999; 10:370-375**

the prestigious New England Journal of Medicine published an *editorial* (12)<sup>48</sup> calling mercury fillings the chief source of mercury exposure to the US population

Salonen JT, Nyyssonen K, Salonen R. Fish intake and the risk of coronary disease. *N Engl J Med.* 1995 Oct 5; 333 (14):937

### **Effects of continuous low-dose exposure to organic and inorganic mercury during development on epileptogenicity in rats.**

Szasz A, Barna B, Gajda Z, Galbacs G, Kirsch-Volders M, Szente M. Neurotoxicology; 2002 Jul; 23 (2):197-206.

Department of Comparative Physiology, University of Szeged, Hungary. [szente@bio.u-szeged.hu](mailto:szente@bio.u-szeged.hu)

The effects of chronic, low-dose fetal and lactational organic (MeHgCl) and inorganic (HgCl<sub>2</sub>) mercury intoxication on epileptogenicity were investigated and compared in rats. The main observations after both mercury treatments were a facilitated seizure expression and propagation evoked by 4-aminopyridine (4-AP). The seizure susceptibility of the offspring seemed to be in a parallel relation to the mercury concentration in the cortical tissue, which was significantly higher in treated

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<sup>47</sup>**Internet:** “[http://www.mercola.com/article/mercury/no\\_mercury.htm](http://www.mercola.com/article/mercury/no_mercury.htm)”.

<sup>48</sup>**Internet:** “[http://www.mercola.com/article/mercury/no\\_mercury\\_ref.htm](http://www.mercola.com/article/mercury/no_mercury_ref.htm)”.

animals as compared to the controls. While MeHgCl enhanced the number of ictal periods, HgCl<sub>2</sub> facilitated the duration of seizure discharges in younger animals. HgCl<sub>2</sub> intoxication seemed to be more permanent than MeHgCl. Changes in the summated ictal activity—which is an indication of epileptogenicity—were observed in the opposite directions in the two treated groups with increasing age. The amplitudes of seizure discharges were smaller in both mercury-treated groups than in the controls, which could be a consequence of a depressed proliferation of neurons or enhanced cell death in the neocortex. In summary, we observed that adult rats exposed to organic or inorganic mercury chemicals during their embryonic life, are more prone to epilepsy than control rats given only 4-AP.

#### “THIMEROSAL ANALYSIS”

**From: Verstraeten, Thomas, U.S. CDC. Sent: Monday, November 29, 1999 11:45 AM**

#### SUMMARY (II)

The results of the Generation Zero analyses are striking and more supportive of a causal relationship between vaccine mercury exposure and childhood developmental disorders (especially autism) than any of the results reported later

\* Relative risks of autism, ADD, sleep disorders and speech/language delay were consistently elevated relative to other disorders and frequently significant. Disease risk for the high exposure groups ranged from lows of 1.5X-2 times to as high as 11 times the disease risk of the zero exposure group.

\* Many other outcomes showed no consistent effect, while a few appeared to show a protective effect from vaccine mercury exposure (most likely children with these diagnoses were immunized later).

\* The strongest effect was for the highest levels of mercury exposure at the earliest time of exposure, consistent with the idea that infant brain development is most sensitive to the earliest exposures.

\* The elevated risk of autism for the highest exposure levels at one month ranged from 7.6 to 11.4 times the zero exposure level. This increased risk level corresponds to the tenfold increase in autism rates seen since vaccine mercury exposures increase starting in 1990.

#### **399.0 Autism**

#### **307.0 Stammering**

#### **307.2 Tics**

\* 307.20, tic disorder, unspecified

#### **307.4 Specific disorders of sleep of non-organic**

\* 307.45, phase shift disruption of 24 hr. sleepwake cycle

\* 307.46, somnambulism or night terrors

#### **314.0 Attention deficit disorder**

\* 314.00, ADD without mention of hyperactivity

\* 314.01 ADD with hyperactivity

#### **315.3 Developmental speech or language disorder**

\* 315.31, developmental language disorder

\* 315.39, other developmental speech or language disorder

### **315.4 Coordination disorder**

### **583 Nephritis and nephropathy, not acute or chronic**

\* 583.9 nephritis and nephropathy, with unspecified pathological lesion in kidney

<http://www.safeminds.org/Generation%20Zero%20Pres.pdf>