

**STATEMENT BEFORE
THE PRESIDENTIAL SPECIAL OVERSIGHT BOARD
FOR DEPARTMENT OF DEFENSE INVESTIGATIONS
OF GULF WAR CHEMICAL & BIOLOGICAL
INCIDENTS**

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THE HONORABLE WARREN B. RUDMAN, CHAIRMAN

November 20, 1998

Senator Rudman and Members of the Board:

I am very honored to be here this morning, and thank General Sandier of the Reserve Officers' Association of the United States for inviting me to participate in this hearing on the Gulf War chemical & biological incidents.

I was in active service in the US Air Force for 20 years, retiring in October 1980 as a Chief Flight Surgeon and Senior Pilot. I am Board-Certified in Occupational Medicine and Aerospace Medicine. In addition to my medical training, I received a Master of Public Health Degree from Johns Hopkins University.

After leaving the military, I started an occupational medicine practice in Sacramento, California in 1981, and have been building the practice since that time.

The challenge for the occupational physician is to provide relief to the injured worker, to rehabilitate him and return him to work. Since 1982, I have been using a detoxification program to treat patients who have been exposed to fat-soluble chemicals, either at work or from environmental sources.

This program, developed by L. Ron Hubbard in 1978, has over the last 15 years been evaluated and used by a growing number of professionals throughout the world who have examined its use in relieving the after effects of chemical exposure and found it to be very effective.

To my knowledge, there is no other peer-reviewed method for reducing the body burden of fat-soluble toxic chemicals. Papers documenting the efficacy of the Hubbard program have been published by such organizations as the World Health Organization, the Royal Swedish Academy of Science, the Society for Occupational and Environmental Health and others. I have included in the packet before you precis of several papers concerning the detox program, a short description of the program, and a reference list.

The Hubbard detoxification program has long been upheld as compensable under state and national workman's compensation laws. Over the past 16-1/2 years, I have used it to treat

approximately 2,500 patients with varying degrees of illness from exposure to toxic chemicals. The program has enabled me to fully rehabilitate many workers with serious exposures, returning them to full employment with little or no residual disability.

Over the years since the Gulf War, I have followed the articles in the medical literature and the lay press regarding what has been called the “Gulf War Syndrome.” I have also read many of the government sponsored reports regarding the Gulf War illnesses, and noted a striking similarity between the symptoms voiced by the veterans and the symptoms of patients exposed to toxic chemicals.

These symptoms include: marked fatigue; difficulty with concentration; short-term memory loss; emotional lability, or flying off the handle with minimum provocation; skin rashes; vague muscle aches and pain; gastrointestinal symptoms, including constipation, diarrhea; and particularly, a sensitivity to chemicals at very low levels.

Since the symptoms so closely resembled those that I had treated successfully in thousands of cases, I decided to accept two Gulf War veterans for detoxification treatment.

Case Number One was a forty-nine-year-old Marine Lieutenant Colonel who served in the Gulf War theater, from August 1990- March 1991, as a Marine offload coordinator for the Marine expeditionary force. He was in excellent health when he deployed to Saudi Arabia. He did use pyridostigmine bromide tablets and also used clothing, which was impregnated with DEEP permethryn, as well as being given anthrax vaccine. He complained of multiple joint, muscle and tendon pains, particularly at the shoulders, foot, hands and knees, headaches, fatigue, memory problems, irritability, lack of energy and sleep problems. He underwent treatment in my office using the Hubbard Detoxification Program in June 1996, completing in sixteen days. Upon completion, he felt that the above symptoms were at least “ninety-five percent improved.”

Case Number Two is a twenty-year-old Marine Reserve Lance Corporal from Connecticut. He was stationed near Kafghee, Saudi Arabia and in Kuwait City and was therefore in the middle of the oil fire area in Kuwait. He also took pyridostigmine bromide tablets twice a day and had clothing impregnated with DEEP permethryn, as well as being exposed to some lindane for delousing of prisoners. He also complained of skin rashes, knee and shoulder pain, as well as cough producing black sputum, multiple muscle aches, slurred speech, dizziness, nervousness and lack of enthusiasm. He underwent a detoxification program in my office, in March and April of 1996, for a total of twenty-seven days on the program, and felt at least “eighty to ninety percent improved” compared to pretreatment levels of symptomatology.

This detoxification program is not a cure for cancer. It cannot help patients who suffered structural or anatomic damage to their peripheral or central nervous systems. However, to the extent that symptoms can be ameliorated by reducing the body burden of these fat-

soluble toxic chemicals, the program can and does help exposed individuals.

I am not claiming to have discovered either the cause or the cure for the “Gulf War Syndrome.” But I do know that veterans who have been exposed to combinations of chemicals and chemical byproducts—including pesticides, vaccinations, oil fires, and possibly chemical warfare agents—have suffered greatly. They deserve the best in evaluation and treatment that this great country of ours can offer.

While many millions have been spent to study the problems that soldiers who served in the Gulf are experiencing, little has been done to provide relief. Based on nearly two decades of clinical experience, I believe that this detoxification program may be a means to provide such relief. I realize that I have treated only a handful of cases, but the results have been extremely encouraging.

Therefore, I would be willing to work with any appropriate agency to establish a pilot project which would evaluate and treat a larger group. I have already received encouragement for such a pilot project from professionals in medicine and toxicology who would be willing to serve as advisors. I think this is a concrete and practical idea, and I would encourage the Board to strongly consider it.

Thank you for your time.

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Background: Summaries of some published papers regarding the Hubbard detoxification program

Evaluation of a Detoxification Regimen for Fat Stored Xenobiotics.

Medical Hypothesis, Vol. 9, 1982.

Summary: One hundred and three individuals undergoing detoxification with the Hubbard procedure volunteered to undergo additional physical and psychological tests concomitant with the program. Participants had been exposed to recreational (abused) and medical drugs, patent medicines, occupational and environmental chemicals. Patients with high blood pressure had a mean reduction of 30.8 mm systolic, 23.3 mm diastolic; cholesterol level mean reduction was 19.5 mg/100 ml, while triglycerides did not change. Completion of the detoxification program also resulted in improvements in psychological test scores, with a mean increase in Wechsler Adult Intelligence Scale IQ of 6.7 points. Scores on Minnesota Multiphasic Personality Inventory profiles decreased on Scales (4-7) where high scores are associated with amoral and asocial personalities, psychopathic behavior and paranoia. Medical complications resulting from detoxification were rare, occurring in less than three percent of the subjects.

Body Burden Reductions of PCBs, PBBs and Chlorinated Pesticide Residues in Human Subjects, *Ambio, Vol. 13, No. 5-6, 1984.*

Summary: Prior to detoxification, adipose tissue concentrations were determined for seven individuals accidentally exposed to PBB. The chemicals targeted for analysis included the major congeners of PBB, PCBs and the residues of common chlorinated insecticides. Of the 16 organohalides examined, 13 were present in lower concentrations following detoxification. Seven of the 13 reductions were statistically significant; reductions ranged from 3.5 to 47.2 percent, with a mean reduction among the 16 chemicals of 21.3 percent (s.d. 17.1 percent). To determine whether reductions reflected movement to other body compartments or actual burden reduction, a post-treatment follow-up sample was taken four months later. Follow-up analysis showed a reduction in all 16 chemicals averaging 42.4 percent (s.d. 17.1 percent) and ranging from 10.1 to 65.9 percent. Ten of the 16 reductions were statistically significant.

Diagnosis and Treatment of Patients Presenting Subclinical Signs and Symptoms of Exposure to Chemicals Which Accumulate in Human Tissue. Proceedings of the National Conference on Hazardous Wastes and Environmental Emergencies, Cincinnati, Ohio, 1985.

Summary: A discussion of some of the problems in attempting to diagnose and treat low-level body burdens of toxic chemicals. A review of 120 patients who were prescribed detoxification treatment as developed by Hubbard to eliminate fat-stored compounds showed improvement in 14 of 15 symptoms associated with several types of chemical exposures.

Reduction of Hexachlorobenzene and Polychlorinated Biphenyl Human Body Burdens, World Health Organization, International Agency for Research on Cancer, Scientific Publications Series, Vol. 77, 1986.

Summary: Electrical workers paired by age, sex and potential for polychlorinated biphenyl exposure were divided into treatment and control groups. Adipose-tissue concentrations of hexachlorobenzene (HCB), four other pesticides and 10 polychlorinated biphenyl congeners were determined pre- and post- treatment, and three months post-treatment. At post treatment, all 16 chemicals were found at lower concentrations in the adipose tissues of the treatment group, while 11 were found in higher concentrations in the control group. Adjusted for re-exposure as represented in the control group, HCB concentrations were reduced by 30% at post-treatment and 28% three months post-treatment. Mean reduction of polychlorinated biphenyl congeners was 61% at post-treatment and 14% three months post-treatment. These reductions are statistically significant ($f < 0.001$). Enhanced excretion appeared to keep pace with mobilization, as blood-serum levels in the treatment group did not increase during treatment.

Excretion of a Lipophilic Toxicant Through the Sebaceous Glands: A Case Report, Journal of Toxicology—Cutaneous and Ocular Toxicology, Vol. 6, No. 1, 1987.

Summary: A 23-year-old woman worked at a manufacturing facility, hosing the soot and ash accumulated in the exhaust stack and on the filter pads of an oil-fired generator. She performed this task without protective gear. After six months, she reported feeling ill to the plant nurse. One month later, she was removed from the job, and she remained unable to work for 11 1/2 months because of symptoms relating to toxic chemical exposure. The toxicants were amenable to removal through the sebaceous glands and possibly the gastrointestinal tract by the Hubbard detoxification technique. This was accompanied by remission of her subjective complaints and she was authorized to return to work.

Improvement in Perception of Transcutaneous Nerve Stimulation Following Detoxification in Firefighters Exposed to PCBs, PCDDs and PCDFs, Clinical Ecology, Vol. VI, No. 2, 1989.

Summary: Seventeen firefighters with a history of acute exposure to polychlorinated biphenyls, dibenzofurans, and dibenzodioxins were evaluated for peripheral neuropathy. Neuropathic evaluation was done using the Neurometer[®], a transcutaneous nerve stimulation device utilizing a constant sine wave at fixed amperage. Prior to detoxification, five of the 17 had abnormal current perception threshold measurements. Following treatment, all showed improvement. Most strikingly, the current perception thresholds of two patients returned to normal range after detoxification. This finding raises the possibility that damage heretofore thought to be permanent may in many instances be partially reversible.

Occupational, Environmental and Public Health in Semic: A Case Study of Polychlorinated Biphenyl (PCB) Pollution, Proceedings of the Annual Meeting of

the American Society of Civil Engineers, New Orleans, Louisiana, October, 1989.

Summary: Eleven workers with readily observable symptoms of exposure to PCBs and other chemicals were chosen for detoxification from a group of 24 male volunteers from a factory using PCBs in the manufacture of capacitors. The remaining 13 served as a control group. Detoxification treatment reduced both the body burdens and the symptoms of treated workers while no such improvements occurred in the control group. This study, undertaken in cooperation with the University Medical Center of Ljubljana and the Institut für Toxikologie, University and Technical Faculty of Zurich, supports the use of health screening and detoxification for individuals affected by toxic exposures.

Human Contamination and Detoxification: Medical Response to an Expanding Global Problem, Proceedings of the MAB UNESCO Task Force on Human Response to Environmental Stress, Moscow, 1989.

Summary: Individuals with a variety of workplace exposures were unable to work or had reduced work capacity. Following detoxification, each was able to return to work. Though the results presented are anecdotal, they confirm previous findings in the peer-reviewed literature (Schnare et al., 1982; Roehm, 1983; Schnare et al., 1984; Schnare and Robinson, 1985; Tretjak et al., 1989) and demonstrate that this approach can be effective in reducing body burdens of toxic compounds and returning individuals to the workplace.

Neurobehavioral Dysfunction in Firemen Exposed to Polychlorinated Biphenyls (PCBs): Possible Improvement after Detoxification, Archives of Environmental Health, Vol. 44, No. 6, 1989.

Summary: Fourteen firemen were exposed to polychlorinated biphenyls (PCBs) and their by-products at the site of a transformer fire and explosion. Six months after the fire, they underwent neurophysiological and neuropsychological tests. They were re-studied six weeks after detoxification. A control group of firefighters was selected from firemen who resided in the same city but were not engaged in the fire in question. Initial testing showed that firemen exposed to PCBs had poorer neurobehavioral function than the control group. Significant reversibility of impairment was noted after detoxification.

PCB Reduction and Clinical Improvement by Detoxification: An Unexploited Approach? Human and Experimental Toxicology, Vol. 9, 1991.

Summary: A female worker from a capacitor factory, with a history of exposure to polychlorinated biphenyls (PCBs) and other lipophilic industrial chemicals, was admitted for treatment at the University Medical Centre of Ljubljana, Slovenia (then Yugoslavia). She presented with severe abdominal complaints, chloracne, liver abnormalities and a bluish-green nipple discharge of approximately 50 ml d⁻¹ in quantity. High PCB levels were noted in adipose tissue (102 mg kg⁻¹), serum (512 ug l⁻¹), skin lipids (66.3 mg kg⁻¹), and in the nipple discharge (712 ug l⁻¹). After detoxification, PCB levels in adipose tissue were reduced to 37.4 mg kg⁻¹ and in serum to 261 ug l⁻¹, respective reductions of 63% and 49%. Excretion of intact PCBs in sebum, appreciable before treatment, was enhanced by up to five-fold during detoxification. The nipple discharge ceased early in the detoxification

regimen.

Xenobiotic Reduction and Clinical Improvements in Capacitor Workers: A Feasible Method, Journal of Environmental Science and Health, Vol. A 25, No. 7, 1990.

Summary: Eleven capacitor workers, occupationally exposed to PCBs and other industrial chemicals, underwent detoxification. Thirteen co-workers served as controls. Mean PCB levels prior to detoxification were 28.0 mg/kg in adipose and 188.0 µg/L in serum. Following detoxification, PCBs were reduced in serum by 42% ($p < 0.05$) and in adipose by 30% for patients without concurrent disease. Patients with concurrent disease had a 10% reduction in adipose levels, while serum levels remained unchanged. Both adipose and serum PCB levels increased in members of the control group. At a four-month follow up examination, these differences were maintained, though the mean adipose PCB values in all groups were higher than at post-treatment. All patients reported marked improvement in clinical symptoms post-treatment, with most of these improvements retained at follow-up. No such improvements were noted in controls.

Treatment of Pesticide-Exposed Patients with the Hubbard Method of Detoxification. Presentation at the 120th Annual Meeting of the American Public Health Association, 1992.

Summary: A review of the efficacy of detoxification in addressing the complaints of 155 patients who had experienced significant exposures to pesticides. Treatment effected reductions in chemical levels in adipose tissue, and a concomitant decrease in symptomatic complaints.

Neurotoxicity and Toxic Body Burdens: Relationship and Treatment Potentials. Proceedings of the International Conference on Peripheral Nerve Toxicity, 1993.

Summary: Many chemicals have neurotoxic health effects of long duration, leading to the conclusion that these effects are essentially irreversible. This paper proposes that the accumulation and persistence of neurotoxic chemicals in adipose tissue may play a role in the prolongation of neurotoxic effects. If this were the case, an approach designed to reduce body burdens of fat-soluble compounds should lead to a similar reduction in neurotoxic effects. Transcutaneous current perception thresholds were measured using the Neurometer device in 48 patients exhibiting neurotoxic effects both before and after detoxification. Following detoxification, marked improvements were noted in both peripheral neuropathy and self-reported patient profiles.

Reduction of Drug Residues: Applications in Drug Rehabilitation. Presentation at the 123rd Annual Meeting of the American Public Health Association, 1995.

Summary: Drug residues and their lipophilic metabolites are associated with persistent symptoms; their mobilization into blood correlates with drug cravings. The concentration of drug metabolites in both sweat and urine was measured in eight individuals who had been actively using drugs prior to detoxification. Cocaine, opiate, and benzodiazepan metabolites

were detected by fluorescent immunoassay in both sweat and urine. Low levels (not indicative of use) continued to be eliminated for several weeks. In two cases, drug levels were below detection prior to treatment but became detectable during detoxification. A separate series of 249 clients with a history of drug abuse rated the severity of their symptoms before and after detoxification. Chief symptomatic complaints prior to detoxification included fatigue, irritability, depression, intolerance of stress, reduced attention span and decreased mental acuity. (These same symptoms were dominant in those who had ceased active drug abuse over a year prior to treatment.) Following detoxification, both past and current users reported marked improvements in symptoms, with most returning to normal range. The Hubbard detoxification program represents a vital innovation in drug rehabilitation: an approach aimed at a long term reduction of the predisposition for drug abuse.

Treatment of Children with the Detoxification Method Developed by Hubbard. Presentation at the 123rd Annual Meeting of the American Public Health Association, 1995.

Summary: Eighteen children from ten families were referred for detoxification. Their chief complaints included environmental sensitivity, headaches, chronic fatigue, allergies, respiratory problems and recurrent infections. In each case, the entire family had become ill following a known change (e.g., application of pesticides, installation of improperly cured carpet) in their environment. The ages of the children ranged from neonatal to 15 at the time of exposure, with treatment ages ranging from 4 to 21. Treatment resulted in improvements in symptom profiles, with at least 89% of the children reporting long-term improvements in their symptoms. Where children have become ill following chemical contamination, treatment with the detoxification method developed by Hubbard is a viable approach.

Precipitation of Cocaine Metabolites in Sweat and Urine of Addicts Undergoing Sauna Bath Treatment. College on Problems of Drug Dependence, Fifty-Seventh Annual Scientific Meeting, National Institute on Drug Abuse, College on Problems of Drug Dependency, 1995.

Summary: Four subjects (three males and one female) admitted to a residential treatment program were selected for study. All met DSM-III-R criteria for cocaine dependence and ingested cocaine by smoking. The duration of their use of the drug ranged from eight months to 18 years, and they reported cocaine use on over 75% of days in the month just prior to treatment. Three reported last use of cocaine within 48 hours of admission; one reported last use 25 days prior to program entry. Urine and sweat samples were collected from subjects every two to three days during detoxification and analyzed by fluorescent immunoassay. Cocaine metabolites were detectable in both sweat and urine of all subjects. Three of the four subjects showed a measurable increase in sweat or urine cocaine metabolite concentrations at the beginning of detoxification. Two subjects demonstrated negative urine samples prior to detoxification, but demonstrated the presence of metabolites when detoxification commenced.

Reduction of the Radioisotope Cs-137 Using the Detoxification Method Developed by Hubbard. Presentation at the 124th Annual Meeting of the American Public Health Association, 1996.

Summary: Fourteen children living in the plume path of the destroyed Chernobyl reactor underwent detoxification. Each was periodically measured using a portable radiation detection system capable of measuring the characteristic gamma ray emitted during the radioactive decay of Cs-137. (Five such measures over the course of approximately four weeks.) Elimination rates were compared to expected rates of elimination from published studies. Children uniformly eliminated Cs-137 more rapidly than expected, with the exception of two cases in which children were eating contaminated treats from home. (Rapid elimination of Cs-137 resumed when these items were eliminated from their diets.)

A Review of Scientific Literature Supporting the Detoxification Method Developed by L. Ron Hubbard

I. Contamination with Synthetic Chemicals

Human exposure to toxic chemicals has dramatically increased in the last century. Millions of compounds have been formulated and some 50,000 are now in commercial use. The environmental persistence of many of these compounds is cause for concern. In addition, many of these synthetic compounds accumulate in biological organisms (“bioaccumulation”), storing in bone, fat, or another compartment of the body.

Hundreds of these compounds are found in U.S. citizens, with many present in each of us (1). In addition to commercial compounds, many drugs — both pharmaceutical and so-called recreational — can remain in the body for an extended time. Drugs such as LSD (2,3), PCP (4), cocaine (5), marijuana (6) and diazepam (7) are found in fat. These drugs can be retained for extended periods, especially under conditions of chronic use (5,8-11).

Adverse health effects have been shown for some of these compounds. Health effects from most compounds have not, however, been studied in detail. Further, the health effects from combinations of chemicals are unknown. It is clearly preferable to have low levels of foreign compounds rather than high.

II. Reduction of Bioaccumulated Compounds

While we still do not fully understand the bioactive mechanisms or the kinetics of many toxic substances, physicians have known for centuries that health problems can ensue as a result of accumulations of xenobiotics (foreign chemicals) and have looked for ways to safely and effectively reduce body burdens.

Ramazzini, in his 1713 work, Diseases of Workers, notes that writers of works on poisons at that time “advise, in general, remedies that have the power of setting the spirits and blood mass in motion and of provoking sweat” (12), a recommendation which aligns well with current knowledge of the kinetics and metabolism of foreign compounds.

Approaches to handling bioaccumulation of harmful chemicals depend on increasing the rate of removal of these compounds. This is accomplished by either altering the compound to a non-toxic form or by enhancing the rate of elimination.

This philosophy has been applied in many ways. In acute poisoning, purging is a key means of removing the toxic compound before adverse effects arise. For this reason, a strong purgative is included in the highly toxic pesticide, paraquat.

Ingestion of compounds known to bind to the contaminating compound has been used in some cases. This increases the rate of removal of the toxic compound because it cannot be reabsorbed as it passes through the intestine. In this manner, cholestyramine was successfully used to reduce levels of Kepone (13), and Prussian blue was used to reduce levels of radioactive Cesium (14).

A fasting technique has been used to enhance the mobilization of fat-stored compounds.

This approach resulted in improved symptoms in 16 PCB-exposed Taiwanese patients (15), although the levels of PCBs in the blood of these patients increased.

Ethylenediaminetetraacetate (EDTA) has been used for many years in the treatment of lead toxicity. EDTA binds to lead and other compounds in the blood, the resultant complex then being eliminated. (16,17)

Reduction of fat-stored chemicals must be aimed at mobilizing chemicals from fat stores, distributing the mobilized chemical to routes of elimination, and increasing the rate at which these routes are utilized. This is the design behind the detoxification procedure developed by Hubbard.

III. The Detoxification Program Developed by L. Ron Hubbard

This program was designed to mobilize and enhance the elimination of fat-stored xenobiotics. The Hubbard program was specifically developed to reduce levels of drug residues but has proven to be applicable to the reduction of other fat-stored compounds. The program has gained widespread support due to its effectiveness and the fact that it is well supported by the medical literature. Each component of the program is in alignment with current research on the mobilization of fat stores and the facilitation of toxin elimination. The components of this program are:

A. Exercise:

Fat is stored throughout the body, with significant deposits not only in adipose tissue but also in cellular reserves, membranes, etc. Exercise is aimed at both promoting deep circulation in the tissues and enhancing the turnover of fats.

Numerous studies have shown that exercise promotes the circulation of blood to tissues (18) and also promotes mobilization of lipid from storage depots (19-24).

Mobilization of fat stores is accompanied by mobilization of the toxins stored in the fatty tissue (25-27).

B. Sauna:

Mobilization of chemicals is not desirable if routes of elimination are not enhanced. Chemicals are excreted through many routes including feces, urine, sweat, sebum, and lung vapor.

The purposes of the sauna aspect of this program are two-fold. Heat stress is a means of increasing circulation (28) and of enhancing the elimination of compounds through both sweat and sebum. It is documented that methadone (29), amphetamines (30), methamphetamines and morphine (31), copper (32), mercury (33), additional metals (34) and other compounds appear in human sweat. Enhancement of this elimination route is a key purpose of the sauna aspect of this program.

In addition to an increase in sweat production, increased body temperature results in heightened production of sebum, the material produced by the skin's sebaceous glands (35).

In patients exhibiting “chloracne”, a specific skin disorder caused by chemical exposure, the causative compounds may be detected both in adipose tissue and in sebum of the skin (36).

Though not a major route of elimination for polychlorinated biphenyls (PCBs), PCBs may be found in sebum of exposed individuals (37). Both the concentration of PCBs and the quantity of sebum produced have been shown to increase during the detoxification program developed by Hubbard (38).

C. Supplements:

Niacin

Effects of specific vitamins are utilized as well. Niacin has a long-term effect of reducing the mobilization of fatty acids (39). However, the initial reduction in mobilized fatty acids following a single dose is followed by a transitory increase in free fatty acid mobilization (40,41).

Mobilization of free fatty acids by other mechanisms has been shown to result in concurrent mobilization of the fat-stored chemicals (26,27). This also appears to occur during this detoxification program. The increased turnover of fat results in mobilization of fat-stored chemicals and the opportunity to eliminate them from the body.

Polyunsaturated Oils

One means of excretion of chemicals is through the bile. However, such bile excretion results in elevated levels of chemicals in the intestine, providing an opportunity for reabsorption of these compounds (42,43).

It has been known for many years that addition of unsaturated oils to the diet can increase the excretion rate of certain compounds. This is due either to blocking the reabsorption of the chemical or to altering the rate at which the compound is excreted (45).

Supplementation with unsaturated fats also affects the content of the stored adipose tissue (45). Apparently, as the stored fats are mobilized and re-stored, the dietary supplements replace some of the mobilized fats so that an exchange is effected.

Vitamin Supplementation

Vitamin and mineral supplementation is included for several reasons. Replacement of vitamins and minerals lost through sweating is one reason. Correction of any deficiencies is necessary as well.

Extensive sweating is a component of this program. As significant levels of vitamins and minerals appear in sweat, their loss through sweating could create deficiencies were they not replaced.

Deficiencies may already be present. Specific vitamin, mineral and amino acid deficiencies are known consequences of alcohol and drug abuse, due either to poor nutrition or to the action of the drugs themselves (46-48). PCB poisoning in animals has been shown to result in a significant decrease of vitamin A in the liver and serum (49,50).

Further, research in animals has demonstrated that vitamin deficiencies retard the metabolism of drugs (51). Changes in nutrient levels, with consequent adverse effects on metabolism, may occur with other chemicals as well.

Supplementation with vitamins is anticipated to assist the individual in several ways. Such supplementation will certainly assist in correction of nutritional deficiencies. It might also be expected to aid in the metabolism of chemicals.

D. Sufficient liquids to offset the loss of body fluids through sweating:

This is a logical necessity during any extended period of sweating. In addition to liquid supplementation, sodium, potassium, calcium-magnesium solution and cell salts are taken on an

individual basis. Patients undergoing this detoxification program are monitored to ensure signs of heat exhaustion or salt depletion do not appear.

E. Regular diet supplemented with plenty of fresh vegetables:

This program is not a dietary program. The only change in diet required by patients on this program is that they eat plenty of fresh vegetables. This ensures that bowel movements remain regular.

F. A properly ordered personal schedule which provides the person with the normally required amount of sleep:

The detoxification program is intensive. The mobilization and elimination of stored chemicals can put a stress on the individual's body. Therefore, it is imperative that individuals ensure that they are well-rested during the program.

IV. Studies Regarding the Detoxification Program Developed by L. Ron Hubbard

A. Safety of the Program:

An initial study of 103 individuals demonstrated the safety of this program. Medical complications associated with the program occurred in less than three percent of the individuals and were minor in nature. There was one case of pneumonia, one of ear infection, and one case of diarrhea during the approximately three weeks of program delivery. Reductions in blood pressure and cholesterol were benefits of the program. The program also resulted in improvements in psychological test scores. (52)

This program is designed to mobilize and eliminate fat-stored chemicals. During any such program in which xenobiotics are deliberately mobilized from fat stores, it is important that elimination keep pace with this mobilization process. Otherwise it is possible that mobilization will result in heightened blood concentrations of the mobilized compounds.

Blood levels of chemicals were monitored in a study of electrical workers conducted by Schnare & Robinson (53). They showed that blood levels of both PCBs and pesticides were fairly consistent over the course of treatment. Thus, elimination of compounds appeared to keep pace with their mobilization during this study.

B. Results of Detoxification:

The detoxification method developed by Hubbard has been shown to reduce levels of several fat-stored chemicals. Studies of this method have focused on individuals who have accumulated fat-soluble compounds through either occupational or environmental exposure.

In 1983, Roehm reported reductions in DDE and PCBs and clearing of symptoms in a Vietnam vet with a range of symptoms (54).

A 1984 study demonstrated statistically significant reductions of from 10.1 to 65.9 percent for sixteen fat-stored compounds. The compounds tested included polychlorinated biphenyls (PCBs), polybrominated biphenyls (PBBs) and chlorinated pesticides. The study population had been specifically exposed to PBBs approximately 10 years prior to treatment. Reductions in PBBs were 58.7 percent ($p < 0.05$) when treated with the Hubbard method. (55) According to independent evaluation, the chemical levels for PBBs had not reduced during the five years prior to treatment (56).

In a controlled study, electrical workers exposed to hexachlorobenzene (HCB), PCBs and other compounds, were treated with the Hubbard method. Statistically significant reductions of 30% for HCB and 16% for PCBs were observed. These reductions were stable at follow-up observations three months subsequent to treatment. (53)

Further documentation of PCB reduction was reported in the case of a female factory worker from Yugoslavia. Her excessive PCB levels (102 mg/Kg in adipose and 512 $\mu\text{g/L}$ in serum — approximately 50 times higher than the general population) were reduced by 63% in adipose and 49% in serum following treatment. In addition, a spontaneous breast discharge containing PCBs ceased during treatment. This woman's symptoms also improved over the course of treatment. (38)

Improvements in this woman led to a controlled study of a group of male co-workers. Again, reductions in PCB levels were observed and improvements in symptoms noted for the group treated with the Hubbard method (57,58).

As the number of toxic chemicals in the workplace increases, it is sometimes difficult to identify the exact nature of a toxicant. Such was the case for a woman exposed to both the residues trapped in filters from the exhaust stacks of an oil-fired electrical generator and the contaminated water used to clean these filters. She became ill following six months of such exposure and was unable to work. During treatment with the Hubbard method a black substance began oozing from her pores. This abated late in treatment. Both her objective and subjective complaints were reduced following treatment and she was able to return to work. (59)

Firefighters are often exposed to toxic compounds in the course of their work. Such was the case for a group of firefighters responding to a fire involving transformers filled with PCBs. Several of these men became ill following the fire.

Neurophysiological and neuro-psychological tests were conducted on 14 of these firefighters six months after the fire. This battery of 22 tests demonstrated that the

firefighters who had been involved with the fire were significantly impaired in both memory and cognitive functions when compared to co-workers from the same department who had not participated in fighting this fire. (Scores for 13 of the 22 tests were significantly worse in the exposed firefighters.)

Following treatment with the detoxification method developed by Hubbard, significant improvements in 6 of the 13 tests originally showing impairment were noted. (60)

These firefighters were also tested for peripheral nerve damage. Five of the seventeen firefighters tested showed significant peripheral neuropathy. All showed improvement following treatment with the Hubbard method, with two of the five returning to normal range. (61)

Many people have experienced adverse health effects after exposure to compounds whose identity is unknown. The detoxification program has been shown effective in alleviating symptoms in such patients. In one study, the selected patient population reported symptom profiles prior to treatment that were in alignment with chemically exposed individuals reported by other authors (not statistically different). Following treatment, their symptom profiles had improved significantly and were now not significantly different from a healthy population. (62)

V. Summary

This body of peer-reviewed literature substantiates the effectiveness of the Hubbard program in reducing levels of foreign compounds stored in fat and in improving the symptom profiles of chemically exposed individuals. Health benefits of this program are not limited to symptomatic improvements. In the case of documented impairments in neurological function, these impairments were shown by two independent approaches to be significantly improved by detoxification treatment.

This program has proven to be a safe and effective addition to clinical practice. As the quantity and variety of chemicals employed in our society increase, it can be expected that this program will become increasingly relevant.

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