



## UNIVERSITY OF GUAM

### ***FROM THE DESK OF: LUIS SZYFRES, M.D., M.P.H.***

CLINICAL EPIDEMIOLOGY; CLINICAL PATHOLOGY; CLINICAL RESEARCH;  
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- Training: Two Degrees (MD and MPH), Two Post Doctoral Fellowships, Three Accredited Medical Residency Training Programs.
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AND

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AND

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## MEMORANDUM

**To:** Dr. Lee Yudin  
**From:** Luis Szyfres, MD, MPH  
**Re:** Dr. Yudin's letter of warning  
**Date:** January 14, 2007

Dear Dr. Yudin:

We had two meetings about my research on the contamination of Guam with toxic chemicals and its effects in the health of the population. In the first meeting, I informed you that after presenting the issue to the Legislature of Guam, the senators decided to create the Guam Right to Know Commission, to which I was appointed by the speaker of the house. (Annex 1)

In our second, and long meeting, I presented to you all the facts about the environmental contamination with toxic chemicals not only of Guam, but of the Guamanians as well.

About the statement in your letter: "...This memorandum constitutes a written warning with respect to inaccurate and false statements made by you to the Marianas Variety...", I would like to present the following facts:

1. ABOUT THE CONTAMINATION OF GUAM'S ENVIRONMENT, ACCORDING TO THE UNIVERSITY OF GUAM, OF WHICH YOU ARE A DEAN..... "AN IRONY":

The University of Guam, of which you are a Dean, published in response to my interview by the Marianas Variety about Guam's contamination with toxic chemicals, the next day, and in

the same newspaper the following statement: “Also, the U.S. Geological Survey, at our request, tested soil and water samples throughout Guam in 2002 and found no evidence for potentially toxic amounts of metals”...IRONICALLY, A SIGNIFICANT AMOUNT OF THE EVIDENCE OF GUAMS’ CONTAMINATION WITH TOXIC CHEMICALS IS FROM....THE UNIVERSITY OF GUAM, IN WHICH YOU ARE A DEAN!.

a. Guam Environmental Protection Agency. Gov. of Guam. Sediment Contamination Study. 2000

➤ Agana Boat Basin had high levels of COPPER, LEAD, and ZINC. The shallow waters close to shore at the Merizo Pier had HEAVY COPPER, LEAD, TIN, and ZINC concentrations. The highest levels of contaminants were at Apra Harbor, where moderate to heavy enrichment of COPPER, LEAD, MERCURY, TIN, ZINC, PCB’S and PAH’S were identified in sediments collected near Hotel Wharf, Commercial Port and Dry Dock Island. The recently constructed Agat Marina had lowest contaminant levels, showing CHROMIUM contamination (**UNIVERSITY OF GUAM, PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997**).

➤ Inner Apra Harbor may have the highest levels of sediment contamination on Guam, based on limited sampling for the Navy which showed, for example, elevated levels of TIN. *These tin levels rank among the highest concentrations ever recorded in harbor sediments world-wide* (**UNIVERSITY OF GUAM, PROFESSORS: GARY DENTON, H. WOOD, L. CONCEPCION, H. SIEGRIST, V. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997**).

Contaminant Bio-Uptake Study

➤ Increases in ARSENIC, COPPER, LEAD, MERCURY, TIN, and PCB’S recorded in certain biota (the combined flora and fauna of a region), at localized sites, mostly in Apra Harbor. Levels of contaminants in edible parts of consumed organisms were significant or indicative of real health risks for COPPER and ZINC in OYSTERS in Apra Harbor and Agana Boat Basin and ARSENIC in the Apra Harbor OCTOPUS. MERCURY was found in muscle tissue at a level above Canadian and Australian standards in three out of seventy-five FISH sampled; two edible fishes and one lizardfish from Apra Harbor.

Potential Impacts of Sediment Contaminants on Human Health

Physical contact with sediment contaminants found in Guam harbors, at the levels observed (**UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V. EFLIN, D. NARCIS, and G.PANGELINAN, 1997**), would not pose a notable health risk. Ingestion of measurable amounts of the contaminated sediments would not reasonably be expected. *However, sources of health risk may arise through uptake of contaminated sediments or their pollutants by harbor organisms and passage through food chains to human consumers. Bio-accumulation of heavy metals and PCB’s from sediments potentially can make marine organisms unacceptable for human consumption.*

➤ PCB’s are linked to increased cancer risks, disruption of women’s reproductive function and to neurobehavioral and developmental problems in children born to women exposed to PCB’s and are also associated with other systemic effects (e.g., liver disease and diabetes, compromised immune function, and thyroid effects). A comparative analysis of PCB levels in organisms in Guam harbors with levels in related species elsewhere (**UNIVERSITY OF GUAM, PROFESSORS: GARY DENTON, L.P. CONCEPCION, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999**) indicates mild enrichment extending to moderate levels in certain species at localized sites in Apra Harbor.

Administration’s food standard.

➤ The levels of COPPER and ZINC in filter feeding OYSTERS from Agana Boat Basin and parts of Apra Harbor exceed standards applied in Australia for fishery products (**UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCION, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999**).

➤ The OCTOPUS from Apra Harbor had arsenic concentrations comparable to those found in related species in other countries, but could cause deleterious health effects to a person

consuming in excess of 60 grams of this per day (**UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCION, H. WOOD, V.S. EFLIN, AND G. PANGELINAN, 1999**).

#### Potential Impacts of Sediment Contaminants on Natural Resources

➤ COPPER and TIN are undoubtedly toxic to marine invertebrates. **UNIVERSITY OF GUAM, PROFESSOR R. HESLINGA 1976** research showed COPPER impacts on larvae of a common species of *SEA URCHIN* from Guam's reefs. Copper can be acutely or chronically toxic to aquatic organisms through exposure in water or in sediments.

#### Dredging Methodology and Water Quality

➤ Some heavy metals found in Guam, such as MERCURY, LEAD, and CADMIUM, are excreted very inefficiently by the human body and even if exposure to these metals is extremely minute, their levels may still exceed the quantity that the body can excrete and, consequently, toxic levels may be achieved after several years of chronic exposure. In addition to lead poisoning, effects of these metals include *chronic fatigue syndrome, fibromyalgia and multiple chemical sensitivity syndrome*.

➤ MERCURY has been recognized as the most significant metal contaminant derived from *FISH* consumption. Even minute quantities of mercury are extremely toxic. When mercury from contaminated *SEAFOOD* accumulates, the *immune system becomes weakened, the detoxification capacity of the liver and kidneys is diminished, hormones become poorly regulated, and the NERVOUS SYSTEM system becomes impaired. Allergies, chemical sensitivities, gastrointestinal disturbances, depression, anxiety, headaches, muscle and joint pains, chronic fatigue, frequent infections, abnormal gastrointestinal flora and hormonal disturbances are just a few of the many symptoms which have been linked with chronic mercury toxicity.*

➤ Although PCB'S bioaccumulate and concentrate through food chains leading to humans being exposed when they consume contaminated *FISH*. *Cancer* risks can arise from PCB intake and maternal consumption of PCB contaminated fish is associated with adverse health of children. Certain polycyclic aromatic hydrocarbons (PAH'S) are potentially *carcinogenic*. They are also released from sediments through dredging activities.

#### Potential Impacts of Dredging Contaminated Sediment on Natural Resources

➤ PCB'S and PAH'S also may be released to food chains, and that PCB'S of sufficient doses can produce an *immunosuppressive effect and induce hepatic microsomal enzyme systems*. They have the ability to bioactivate relatively nontoxic compounds in cells to become *cytotoxic or genotoxic metabolites*. Some PAH'S are *carcinogenic* to animals (**UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997**).

➤ Based on Guam studies by the **UNIVERSITY OF GUAM, PROFESSORS S. AMESBURY, C. BIRKELAND, M. CHERMIN, R. CLAYSHULTE, F. CUSHING, J. DAY, R. DICKENSON, J. EADS, L. ELDRIDGE, D. GROSENBAUGH-HAMEL, S. HEDLUND, R. KOCH, J. MARSH, C. NEUBAUER, S. NEUDECKER, R. RANDALL, R. TSUDA. 1977**, accumulation of finer sized sediment fractions has a greater inhibiting effect on the recruitment and growth of corals than does the larger sized fractions. It is not known whether the severity of impacts from pollutants in Guam harbor sediments would be distributed differentially with the size of sediment fractions. ➤ But sediment particle sizes in Guam harbors tend to be predominantly sand sized (greater than 0.063mm diameter) with less than 10% being smaller silt particles (**UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, H.R. WOOD, L.P. CONCEPCION, H.G. SIEGRIST, V.S. EFLIN, D.K. NARCIS, and G.T. PANGELINAN, 1997**).

#### Sources of Pollutants in Sediments

➤ *Garbage dumps by the U.S. Military on Guam* included the Navy Orote Landfill, which from 1944 to 1969 deposited many tons of discarded metals, as well as industrial and construction wastes (Navy Energy and Environmental Support Activity, 1983). Contaminants in this waste include PCB'S, PAH'S, ORGANOCHEMICAL PESTICIDES, DIOXANS, FURANS, and METALS.

➤ *The Navy supplied nuclear submarines and other surface ships at Apra Harbor, operated dry cleaning and printing plants, treated building materials with preservatives, stored and operated floating power plants, transferred ammunition and possibly nuclear weapons, etc.*

➤ A study by the **UNIVERSITY OF GUAM PROFESSORS: GARY DENTON, L.P. CONCEPCION, H. WOOD, V.S. EFLIN, and G. PANGELINAN, 1999**, indicates that boat

maintenance appears to be the main contributor to the boat-source pollutants found in the Guam harbor.

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- ?Denton, G.R.W., L.P. Concepcion, H.R. Wood, V.S. Eflin and G. Pangelinan. 1999. Heavy metals, PCB's and PAH's in marine organisms from four harbor locations on Guam, a pilot study. WERI Tech. Rept. No. 87. University of Guam. 154 pp.
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- ?Marsh, J.& G.Gordon.1974. Marine Environmental Effects of Dredging & Power Plant Construction in Piti Bay and Piti Channel. Guam. Technical Report #8. University of Guam Marine Lab. 56 pp.
- ?Randall, R.H., and L.G. Eldredge. 1974(a). A Marine Survey, Part I, and a Current Survey, Part II, for the Proposed Guam Marine Company Marina. University of Guam, Environmental Survey Report # 13.
- ?Randall, R.H., and L.G. Eldredge. 1974(b). A Marine Survey for the Sleepy Lagoon Marina. University of Guam, Environmental Survey Report No. 14.

- b. Another irony...there are numerous studies on the contamination of Guam with toxic chemicals conducted by US. Federal Agencies: the U.S. Environmental Protection Agency (EPA), the U.S. Agency for Toxic Substances & Diseases Registry (ATSDR), the U.S. Department of Defense (DOD), the U.S. Army Corps of Engineers, the U.S. Department of the Navy, etc. All the specialized federal agencies concur in that the environment of Guam is contaminated... except the University of Guam, that conducted numerous studies proving that the environment of Guam is contaminated?

The university of Guam, based in the geological survey (the US Geological Survey was established on 1879, and placed it in the Department of the Interior, with the objective of conducting the classification of the public lands. Mapping of the public lands was begun under the direction of the Surveyor-General, but no special provision was made for classification of the public lands, and it thus became the responsibility of the surveyor), is over-ruling several "specialized" federal agencies, including:

#### THE US AGENCY FOR TOXIC SUBSTANCES AND DISEASE REGISTRY (ATSDR)

The US. Agency for Toxic Substances & Diseases Registry (ATSDR) is a federal public health agency of the U.S. Department of Health and Human Services, based in Atlanta, Georgia. ATSDR was established by the United States Congress with the mandate to perform specific functions concerning adverse human health effects and diminished quality of life associated with exposure to hazardous substances.

ATSDR is responsible for assessment of waste sites and providing health information concerning hazardous substances, response to emergency release situations, and education and training concerning hazardous substances (ATSDR Mission Statement, November 7, 2001).

#### THE US ENVIRONMENTAL PROTECTION AGENCY (EPA)

Born in the wake of elevated concern about environmental pollution, the U.S. Environmental Protection Agency was established in 1970, with the mandate to consolidate in one agency a variety of federal research, monitoring, standard-

setting and enforcement activities to ensure environmental protection. EPA's mission is to protect human health and to safeguard the natural environment—air, water, and land—upon which life depends.

AND,

AS DESCRIBED ABOVE, THE UNIVERSITY OF GUAM IS ALSO OVERRULING.... ITSELF?.

2. ABOUT THE PRESENCE OF TOXIC CHEMICALS IN THE GUAMANIAN, AND ITS POSSIBLE ASSOCIATION WITH MULTIPLE DISEASES OF MANY ORGANS AND SYSTEMS (INCLUDING LYTICO-BODIG):
  - a. We had two meetings with about the contamination of Guam's Environment with Toxic Chemicals, in which we discussed in detail the type of toxic substances, locations, concentrations, dispersion through evaporation/rain/wind/infiltration, and their health effects in the population. In relation to the presence of the toxic chemicals, we spoke about a very good example... Lytico-Bodig, and many years of studies of the brains of Chamorro, proving the presence of toxic metals in the Brain...that the only way that the metals can enter the Brain is through the Blood... that the only way that the metals can enter the Blood, by Eating Food, Drinking Water, or Breathing Air, contaminated with toxic metals. By the way, that is in the same newspaper (Marianas Variety).
  - b. About Lytico-Bodig, there is no such a thing as "cause" in observational epidemiology, only "associations". We spoke in detail about this issue with Ms. Cathleen Moore-Linn, she explained to me that the M. Variety does not have personnel specialized in health. I requested the newspaper to publish a clarification, and they did.
  - c. As in your Memo you only talk about this issue in the M. Variety, you obviously read about it. I am including the clarification to refresh your memory:

MARIANAS VARIETY

"Unknown to the residents of Guam, the food they eat, the water they drink, and the air they breathe are contaminated with toxic chemicals," Szyfres said. "The toxic chemicals enter the person's bloodstream and may affect any organ or system in the body."

"The fact that the only way that toxic heavy metals can get to the brain is through the blood, and that they can only get to the blood through the food, water, or air contaminated with heavy metals, proves that the toxic chemicals are not only in the environment of Guam, but in Guamanians as well," he added.

TO MARIANAS VARIETY (WITH COPY TO MS. CATHLEEN MOORE-LINN)

From: Luis Szyfres, MD, MPH

Date: 12/08/06 14:36:02

To: NEWS=Mar-Vic Cagurangan

Cc: cmoore@guam.uog.edu

Subject:=FROM:DR.SZYFRES=TO:MARIANAS.VARIETY/MS.CAGURANGAN @=RE: CLARIFICATION

Dear MarVic:

I'm very happy to see that you included in today's edition my clarification about Environmental Contamination VS Lytico Bodig. "The fact that the only way that toxic heavy metals can get to the brain is through the blood, and that they can only get to the blood through the food, water, or air contaminated with heavy metals, proves that the toxic chemicals are not only in the environment of Guam, but in Guamanians as well," he added, clarifies my initial commentary: =1=That the high concentrations of toxic

chemicals reported by the federal government are not only in the water, soil, etc, but in people as well.

=2=That the toxic chemicals in blood represent serious risk factors associated with diseases of many organs and systems, and not just the neurological system.

Now, we can try our best to inform/help the community in both issues, without creating confusion.

All the best,

*Luis*

d. After I received your Memo, I spent a long time trying to understand what you are referring to. We had two long meetings about my research on the contamination of Guam with Toxic Chemicals, but in your Memo, you are saying....

⇒ “You must ensure that any research reports distributed publicly or draft manuscripts submitted for external review or accepted for publication **with regard to your research on Lytico-Bodig....**” My research in Lytico-Bodig? In your opinion, I am with all the senators in the Commission of the Legislature of Guam to conduct research in Lytico-Bodig? I suggest you call the speaker of the house, the senators, and the now Lieutenant Governor of Guam. They will inform you that the contamination of Guam with Toxic Chemicals and Lytico-Bodig are not the same thing. The only connection is that the metals in the Brain come from the environmental contamination.

⇒ Another factor of major interest in the epidemiological characterization of the magnitude, frequency, distribution, trends, patterns, and associated factors of the problem of the presence of toxic chemicals in the food, water, and air on Guam, is the determination of the number of people in our community that have toxic chemicals in their organism. Has during the research on Lytico-Bodig, UOG with the other universities collected blood samples from Guamanians during Forty Years, the specimens are invaluable. Has during the study of the Chamorro brains the researchers found Toxic Metals, it would call my attention if they did not test the specimens for the chemicals, to evaluate the correlation between the presence and concentrations of the metals ions in blood, and the occurrence and characteristics of both, ALS and Parkinson Disease. If for unknown reasons, the university did not test the blood samples, they are already collected and stored; we only need to test them.

⇒ In relation to the reporting of the blood results tests, the University of Guam was reporting very few results, which has been improving recently. However, the law mandates the full report of all results ASAP.

Code of Federal Regulations. TITLE 45

DEPARTMENT OF HEALTH AND HUMAN SERVICES

PUBLIC WELFARE. PART 46. PROTECTION OF HUMAN SUBJECTS

Revised June 23, 2005; Effective June 23, 2005

**§46.101 To what does this policy apply?** Research involving the collection or study of existing data, documents, records, pathological specimens, or diagnostic specimens.

Intervention includes both physical procedures by which data are gathered (for example, venipuncture) and manipulations of the subject or the subject's environment that are performed for research purposes.

**§46.111 Criteria for IRB approval of research.** Informed consent will be sought from each prospective subject or the subject's legally authorized representative, in accordance with, and to the extent required by §46.116. Informed consent will be appropriately documented, in accordance with, and to the extent required by §46.117.

**§46.113 Suspension or termination of IRB approval of research.** An IRB shall have authority to suspend or terminate approval of research that is not being conducted in accordance with the IRB's requirements or that has been associated with unexpected serious harm to subjects. Any suspension or termination of approval shall include a statement of the reasons for the IRB's action and shall be reported promptly to the investigator, appropriate institutional officials, and the department or agency head. (Approved by the Office of Management and Budget under control number 0990-0260.)

**§46.122 Use of Federal funds.** Federal funds administered by a department or agency may not be expended for research involving human subjects unless the requirements of this policy have been satisfied.

**§46.123 Early termination of research support: Evaluation of applications and proposals.** The department or agency head may require that department or agency support for any project be terminated or suspended in the manner prescribed in applicable program requirements, when the department or agency head finds an institution has materially failed to comply with the terms of this policy.

- ⇒ “This written warning will be placed in your Official Personnel File. In addition to this warning, I am adding a requirement to your CFES plan for this academic year. This requirement is that you prepare a comprehensive review of the available scientific literature on neurodegenerative diseases in Guam and present it for peer review and possible publication”...? .....Once again, I am preparing a comprehensive review on the contamination of Guam’s environment with Toxic Chemicals and their effects in the Health of the Guamanians, not on Lytico-Bodig.
- ⇒ By the way, as you know very well, I am a Physician with Three Medical Specialties, a Master Degree, and Two Postdoctoral Fellowships, none of them in Neurology.

3. ASSOCIATION BETWEEN THE ENVIRONMENTAL CONTAMINATION OF GUAM WITH TOXIC CHEMICALS, AND LYTICO-BODIG.

Talking about ironies... the same Federal Agency that is funding all the studies on Neurodegenerative Diseases, the National Institute of Aging (NIA), is precisely the one that supports the association between environmental contamination and Lytico-Bodig, while the... NIA-funded University of Guam, not only does not bother to evaluate that possibility, but states publicly that there is no environmental contamination. Let me give you some examples, even at the risk that, like you state in your Memo “.... There may be a basis to consider more stringent disciplinary measures”

- ❑ NATIONAL INSTITUTE OF AGING (NIA) Intramural Research Program, and Department of Neuroscience, the JOHNS HOPKINS UNIVERSITY, School of Medicine, Baltimore, Maryland.

Metal-catalyzed disruption of membrane protein and lipid signaling in the pathogenesis of neurodegenerative disorders. Laboratory of Neurosciences, Mattson MP. Ann N Y Acad Sci. 2004 Mar;1012:37-50.

Membrane lipid peroxidation and oxidative modification of various membrane and associated proteins (e.g., receptors, ion transporters and channels, and signal transduction and cytoskeletal proteins) occur in a range of neurodegenerative disorders. This membrane-associated oxidative stress (MAOS) **is promoted by redox-active metals, most notably IRON and COPPER.** The mechanisms whereby different genetic and environmental factors initiate MAOS in specific neurological disorders are being elucidated. In Alzheimer's disease (AD), the amyloid beta-peptide generates reactive oxygen species and induces MAOS, resulting in disruption of cellular calcium homeostasis. **In Parkinson's disease (PD),** mitochondrial toxins and perturbed ubiquitin-dependent proteolysis may impair ATP production and increase oxyradical production and MAOS. Increased MAOS occurs in **Amyotrophic lateral sclerosis (ALS)** as the result of genetic abnormalities (e.g., **COPPER/ZINC-superoxide dismutase mutations**) or **exposure to environmental toxins.** **Levels of iron are increased in vulnerable neuronal populations in AD and PD, and dietary and pharmacological manipulations of iron and copper modify the course of the disease in mouse models of AD and PD in ways that suggest a role for these metals in disease pathogenesis.** An increasing number of pharmacological and dietary interventions are being identified that can suppress MAOS and neuronal damage and improve functional outcome in animal models of AD, PD, HD, and ALS.

Novel preventative and therapeutic approaches for neurodegenerative disorders are emerging from basic research on the molecular **and cellular actions of metals** and MAOS in neural cells

PMID: 15105254 [PubMed - indexed for MEDLINE]

- ❑ **Elevated levels of ferromagnetic metals in foodchains supporting the Guam cluster of neurodegeneration: do metal nucleated crystal contaminants [corrected] evoke magnetic fields that initiate the progressive pathogenesis of neurodegeneration.**

Purdey M. High Barn Farm, Elworthy, Taunton, Somerset TA4 3PX, UK.

*Elevated levels of aluminum (Al), strontium (Sr), barium (Ba), iron (Fe), manganese (Mn) cations - combined with deficiencies of magnesium (Mg)/calcium (Ca) - have been observed in the foodchains that traditionally support the Chamorro populations affected by high incidence clusters of Alzheimer (AD), Parkinson-like (PD), motor neurone diseases and multiple sclerosis on the island of Guam. Soils drawn from the cluster region demonstrated an excessive fivefold increase in 'magnetic susceptibility' readings in relation to soils from disease free adjoining regions.*

Once gut/blood brain barrier permeability is impaired, the increased uptake of Al, Fe, Sr, Ba, or Mn into the Mg/Ca depleted brain leads to rogue metal substitutions at the Mg/Ca vacated binding domains on various enzyme/proteoglycan groups, causing a broad ranging disruption in Mg/Ca dependent systems - such as the glutamine synthetase which prevents the accumulation of neurotoxic glutamate. The rogue metals chelate sulphate, disrupting sulphated-proteoglycan mediated inhibition of crystal proliferation, as well as its regulation of the Fibroblast growth factor receptor complex, which disturbs the molecular conformation of those receptors and their regulation of transphosphorylation between intracellular kinase domains; ultimately collapsing proteoglycan mediated cell-cell signalling pathways which maintain the growth and structural integrity of the neuronal networks. The depression of Mg/Ca dependent systems in conjunction with the



*progressive ferrimagnetisation of the CNS due to an overload of rogue ferroelectric/ferromagnetic metal contaminants, enables 'seeding' of metal-protein crystalline arrays that can proliferate in the proteoglycan depleted brain.* The resulting magnetic field emissions initiate a free radical mediated progressive pathogenesis of neurodegeneration.

*The co-clustering of these various types of disease in select geographical pockets suggests that all of these conditions share a common early life exposure to ferromagnetic metal nucleating agents in their multifactorial aetiology.*

PMID: 15488650 [PubMed - indexed for MEDLINE]

❑ **Concentrations of Cd, Co, Cu, Fe, Mn, Rb, V, and Zn in formalin-fixed brain tissue in amyotrophic lateral sclerosis and Parkinsonism-dementia complex of Guam determined by High-resolution ICP-MS.**

Gellein K ; Garruto RM ; Syversen T ; Sjbakk TE ; Flaten TP. Norw.University of Science and Technology. Biol Trace Elem Res. 2003; 96(1-3):39-60 (ISSN: 0163-4984).

Amyotrophic lateral sclerosis (**ALS**) and parkinsonism-dementia complex (**PDC**) are neurodegenerative disorders that occurred with extremely high frequency among the native population on Guam, especially in the 1950s and 1960s, but have substantially declined over the last half-century.

*The most plausible hypothesis centers on imbalances in essential and toxic metals.* We have determined the concentrations of Cd, Co, Cu, Fe, Mn, Rb, V, and Zn in formalin-fixed brain tissue collected during the period 1979-1983 from eight Guamanian patients with ALS, four with PDC, and five control subjects using high-resolution inductively coupled plasma-mass spectrometry. The concentrations of Cd are markedly and significantly elevated both in gray and white matter in ALS, but not in PDC patients. The concentrations of Zn are elevated for both patient groups, in both gray and white matter, but only the difference in gray matter for PDC is significant. For the other metals, no significant differences are found.

PreMedline Identifier: 14716085

❑ **Neurofibrillary tangles in the primary motor cortex in Guamanian amyotrophic lateral sclerosis/parkinsonism-dementia complex.**

**Mount Sinai School of Medicine, New York**

Neurobiology of Aging Laboratories .

Hof PR ; Perl DP. Neurosci Lett. 2002; 328(3):294-8 (ISSN: 0304-3940)

The amyotrophic lateral sclerosis/parkinsonism-dementia complex is a chronic neurodegenerative disorder with high prevalence among the native Chamorro population of Guam. The cortical pathology of the disease is characterized by the widespread occurrence of cortical neurofibrillary tangles that exhibit a specific laminar and regional distribution different from that seen in Alzheimer's disease (AD).

**We report here that the primary motor cortex in Guamanian cases contains high numbers of neurofibrillary tangles, contrasting sharply with the situation in AD and in non-Chamorro cases of amyotrophic lateral sclerosis.**

Furthermore, the cases with predominant parkinsonism-dementia are more severely affected than amyotrophic lateral sclerosis cases.

**These data suggest that the regional and cellular pathology of Guamanian cases differs radically from that commonly observed in neurodegenerative diseases outside Guam and point to the existence of subgroups in the**

**spectrum of clinical manifestations seen in Guamanian patients.**

PreMedline Identifier: 12147329

**□ Disappearance of ALS from Guam: implications for exogenous causes.  
Chen KM. Department of Neurology, *Guam Memorial Hospital***

1995 Dec;35(12):1549-53.

The author reports the disappearance of amyotrophic lateral sclerosis (ALS) from Guam over past 30 years, which coincided with rapid changes in the ecology, socioeconomy, and westernization of the life style. This slow but steady decline is believed to be the consequences of radical changes from food collection to wage-based life style and dietary improvement in recent years and elimination of exogenous factors. Those risk factor(s) are the environmental metals which must have triggered the accelerated oxidative stresses in the motor neurons.

*Changing Epidemiology:*

- a. The annual incidence of 70/100,000 in 1960s down to 7/100,000 in 1990s, and remained unchanged for past 15 years.
- b. No increase in the incidence of ALS among non-Chamorros transients of Guam and Marianas during W.W.II.
- c. Long-term resident non-Chamorro and half-Chamorros on Guam are also affected.
- d. Chamorro migrants to U.S. Mainland are affected after long absence from Guam.
- e. Incubation period for both ways is estimated to be 18 approximately 20 years.

*Socioeconomic Changes:*

- a) Shift in population demography; Efflux of Chamorros and Influx of aliens; Chamorros less than 50% by 1990.
- b) Tourists passed 1 million in 1994.
- c) Westernization: After W.W.II, almost free access to Military Commissary for imported food and appliances.
- d) Life style: from food collection to wage-based society.

[Indexed for MEDLINE]

4. ABOUT CENSORSHIP AND INNACURATE FALSE STATEMENTS

Your Memo states “that Allen refused to renew his (your) contract with the UOG Cancer Research Center, and asked him (you) to sop my research...” .... another irony, according to the Reappointment Procedures.... “The appropriate Administrator (in my case is you) will remind Faculty members of the need to apply for reappointment”. “Faculty reappointment evaluations will be completed in the fourth consecutive semester of service”.

I was hired on a three-year tenure-track contractual appointment on June 2005. I had to apply before November 2007. It was not President Allen that told that he was not going to renew the contract, it was you that told me not to apply because, even if all the members of the Reappointment Committee voted for my reappointment, Drs. Allen and Whippy were going to veto the faculty member’s decision..... “IF THERE IS ANY DOUBT ABOUT THIS STATEMENT, PLEASE EXPLAIN WHY YOU THERE IS NO REAPPOINTMENT APPLICATION OR REAPPOINTMENT COMMITTEE ....”UPON DIRECTION FROM THE APPROPRIATE ADMINISTRATOR (YOU), THE FACULTY MEMBER’S UNIT WILL ELECT ONE MEMBER FROM THE UNIT, ETC”.....AND.... IT WAS NOT DR. ALLEN WHO TOLD ME THAT HE WAS ANGRY THAT I INFORMED THE COMMUNITY (THROUGH THE M. VARIETY) ABOUT THE DISEASES ASSOCIATED WITH THE EXPOSURE TO TOXIC CHEMICALS, AND WANTED ME OUT OF UOG AT ONCE BY BUYING BACK THE REMAINDER OF MY THREE-YEAR CONTRACT...IT WAS YOU, BUT THIS TIME IT IS NOT HEARSAY....*IT IS RECORDED.*

*Dr. Szyfres*

CC: members of the Guam Legislature Right To Know Commission: Ex-Senator-Lieutenant Governor/ Mike Cruz; Speaker of the House/Senator Mark Forbes, Senator Won Pat, Senator Antonio Umpingco, Senator Frank Blas, Jr., Senator Tina Muna-Barnes.

CC: Attorney General, Alicia Limtiaco