

# EIGHT MORE EXPERT OPINIONS

## CONFIRMING THE LETHALITY OF SRILA PRABHUPADA'S CADMIUM POISONING

*Excerpted from Chapter 32: Part Four: The Forensics Breakthrough, in Kill Guru, Become Guru: The Poisoning of Srila Prabhupada's Body. (Free E-Book available for quick download from:*

*[www.killgurubecomeguru.org/books/](http://www.killgurubecomeguru.org/books/)*

### SECOND EXPERT OPINION: DR. ANIL AGGARWAL FORENSIC TOXICOLOGIST



While browsing the internet for sites related to cadmium poisoning, I came across a colorful character, a Dr. Anil Aggarwal in New Delhi who is a Forensic Toxicologist. A Professor of Forensic Medicine at Maulana Azad Medical College since 1985, he specializes in solving mysterious and unexplained deaths, and is an expert in poisons. His website chronicles many of the bizarre cases he has unraveled, including one of acute cadmium poisoning. Dr. Aggarwal also maintains an Internet Journal of Forensic Medicine and Toxicology and an Internet Journal of Book Reviews.

Contacting him about our investigation, he agreed to review our case. I sent him a medical symptoms summary and detailed the discovery of cadmium in new hair tests. One of our team members was about to leave for India on another fact-finding mission, and I arranged for him to see the professor in person and to bring a copy of *Someone Has Poisoned Me*. In early May 2002, we had some very productive meetings with Dr. Aggarwal and a half dozen of his associates, all top university scientists in toxicology and medicine. The particulars of Srila Prabhupada's case were presented, discussed, and analyzed. Dr. Aggarwal rendered his professional opinion:

***"Cadmium 20 ppm in hair is prima facie evidence of poisoning with malicious intent."***

### THIRD EXPERT OPINION: DR. DIPANKAR CHAKRABORTI DIRECTOR OF ENVIRONMENTAL STUDIES, JADAVPUR UNIVERSITY, INDIA



Dr. Dipankar Chakraborti was in 2002 at the head of the arsenic crisis in Bengal, imminently qualified in heavy metals poisoning, hair analysis, and heavy metals intoxication. He elaborated that his field of expertise included poisoning by mercury, antimony, arsenic, and cadmium.

He was interviewed in India by a team member of the Truth Committee in April 2002. Asked what he thought would be the significance of a person having a hair level of 20 ppm cadmium. His reply was:

***“He will be finished. He can’t survive more than three, four days.”***

Yet Srila Prabhupada survived for at least nine months with such high cadmium levels- only by dint of the will of the Lord and due to endowment with all the mystic yoga perfections. Srila Prabhupada was not an ordinary person but a topmost yogi. Surely the poisoners were wondering why these massive amounts of poison were not having the expected results on time.

Dr. Dipankar’s recent activities in brief:

- Visiting Faculty, Big Data Analytics Programme, S.P. Jain Institute of Global Management, Mumbai, 2015-2016
- Visiting Faculty, CSE Department, NIT Mizoram, 2014-2015
- Assistant Professor, CSE Dept, NIT Meghalaya, 2012-2014
- Visiting Research Scholar, Precision and Intelligence (P&I) Laboratory, Advanced Information Processing Division: Okumura Group, Tokyo Institute of Technology (TIT), Tokyo, 2011
- Research Fellow, India-Japan Cooperative Programme-Project (DST-JST), Multidisciplinary research field on “Sentiment Analysis where AI meets Psychology” 2010-2012, CSE Department, Jadavpur University, Kolkata, India-700032
- Research Engineer, DIT, MCIT, Government of India sponsored project titled “Development of the Cross-Lingual Information Access (CLIA) System” 2009-2010, CSE Department, Jadavpur University, Kolkata, India-700032
- Visiting Faculty, CSE Department, GCETTS, 2008-2009

## **FOURTH EXPERT OPINION: DR. A. CHATT**

### **DALHOUSIE UNIVERSITY, HALIFAX, NOVA SCOTIA**

In 1998 we had used Dr. A. Chatt in Halifax for testing our first hair sample, ND-1. He uses neutron activation analysis, although his equipment has lesser accuracy on very small mass samples than Dr. Morris in Missouri. Dr. Chatt remarked upon the near 20 ppm cadmium found in Srila Prabhupada’s hair by his friend and colleague Dr. Morris:

***“The level of 20 ppm seems to be very high if external contamination is ruled out. I have done thousands of hair tests over many years and will sometimes see at most 2 ppm cadmium.”***



Such a high level was so unusual that his first reaction was about what kinds of hair shampoos, creams, or compounds might have caused external contamination of the hair. We replied: ***“None of these things were ever used.”***

**Dr. Amares Chatt: Some of his research interests:**

Development of Nuclear Analytical Methods: Instrumental thermal, epithermal and fast neutron activation analysis; Studies on very short-lived neutron activation

products and cyclic and pseudo-cyclic neutron activation analysis; Methods to correct for coincidence losses and high count-rate gamma-ray spectroscopy; Compton suppression gamma-ray spectroscopy; Preconcentration neutron activation analysis; Radiochemical neutron activation analysis; Derivative neutron activation analysis; etc.

Development of Speciation Methods: Ultrafiltration; Ion exchange; Solvent extraction; Coprecipitation; Electro-migration; Ammonium sulfate precipitation; Gel filtration chromatography; hydroxylapatite chromatography; Reversed-phase extraction chromatography; High-performance liquid chromatography; Chromatofocussing; Electrophoresis; Electrofocusing; Isotachopheresis; Analytical ultracentrifugation; Enzymatic assay; Cloud-point extraction; Nuclear magnetic resonance spectroscopy; Mass spectrometry; etc.

Environmental Chemistry: Marine Chemistry: Development of analytical methods for the determination of total and species-specific concentrations of toxic elemental pollutants in the particulate and soluble fractions of water from estuaries, coasts and open oceans; and studies on sources, pathways and sinks of toxic elements and their residence times in marine environment.

Atmospheric Chemistry: Development of nuclear analytical and speciation methods for the simultaneous determination of trace elements in both high-volume and size-fractionated atmospheric suspended particulate matter, dry deposition (i.e. dust fall), particulate and soluble fractions of wet deposition (i.e. acid rain, acid fog, cloud and snow); identification of sources using size and concentration correlation, enrichment factor and modelling techniques; studies on fossil fuels and their waste products; and long-range transport of toxic elements in atmosphere.

Health-Related Chemistry: Nutritional Chemistry: Determination of trace elements of nutritional and toxicological significance in individual food items, composite foods and duplicate diets; calculation of average daily dietary intakes; studies on bioavailability of trace elements in foods and diets by *in vitro* enzymolysis; and identification of the bioavailable species.

Drinking Water Quality: Development of preconcentration neutron activation analysis methods for the determination of ultra-trace levels of toxic elements in drinking water; survey of the quality of local drinking water from taps, wells, rivers and bottles.

Epidemiological Monitors: Studies on suitability of human scalp hair and nail as epidemiologic monitors of toxic elements; investigations on relationship of elemental levels in hair and internal tissues of humans using autopsy and biopsy samples and of animal models; and screening of population groups for massive ingestion of selected toxic metals using hair.

Bioanalytical Chemistry: Development of bioanalytical methods, viz. biochemical methods in conjunction with neutron activation, for the separation, purification and characterization of metalloproteins and protein-bound trace elements in subcellular fractions of bovine kidneys; in-depth studies on selenoproteins in nuclei and cytosol fractions of bovine kidneys; and investigations of bioavailable seleno-enzymes and seleno-amino acids in foods and diets.

Radioactive Waste Management: Evaluation of the risk associated with the potential disposal of high-level nuclear wastes in deep geologic and sub-seabed formations; analytical chemistry of radioactive waste management; leaching of radionuclides from vitrified highly active wastes by groundwater; diffusion of radionuclides in sediments; speciation of radionuclides in geological repositories; and identification of potentially migrating radionuclide species and calculation of their stability constants.

Production of Radioisotopes: Production of short- and medium-lived radioisotopes for medical and research purposes using the Dalhousie University SLOWPOKE-2 reactor (DUSR) facility.

Training in Research Reactors: Training in the use of small research reactors, such as Canadian SLOWPOKE, Chinese MNSR, etc., for research and educational purposes.

**COMMENT:** Mustard seed oil was used to massage Srila Prabhupada daily, but it does not have cadmium to any meaningful degree. Otherwise, Srila Prabhupada used no cosmetics, shampoos, etc that could possibly have caused external cadmium contamination of the hair. The containers in which the hair samples were stored were tested by Dr. Morris and found to have no contamination of cadmium.

Later we will show how the hair clippers themselves were tested for cadmium plating- and the results were negative. The clippers' lubricating oil has no arsenic, according to Shell Oil, and we would assume no cadmium either. So how could there be such high levels of external contamination in three samples? Our conclusion is that the cadmium was NOT EXOGENOUS but endogenous, or internally assimilated by poisoning.

## FIFTH EXPERT OPINION: ARL LABS ANALYTICAL RESEARCH LABS, PHOENIX, ARIZONA



Analytical Research Labs does commercial hair analyses for individuals, doctors, and clinics. The Standard Industrial Classification(SIC) of Analytical Research Labs is 807101 - Laboratories-Medical. A medical laboratory or clinical laboratory is a laboratory where tests are done on clinical specimens in order to get information about the health of a patient as pertaining to the diagnosis, treatment, and prevention of disease. They are perhaps the largest such outfit in the US (as of 2004), and have a very professional and respected performance rating. As of 2003, they were doing 35,000 hair tests annually. President Kenneth Paul C. Eck was interviewed by myself in 2004; as of 2017 he had been in operation for almost 4 decades. He proved very helpful by disclosing these facts derived from their hair mineral analysis operation:

- 1. They rarely see cadmium levels over 1 ppm,**
- 2. That the usual range was from 0.02 – 0.10 ppm (or an average 0.06 ppm).**
- 3. And that: "20 ppm was off the chart."**

***We also spoke to Russ Madarash, ARL's head chemist, who confirmed that:***

- 1. Values are usually under 0.10 ppm (1/10<sup>th</sup> of 1),**
- 2. That their "red alert level" is 2 ppm, which would require a second test to verify such an elevated amount,**
- 3. The highest value that he could remember was 4 ppm.**

So at 35,000 tests a year and after many years of such operation, we can say that out of perhaps several hundred thousand people, one ARL client had 4 ppm hair cadmium, while no one had the levels we found in Srila Prabhupada's hair. Thus Srila Prabhupada's cadmium levels were **"OFF THE CHART."**

Nityananda das used ARL several times to check his hair for environmental contamination, such as due to dust from lead paint. In 1998, after sanding antique window frames by hand and without a dust mask, he remembered that old paints were often made with lead, so he did a hair test with ARL. Sure enough, the lead was quite elevated, and he gained confidence in the accuracy of commercial hair testing. He noted also that ARL's president and head chemist, when interviewed separately, both confirmed the same levels of what their clients' average normal hair cadmium levels had been.

## SIXTH EXPERT OPINION: DR. MEHTA AYURVEDIC PHYSICIAN

Dr. Metha, an Ayurvedic physician from Houston, Texas, was shown in 1998 several photographs of Srila Prabhupada during his last days, and he also watched the video documentary of Srila Prabhupada's last months entitled: "The Final Lesson." Dr. Mehta had been a practicing Ayurvedic physician since 1948. His summary comments edited from a recorded interview are:

*"The expression and symptoms of the face, the eyes and the manner of speaking indicate to me that Srila Prabhupada was poisoned, most probably by arsenic or mercury. He himself said that he was poisoned, confirmed by dullness of the face and how the natural color of the body is gone. This is very hard for the average person to understand; only the experienced eye can tell."*

## SEVENTH EXPERT OPINION: SCIENTIFIC STUDIES SCIENTIFIC LITERATURE ON CADMIUM POISONING

### WHAT ARE AVERAGE NORMAL CADMIUM LEVELS?

Published scientific studies are accepted as presentation of scientific facts by experts. So exactly what do scientific studies show to be the average normal level of cadmium in human hair? Below is a large cross section of studies separated into unexposed subjects and those working or living in environmentally or occupationally contaminated situations. I collected the findings of numerous authoritative sources.

We note that even the levels of persons exposed occupationally, environmentally, or accidentally to abnormal cadmium amounts are also far below the levels seen in Srila Prabhupada's hair, being a fraction one ONE PPM.

### CADMIUM UNEXPOSED SUBJECT STUDIES:

- 1) Laurie Miller at the Center for Disease Control (888 422 8737) mailed us their thick manual on cadmium poisoning, which put the average and normal amount of hair cadmium at **0.07\* ppm** (Sharma, et al, 1982).
- 2) Analytical Research Laboratories (see above) of Phoenix, AZ disclosed through their president Kenneth Eck that in their hair analyses for their clients the usual range for cadmium levels was from **0.02 – 0.10 ppm** (or an average of **0.06\* ppm**).
- 3) Dr. J. R. Montonte of Trace Minerals International in Cleveland uses an acceptable range for hair cadmium of 0.0 – 0.75 ppm (normal **0.10\* ppm**).
- 4) Dr. Max Sutton from Hill Laboratories in California uses a reference range for cadmium in hair of **0.0 – 0.15 ppm** (or an average of **0.075\* ppm**).
- 5) A 1994 study by Wolfsperger M, et al of 79 healthy adults in Vienna & Rome found an average of **0.038\* ppm** cadmium in non-smoker's hair and **0.075 ppm** in smoker's hair.

- 6) A study in 1999 by Liu XJ in Japan compared hair cadmium of **0.109 ppm** in residents of a cadmium polluted area in 1979 to lower levels of **0.055\* ppm** in 1999 after environmental cleanup by soil replacement.
- 7) A study in 1988 by Wilhelm M, et al in Germany of school children in different areas from hair cadmium levels ranging from 0.0637 to 0.1161 parts per million (his average was **0.0745\* ppm**)
- 8) A 1990 study by Wilhelm M, et al at Germany's Institute of Toxicology measured cadmium hair levels to be normal at 0.060–0.085 ppm. (average **0.072\* ppm**)
- 9) A study in 1991 by Wilhelm M, et al in Germany found young children to have an average of **0.09\* ppm** hair cadmium in their hair.
- 10) A study in 2003 by Benes B, Sladka J, et al in Czech Republic measured cadmium levels in the hair of 3556 children averaging 10 years of age. The medium amount of cadmium was **0.14\* ppm**.
- 11) A study in 2003 in Slovenia by Erzen I, et al measured the median cadmium content in the hair of 245 random young men to be only **0.004\* ppm**.
- 12) A study in 1994 by Wilhelm M, et al in Germany found **0.111\* ppm** cadmium in the hair of a control group of children.
- 13) A 1991 hair cadmium study by Bosque MA, et al in Spain of 226 children compared average results from an industrial area (**0.327 ppm**) with a rural area **0.002\* ppm**. The industrial area values are not included in this average.
- 14) A study of 5846 healthy Japanese showed average cadmium in both men and women to be **0.028\* ppm**. (Yoshikazu, Yoshio, 2005).
- 15) The levels of cadmium in the hair samples were above the reference values of various countries: Italy is 0.03 mg/kg or **0.03 ppm**. (2012, F.I. Abdulrahman)
- 16) The levels of cadmium in the hair samples were above the reference values of various countries: England 0.11 mg/kg or **0.11 ppm**. (2012, F.I. Abdulrahman)
- 17) The levels of cadmium in the hair samples were above the reference values of various countries: Japan 0.05 mg/kg or **0.05 ppm**. (2012, F.I. Abdulrahman)

## CADMIUM: "AVERAGE NORMAL" OF ABOVE 17 STUDIES IS 0.065 ppm

There are 17 studies above which ascertain an "average normal" amount of hair cadmium that is found in "normal," unexposed persons. There are variations in these amounts due to location, environment, nearby industries, and other factors. We calculated an **average of the studies of normal values** for both exposed and unexposed persons, and this approach disallows any criticism that selective studies were used to push the figures up or down. We call this the "AVERAGE NORMAL"-we could "cherry-pick" the lowest value studies like the GBC author did when he chose the two unusually high arsenic studies in Mexico City and Glasgow, but that would not be honest, so an average of many studies is more accurate.

**That average of normal cadmium in human hair comes to 0.065 ppm**, about one sixteenth of one part per million. This is about half of the average normal **arsenic** hair levels. Srila Prabhupada's 1977 cadmium levels as found in hair samples D, A, and Q-2 with 12.4 to 19.9 ppm comes to an average of 15.73 ppm.

***Srila Prabhupada thus had about 190 to 306 times more than the average normal amount of hair cadmium, and that was over a period of many months. The average is 242 times above average normal.***

Clearly, Srila Prabhupada's cadmium poisoning was very, very serious. As shown by the expert opinions, this is a lethal amount over a short period of time.

### **TWO PERSONAL TEST RESULTS NOT INCLUDED IN THE ABOVE AVERAGE:**

The interesting value of these tests is how closely they conformed to the “average normal.”

On August 5, 2005, Nityananda das had his own hair tested by Doctor's Data through his personal physician in the course of a general physical check-up. The cadmium results were exactly in the ballpark for normal: **0.067 ppm**. When he and his wife I had their hair tested a few years earlier, they both had cadmium levels of **0.10 ppm**, although other mineral levels differed significantly.

### **CADMIUM EXPOSED SUBJECT STUDIES:**

- (1). A 1989 study by Bergomi M, Borella P, et al in Italy looked at 142 children in an industrial area, finding average hair cadmium of **0.17 ppm**.
- (2). A 1994 study by Muller M, Anke M in Germany noted that a factory had extensive cadmium emissions since 1960, resulting in the local residents acquiring high hair cadmium levels that averaged **0.389 ppm**.
- (3). A 1995 study by Chlopicka J, et al in Poland examined exposure of children in both industrial and rural areas to cadmium, finding average hair levels of **0.43 ppm**.
- (4). A 1996 study by Kasnia-Kocot J, et al in Poland examined the hair cadmium levels of 69 children living in “the most polluted district” of Chorzow, finding average levels of **0.44 ppm** in girls... (continued)
- (5). and **0.91 ppm** in boys.
- (6). A 1996 study by Zaborowska W, et al in Poland found **0.31 ppm** of hair cadmium in 157 children, including those living in high exposure areas.
- (7). A 1997 study by Zaborowska W, et al in Poland found **0.37 ppm** hair cadmium in another group of exposed school children.
- (8). A 1998 study by Chlopick J, et al in Poland found **0.91 ppm** hair cadmium in children from a highly industrialized and contaminated area.
- (9). A 1991 hair cadmium study by Bosque MA, et al in Spain of 226 children compared average results from an industrial area (**0.327 ppm**) with a rural area (**0.002 ppm**). The rural values are not included in this exposed average calculation.
- (10). A study in 1994 by Wilhelm M, et al in Germany found **0.111 ppm** cadmium in the hair of a control group of children and **0.265 ppm** in another group of children who were known to have had high exposure to cadmium. The fathers of all these children averaged **0.068 ppm** (0.048 to 0.088) cadmium. Children usually have higher Cd levels than adults.
- (11). A study in 1999 by Liu XJ in Japan compared hair cadmium of **0.109 ppm** in residents of a cadmium polluted area in 1979 to lower levels of **0.055 ppm** in 1999 after environmental cleanup by soil replacement.
- (12). A 1991 hair cadmium study by Bosque MA, et al in Spain of 226 children compared average results from an industrial area (**0.327 ppm**) with a rural area (0.002\* ppm). The rural area values are not included in this average.

A website ([www.webhart.net](http://www.webhart.net)) reviews screenings tests for toxins, stating: “Cadmium in hair exceeding **1 part per million is cause for concern.**” (not used in this average)

A 1993 study by Diaz-Barriga F, et al in Mexico found very high levels of hair cadmium in children living in a smelter community of **0.25** up to **3.5 ppm**. (average unknown, not used in the above average)

### **CADMIUM: AVERAGE OF THESE 12 EXPOSED STUDIES IS 0.387 ppm**

It is useful to look at studies of those exposed to cadmium. The above 12 studies of hair cadmium in persons environmentally or occupationally exposed gives this information:

- **“AVERAGE EXPOSED” is about 0.387 ppm, or 6 times that of the AVERAGE NORMAL in studies of unexposed persons.**
- **Srila Prabhupada had an average of 15.73 ppm, or about 40 times more cadmium as those who were exposed to serious or significant environmental or occupational contamination !**

How can anyone suggest Srila Prabhupada’s cadmium was due to “exposure” to factory or environmental contamination? In all the studies we came across, and there were quite a few, we never saw where someone had higher levels of cadmium in their hair than Srila Prabhupada had. Clearly, Srila Prabhupada’s cadmium levels were off the “exposure” chart!

#### **NOTE HOW THESE STUDIES WERE SELECTED**

There are many scientific studies which include what are called “outliers” that result in misleading ranges and averages for cadmium and arsenic hair levels. This phenomenon is elaborated upon at the end of Chapter 48. Please refer to this section for further appreciation of the selection criteria used in selecting the studies for which the average normal values in cadmium were ascertained, namely about 0.065 ppm.

## **EIGHTH EXPERT OPINION: SCIENTIFIC STUDIES SCIENTIFIC LITERATURE ON CADMIUM POISONING**

### **LETHALITY AND MORBIDITY**

Cadmium poisoning is rare and deaths from it are also rare. Although many studies on cadmium have been done since the 1950’s, the precise relationship between dose and health effects is still being refined. The rarity of clinical cases of serious cadmium poisoning (chronic or acute) has largely restricted the scientific record to animal studies and neutral to mild cases of exposure in human society. Nevertheless, the body of scientific literature does provide ample knowledge of cadmium’s toxicity and does shed bright lights on the lethality/ morbidity of Srila Prabhupada’s high cadmium levels. (Our research was not updated much after 2005, but should be.)

There is no doubt the high cadmium concentrations found in Srila Prabhupada’s hair was the primary factor in his sharp deterioration of health and his physical demise. A review of these scientific studies will help to properly understand the effects of Srila Prabhupada’s cadmium levels. Even though there was no single study which specifically describes the effects of up to 20 ppm cadmium in hair, still, the following items we found in the general body of scientific literature illustrates very clearly:

**That an average of 15.73 ppm cadmium over a minimum of at least 9 months, as Srila Prabhupada had endured, is an imminently life-threatening level.**

**(1).** At hazardous waste sites, cadmium has reached **up to** 4 ppm in the soil. *(This gives an idea of how little cadmium exists in the environment.)*

**(2).** OSHA characterizes: *“Cadmium is extremely poisonous and toxic at extremely low levels, and thus tests may miss its detection... even amounts of cadmium dust in occupational situations previously thought safe are now shown to cause kidney disease.”* Cadmium is now known to be much more



poisonous than previously believed, and OSHA issued a much more stringent restriction on cadmium allowances in the workplace.

**(3).** Even in areas of heavy industrial and environmental cadmium pollution, as in southern Poland, residents still only had roughly 1/70<sup>th</sup> the amounts that Srila Prabhupada had in his hair. (How can someone say that Prabhupada's high cadmium is due to environmental or industrial pollution?)

**(4).** A blood cadmium level above 7 millionths gram per liter indicates significant exposure.

**(5).** Cadmium and arsenic are comparable in toxicity, and normal hair values of both are a tiny fraction of one ppm. A hair level of 5 ppm arsenic can sometimes represent a fatal chronic poisoning. (*Cadmium levels of 19.9 ppm are therefore extremely unusual.*)

**(6).** The village of Ergates in Cyprus lies downwind from a cadmium foundry, resulting in 150 to 300% the national average of brain, kidney, pancreas, lung, and leukemia cancers amongst the residents. The Cyprus government took strong action to force the foundry to correct its pollution of the area. Blood cadmium levels were 5 times the norm. (*This would roughly correspond to 5 times the norm in hair cadmium as well. If Srila Prabhupada's hair had 190-306 times the norm, then Srila Prabhupada would have been 40 to 64 times as ill as these unfortunate villagers.*)

**(7).** Kidney dysfunction is associated with 10 to 100 times normal cadmium concentrations in the liver and kidneys. Hair is an excellent indicator of internal cadmium concentrations. (*Srila Prabhupada's hair had up to 306 times normal amounts, and there can be no doubt that Srila Prabhupada's kidney failure was thus due to cadmium poisoning.*)

**(8).** Average cadmium in US food is 0.002-0.040 ppm; in most drinking water it's below 0.001 ppm.

**(9).** The EPA has reduced allowable cadmium in drinking water to a maximum of 0.05 ppmillion (50 ppb), and the FDA restricts cadmium in food coloring.

**(10).** A study in 2001 by T Osawa et al on the relation between cadmium in rice and kidney dysfunction found that the maximum allowable amount of cadmium in rice before adverse health effects became visible was 0.05-0.2 ppm. High cadmium in rice resulted in kidney dysfunction after a short time.

**(11).** Cadmium is largely unused as a malicious poison; yet it is an extremely toxic element, more so than mercury or arsenic. To grasp the meaning of Prabhupada's 19.9 ppm cadmium in hair, we can look at what normal blood and urine cadmium values are: Blood = 0.000003 gram/ liter; urine creatinine = 0.29 ppm.

#### **SUMMARY: LETHALITY AND MORBIDITY**

- 1) Srila Prabhupada's hair was up to 5 times as polluted with cadmium than the worst hazardous waste dump!**
- 2) Even amounts of cadmium dust in occupational situations previously thought safe are now shown to cause kidney disease.**
- 3) Srila Prabhupada had 40-70 times more cadmium than those exposed to serious pollution.**
- 4) Srila Prabhupada's cadmium levels were far above what would cause serious kidney disease and kidney failure within six to twelve month's time.**
- 5) Srila Prabhupada's hair had 16,000 times more cadmium than in most of the world's drinking water.**
- 6) Srila Prabhupada's hair had 400 times more cadmium than the maximum limit allowable in drinking water (by Environmental Protection Agency guidelines).**
- 7) According to one website, the lethal dose of cadmium is 30-40 mg, but the "lethal" level of cadmium poisoning- the variables of body weight, age, health, gender, chronic vs. acute, and other factors will determine how quickly and whether or not someone will die from the poisoning or from the conditions and diseases caused or aggravated by the poisoning. Due to Srila Prabhupada's age and health, a lethal dose of cadmium would be significantly less than the average 30-40 mg required for a normal healthy person.**

- 8) "A few milligrams of cadmium or even less than a milligram of cadmium salt may be enough to produce fatal toxicity." Michael Mullins, *Clinical Chemistry* (2011) pg 1488.

## NINTH EXPERT OPINION: SCIENTIFIC STUDIES SCIENTIFIC LITERATURE ON CADMIUM POISONING

### PATHOLOGY & TOXICITY

The following was obtained from various studies to provide a general overview of cadmium's extreme and widespread destructiveness to the body, giving *some idea of what it does, and how, to its unfortunate victims.*

- (1). Unlike other toxic heavy metals, *ingested cadmium is primarily cumulative*; since body excretion is so slow and limited to a maximum of about 2 micrograms per day regardless of the amount ingested, so ingested amounts greater than bodily excretion rates accumulate in the body until a fatal threshold is reached.
- (2). Cadmium is so poisonous that as little as 10 milligrams of cadmium has caused severe toxic symptoms when ingested. (Rumack BH: Poisindex Information System) A lethal dose is about 0.5 grain or 30 to 40 milligrams cadmium, less than the 300 mg arsenic required, and is about the weight of a small postage stamp. This translates to 0.035 grams or 0.001235 of an ounce.
- (3). Cadmium is a general metabolic poison and competes (replaces) with zinc, disrupting essential biological processes. Ingested cadmium is primarily deposited in the kidneys and liver, with a very limited amount being carried by the blood and excreted through the urine. Since the amount of cadmium deposited in the hair depends on the blood level of cadmium, hair cadmium is like the tip of the iceberg as to the actual total body burden.
- (4). A 2000 study in Belgium by MK Viaene et al stated that "animal studies have shown that cadmium is a potent neurotoxicant."
- (5). The target organ for cadmium toxicity via oral exposure is the kidney. Cadmium causes irreversible renal tubular damage, which progresses into complete Fanconi syndrome with decreased tubular reabsorption of proteins, glucose, amino acids, calcium, phosphorus, and with decreased ability to acidify and concentrate the urine.
- (6). Renal tubular dysfunction and proteinuria (in kidneys) results in overall physical deterioration. Rather than assimilate nutrients, minerals and protein, the kidneys allow them to pass out with the urine, including whatever stores are already in reserve. Leaching due to sufficient cadmium poisoning (protein and sugar is spilled in the urine) denies the victim any sustenance and slow death follows with the appearance of malnutrition, starvation, indigestion, diarrhea, vomiting, stomach pain, etc. *(This was exactly Srila Prabhupada's condition...see medical history)*
- (7). Cadmium poisoning is irreversible; there is no antidote or chelation therapy.
- (8). Cadmium has no known beneficial effect on the human physiology and its cumulative toxic effect simply depends on the amounts ingested.
- (9). Daily excretion of cadmium is about 0.01% of the total body burden; cadmium has a half-life in the body of 17 to 30+ years (it takes that long to excrete half of what is in the body).
- (10). Normal cadmium concentrations in the adult kidney cortex is about 50 ppm and when it reaches 200 ppm a critical threshold is reached wherein the body no longer can manage it and disease then develops, including serious kidney dysfunction and failure. *(Srila Prabhupada's condition, exactly!)*

**(11).** Clinical evidence of the cumulative effects of cadmium may appear after exposure has terminated; the disease then tends to be progressive. Once sufficient cadmium has been chronically ingested, death will follow from disease progression.

**(12).** Long-term chronic cadmium poisoning results in various bone diseases, and prostate and lung cancer are also suspected. The liver and cardio-vascular system are also adversely affected by cadmium.

**(13).** Cadmium intake is distributed widely in the body but accumulates particularly in the liver and kidneys. It binds to protein and non-protein sulfhydryl groups and various macro-molecules such as metallothionein, effecting especially the liver and kidneys.

**(14).** Because the toxic effects of cadmium are a function of a critical concentration being attained in the kidneys, similar effects will occur following long-term poisoning at low levels and short-term poisoning at high levels. Kidney and liver toxicity can occur with toxic cadmium levels accumulated even by sub-chronic exposure. ***(which is why it was not recognized by so many “short-term” doctors)***

**(15).** Breathing difficulties and emphysema develop in more extended exposures, up to 10 years later at low-level chronic levels. ***(in the months before Srila Prabhupada’s departure, some doctors were focused on his lungs, and this is consistent with cadmium poisoning symptoms.)***



**(16).** The IARC regards cadmium as cancer-causing. A study found that cadmium causes chromosomal aberrations in the blood lymphocytes and lesions in the central nervous system, liver, and kidneys, and causes eosinophilia, a blood disorder.

**(17).** Cadmium is one of the most dangerous environmental nephrotoxic agents and causes loss of hearing and eyesight, and alters calcium metabolism, causing kidney stones and pain, decreased density and weakness in bones. Arsenic, lead, mercury, cadmium, and antimony are naturally occurring toxic heavy metals which interfere with the

function of some of the basic chemical processes that sustain life. Present in only trace amounts in the environment.

## CONCLUSION

Srila Prabhupada’s level of an average 15.73 ppm cadmium in his hair, sustained over a minimum of at least 9 months, and likely longer, constitutes a lethal amount, especially for Srila Prabhupada who was elderly and already had some existing health problems with heart, kidneys, and diabetes. This is the clear verdict of the scientific literatures.

Altogether we have quoted nine expert opinions that all confirm the lethality of Srila Prabhupada’s cadmium hair levels as found in three different hair tests and samples by one of the world’s foremost neutron activation analysis laboratories. That others who are separate from the Truth Commission would find additional expert opinions on these levels of cadmium as found in Srila Prabhupada’s authenticated hair samples would be a very good development. The Truth Committee was soliciting further expert opinions in 2017, through attorneys who work with toxicology experts in his legal profession in Florida.