

**BEFORE THE STATE BOARD OF DENTAL EXAMINERS
STATE OF COLORADO**

CASE NO. DE 95-04

INITIAL DECISION

**IN THE MATTER OF THE DISCIPLINARY PROCEEDINGS REGARDING THE
LICENSE TO PRACTICE DENTISTRY IN THE STATE OF COLORADO OF HAL A.
HUGGINS, D.D.S., LICENSE NO. 3057,**

Respondent.

This is a disciplinary proceeding pursuant to the Dental Practice Act of Colorado, Sections 12-35-101 to 135, C.R.S. (1985 through 1995), regarding Hal A. Huggins, D.D.S. ("Respondent"). Hearing in this matter was held on November 27, 28, 29, 30, and December 1, 4, 5, 6, 7, 11, 12, and 13, 1995, before Administrative Law Judge Nancy Connick. The State Board of Dental Examiners ("Board") was represented by Susan Machmer and Robert N. Spencer, Assistant Attorneys General. Respondent was represented by James L. Merrill and Stephen D. Harris, Esq.

PRELIMINARY MATTERS

At the close of hearing in this matter, Respondent's counsel indicated that several of the affirmative defenses listed in the Amended Answer had been resolved by prior rulings and that Respondent was pursuing only two affirmative defenses: 1) the applicability of Section 12-35-118(1)(x), C.R.S., only as to conduct after July 1, 1989, and 2) the First Amendment guarantee of free speech. The Board concedes that Section 12-35-118(1)(x), C.R.S., applies only after July 1, 1989. In relation to the First Amendment affirmative defense, the Administrative Law Judge ruled that Respondent must either file a post-hearing brief supporting his defense or waive it. By letter dated December 15, 1996, Respondent elected not to file a post-hearing brief. This affirmative defense is therefore deemed waived.

ISSUES PRESENTED

The Board has charged Respondent with five main violations of the Dental Practice Act. Two of these charges relate to the general operations of Respondent's dental practice. These charges raise the issues of whether Respondent used

misleading, deceptive or false advertising and whether his professional corporation practiced outside the scope of dentistry with persons other than licensed dentists. The three remaining charges deal with Respondent's care of eight patients during the period from 1989 through 1992. The Board charges that Respondent has provided substandard and grossly negligent dental care; that he failed to refer patients to physicians; and that he repeatedly administered unnecessary tests and treatments which were without clinical justification.

In order to resolve these charges, it is imperative to understand the standard treatment protocols used by Respondent, the dynamics of mercury toxicity, and the scientific basis for the diagnostic tests and treatments used by Respondent. The Findings of Fact are thus organized as follows: I. General Operation of the Huggins Center and Scope of Dentistry; II. Mercury and Its Release from Amalgam; III. Endodontically-treated Teeth and Cavitations; IV. Huggins Center Diagnosis of Mercury Toxicity; V. Huggins Center Treatment; and VI. Individual Patients of the Huggins Center.

FINDINGS OF FACT

1. Respondent was licensed to practice dentistry in Colorado on June 30, 1992, and has been continuously licensed since that date.

2. Respondent received his dental degree from the University of Nebraska in 1962 and has been practicing dentistry in Colorado for 33 years.

3. In addition to his dental degree, Respondent obtained a master's degree in basic science from the University of Colorado at Colorado Springs in 1989. Respondent has never had a medical degree or been licensed by the Colorado State Board of Medical Examiners.

4. On December 21, 1983, the Board entered into a Stipulation and Order which imposed discipline on Respondent in the form of a public censure and an 18-month probation with continuing dental education requirements and practice restrictions. Respondent did not admit the validity of these charges, which arose from orthodontic care provided to two patients. Respondent agreed never to practice orthodontics again.¹⁷

5. For the past 22 years Respondent has limited his practice of dentistry to the diagnosis and treatment of patients he believes are mercury toxic due to the placement in their mouths of dental amalgam fillings which contain mercury. Toxicity refers to the ability of a physical or chemical agent to induce pathology. Amalgam is

the most commonly used dental material in the world. For over 150 years it has been the primary restorative material used to treat dental caries. Its primary ingredient is mercury (43-50%), and it also includes copper, silver, zinc and tin.

6. Respondent originally used amalgams in his dental practice. As early as 1973 Respondent became aware of anecdotal cases of medical improvements reported upon the removal of amalgams. Respondent states that he then began to observe similar phenomena in his own practice. It was at this time that Respondent stopped using amalgam and adopted as his life's prime objective the "exposure of mercury's destructive potential." Since 1973 Respondent has used composite, a plastic filling material. Through trial and error over the next twenty years, Respondent has refined his methodology to effectuate an asserted ever-rising success rate.

I. General Operations of the Huggins Center and Scope of Dentistry

7. Respondent is the sole owner, shareholder and director of the Huggins Diagnostic and Rehabilitation Center ("Huggins Center" or "Center"), a professional corporation located in Colorado Springs, Colorado. The Huggins Center has been in operation since 1985 to perform dentistry and continues to operate at present.²¹

8. The Huggins Center is the self-proclaimed world leader in the treatment of alleged mercury toxicity caused by amalgam fillings. In addition to Respondent, there are an undisclosed number of dentists in Colorado who also remove amalgam fillings to treat mercury toxicity. Respondent is the only dentist in the United States who trains other dentists how to treat patients with alleged mercury toxicity due to dental amalgams.

9. By far the largest part of Respondent's practice involves multiple sclerosis ("MS") patients. By 1980 he had treated 400 MS patients.

10. Respondent also owns the Huggins Diagnostic Laboratory ("Huggins Laboratory"), which is a part of the Huggins Center. The Huggins Laboratory performs a number of tests which support the function of the Huggins Center: co-oximetry, urine tests for mercury, serum compatibility tests, and lymphocyte viability studies.

11. Over time the Huggins Center has had a staff of approximately 50 employees, including approximately three dentists, dental assistants, nurses (including a psychiatric nurse who assists patients who experience emotional upsets when their amalgams are removed), nutritional counselors, massage and movement therapists; a video producer, accountants, other business employees, and, for a

while, a physician (Dr. Sandra Denton, who was hired March 1, 1991).^{3'} Respondent has developed the Huggins Center into a successful business.

12. The Huggins Center^{4'} treats diseases which Respondent believes are caused by amalgam fillings. Respondent links the following categories of diseases and disorders to dental amalgams:

a. Neurological, including tremors, seizures, MS, amyotrophic lateral sclerosis (*i.e.*, Lou Gehrig's disease or "ALS"), Alzheimer's disease, emotional disturbances, unexplained depression, anxiety and unprovoked suicidal thoughts.

b. Immunological, including systemic lupus erythematosus, scleroderma, and rheumatoid arthritis.

c. Cardiovascular, including unexplained heart pains, high and low blood pressure, tachycardia, and irregular heartbeat.

d. Collagen, which refers to connective tissue, including osteoarthritis.

e. Miscellaneous, including chronic fatigue, "brainfog," digestive problems, and Crohn's disease.

13. The Huggins Center accepts for treatment patients with just about any symptoms and has even treated patients such as Dr. T.F. whose only exposure to mercury is occupational. The Center encourages prospective patients suffering from almost any illness to seek treatment from the Center and offers them assurances that their health will improve.

14. In 1985 Respondent co-authored with his then wife a book entitled *It's All in Your Head*, in which he espoused with great conviction and emotion his theories about the hazards of mercury amalgam and the treatment offered at the Huggins Center. In 1993 Respondent revised this book and retitled it *It's All in Your Head: The Link Between Mercury Amalgams and Illness* (referred to collectively as "Respondent's book").

15. The Huggins Center widely advertises a toll-free number where persons interested in the issue of mercury toxicity from amalgams can call to obtain information. Patient representatives, who are essentially sales personnel who are paid on commission, answer telephone inquiries. They encourage callers to purchase and read Respondent's book; provide brochures, position papers, videos and other materials prepared by the Center outlining Respondent's theories; refer out-of-area callers to dentists and physicians who have attended Respondent's seminars and who thus share his beliefs on amalgam; and encourage enrollment at

the Center for treatment. In the past couple of years, there have been approximately 5,000 callers a month to the Center. Respondent intends the material distributed through the Huggins Center to be read and relied on by potential patients and the interested public. These materials constitute advertising.

16. Many of the patients who seek treatment at the Huggins Center are very ill and are desperately seeking help when they have been unable to obtain it elsewhere.

17. The Huggins Center accepts the patient's medical diagnosis (e.g., MS), makes a diagnosis of mercury toxicity, and then treats the purported mercury toxicity and medical disease.⁵¹

18. The Huggins Center treats patients by removing all dental amalgams, metallic crowns or bridges; replacing these with composites; extracting all teeth which have had root canals; and excavating cavitations (see paragraph 99). The Center provides this treatment to patients who are experiencing no problems with their amalgams, crowns, bridges, or root canal teeth and who are asymptomatic.

19. Sometime before 1985, Respondent developed a standard protocol for treatment of Huggins Center patients. With minor changes, this protocol has been in effect ever since. Respondent and the Huggins Center treat all patients according to this protocol, such that the treatment provided to a patient suffering from MS is basically the same as that provided to one with cancer. Respondent also trains the dentists who work at the Center. Even Denton, the physician employed at the Huggins Center, carried out "dental" protocols established by Respondent, as shown by the similarity of treatments administered over time to patients and reinforced by the non-competition clause in her employment contract identical to that of the dentists. The record shows no difference in the treatment rendered by Denton and other personnel of the Center.

20. The treatment protocols for the eight patients whose care is at issue in this matter are generally representative of the protocols of the Center both before 1989 and through July, 1995.

21. Respondent exercises total control over the operations of the Huggins Center. The protocols developed by Respondent insure that the care rendered by the staff to any particular patient reflects Respondent's judgments about appropriate patient care. Respondent is intimately involved in every aspect of the Center, including the patient treatment offered.

22. Respondent meets all patients of the Huggins Center and effectively conveys to them his strong belief that the treatment offered at the Center will improve

✓ their health. If a patient appears reluctant to proceed with the Huggins Center treatment, Respondent steps in with a harder sell approach, telling the patient something to the effect of "you want to get well, don't you?" Respondent exhibits sympathy and warmth. On several occasions, Respondent has told patients that he had MS and was cured, even though in fact Respondent has never suffered from this disease. 8

23. Respondent has designed two separate "detoxification programs" offered at the Huggins Center. The first is a comprehensive in-office program for those with serious problems. This program generally lasts two weeks, although it takes three weeks for ALS and leukemia patients. The Huggins Center has approximately 250 patients a year in this in-office program. The cost of this program is about \$6,000 plus charges for the actual dentistry. The second is an "assist program" to patients outside Colorado, those with more moderate problems, and those interested in prevention. The assist program costs approximately \$380 plus charges for serum compatibility testing and the dental work.

24. The Huggins Center programs include five steps:

a. Patients receive a complete body chemistry to determine the diagnosis of mercury toxicity and to guide future treatment. In Respondent's view, the body is only able to eliminate toxic elements such as mercury when body chemistries are balanced. Patients also fill out a questionnaire to aid in the diagnosis of mercury toxicity ("mercury toxicity questionnaire"). The Huggins Center condenses the data received from the body chemistry testing, urine testing and hair analysis to prepare a Mercury Assist Program Report ("Assist Report").

b. Based on the body chemistry analysis, the Huggins Center develops a nutritional plan to aid a patient in reaching optimal levels of various substances in the blood. According to Respondent, these nutritional supplements enhance the functioning of the cell membranes and increase the body's ability to release toxic metals such as mercury.

c. The Huggins Center provides a dental examination, takes electrical readings of amalgams with a meter known as an ammeter, and removes all amalgams. Respondent views the removal of dental amalgams as the first step toward recovery from the "ravages of mercury toxicity."

d. The Center then conducts serum compatibility tests with the stated goal of determining which dental materials are compatible with an individual's immune system. Respondent developed this test himself. It is a critical part of the treatment program so that a patient can avoid "going from the frying pan to the fire."

e. The Huggins Center conducts a follow-up analysis of blood and urine to determine if the chemistries are changing as desired. The Center also offers a six-month analysis of blood, hair and urine.

Scope of Dentistry

25. Respondent is a general dentist. In Respondent's opinion, general dentistry addresses everything which affects the health of the oral cavity and everything in the oral cavity which has a systemic effect.

26. The practice of dentistry generally includes the treatment of the gums, mouth, teeth and associated tissues. Only dentists are qualified to remove amalgams and if amalgams were toxic, they should be removed as a first step to treating the toxicity. A dentist may not treat all disorders which arise from the oral cavity, as Respondent claims.

27. The diagnosis and treatment of mercury toxicity is the practice of medicine, not the practice of dentistry. In addition, the diagnosis or treatment of MS, any neurological disease, or any disease described in paragraph 12 is the practice of medicine, not dentistry. Generally accepted standards of practice require a dentist to refer the diagnosis and treatment of these medical conditions to a physician.

28. Generally accepted standards of dental practice prohibit a dentist from practicing outside the scope of dentistry. By practicing medicine, Respondent has thus failed to meet generally accepted standards of dental practice.

II. Mercury and Its Release From Amalgam

29. Certain basic properties of mercury, including its toxic nature, are not disputed in this matter. The parties agree that any substance can be toxic at a high enough dose. The toxicity of mercury depends on its form, its dose, and the length of exposure. Mercury toxicity is a pathological event along the dose-response curve involving the dose of mercury which produces pathology to an oral or body system. The dose-response curve describes the toxicological principle that the bigger the dose, the bigger the response. This principle is also expressed by the phrase that "the dose makes the poison."

30. Mercury exists in three forms:

a. Elemental mercury is the type commonly found in amalgams. It lacks any charge and thus is not well absorbed from the gastrointestinal tract and presents little threat from ingestion. It is absorbed through the lungs and goes

directly to the nervous system. The release of mercury from amalgams has been recognized since 1979.^{6'}

b. Inorganic or metallic mercury is a corrosive antiseptic agent such as mercuric chloride which can induce acute kidney failure in animals. It has a charged molecule. The central nervous system is the common target for inorganic mercury vapor exposure.

c. Organic or methyl mercury is the type which caused mercury toxicity at Minamata Bay in Japan, when elemental mercury was dumped into the bay and converted in the water to organic mercury. Residents then got mercury toxicity from eating fish in which the mercury was bioconcentrated. In sufficient doses, organic mercury can affect the nervous system and kidneys.

31. Mercury serves no useful purpose in the body, although it is contained in the body naturally. The general population is exposed to mercury primarily from diet and dental amalgam. Mercury exists in the air and the water supply.

32. Mercury toxicity has caused certain occupational diseases involving mental dysfunction and possibly seizures. For example, the "Mad Hatters" got mercury into their bloodstreams from the vapor from softened felt used to make hats and experienced tremors, personality changes, and general neurological complaints. Even at the very high dose to which these workers were exposed, however, the workers did not develop MS or degenerative neurological diseases. When occupational exposure to mercury ends, the body excretes the mercury and the symptoms diminish or disappear.

33. Elemental mercury vapor is continuously released over the life of the amalgam, with greater amounts released during and after chewing.

34. Although there is some dispute in the scientific literature, the best estimates of the amount of mercury which comes off amalgams is 1 to 2 micrograms a day.^{7'} The amount of mercury from amalgams which is actually absorbed by the body is less, since the lungs only absorb approximately 50% to 80% of the mercury released. In comparison, the usual oral intake of mercury from fish and air is 2 to 10 micrograms a day.

Scientific Basis of Respondent's Theories Regarding Mercury Toxicity from Dental Amalgams

35. Respondent believes that elemental mercury vapor released from amalgams changes into methyl mercury in the mouth and that methyl mercury is 100 times more toxic than elemental mercury.

36. Respondent believes that the body absorbs mercury released from fillings and concentrates it in the central nervous system by two separate routes:

a. First, according to Respondent, mercury is absorbed by local tissues in the mouth and enters the bloodstream. It is then absorbed into the lungs or swallowed and enters the intestinal tract. Once in the circulatory system, Respondent believes that mercury has a high affinity for the central nervous system and kidneys and has a preferential accumulation in neuronal tissue.

b. Second, Respondent postulates that the mercury in the oral cavity enters directly into the nerves of the oral cavity (not through the bloodstream) and is transported directly back up the nerve sheath through the axons of the nerves themselves into the brain, where it causes damage. This is referred to as retrograde axonal transport of mercury.

37. Respondent believes that mercury causes autoimmune diseases by embedding in cell membranes, giving the cell the appearance of a foreign body, and triggering the immune system to destroy the specific cell. Respondent represents that not all persons exposed to mercury contract serious diseases such as MS due to their individual susceptibility or reactivity to mercury. The concept of susceptibility examines a specific person's or group's inherent likelihood of experiencing a given effect with a given dose.

→ | 38. Respondent admits that he cannot prove the link between mercury from dental amalgam and disease but believes that he is entitled to rely on his clinical experience which suggests such a link. Respondent relies primarily on his own clinical experience.

39. When asked to state the scientific basis for his theories on mercury toxicity from amalgams, root canal extractions and cavitations, Respondent was very vague. While he was able to identify a handful of studies upon which he relied, he generally referred to the thousands of publications in his library which supported his position, although he had not supplied these to the Board in response to their requests and could not identify them. He also sought to portray questions seeking to identify these studies as unreasonable by, for example, indicating that his goal is to treat patients and not to "rattle off" citations in the literature. In addition, he indicated his philosophy that the absence of proof is not the proof of absence.

→ | 40. It is highly probable that had additional studies actually lent credence to Respondent's practices, he would have supplied them or at least been able to identify them in substantially greater detail, particularly in light of the fact that he knew the scientific bases for his practices were being questioned and his dental license was

at stake. The Administrative Law Judge thus concludes that Respondent has no additional scientific authority for his practices than presented at hearing.

41. Respondent indicates he conducted various studies. Respondent's representations regarding the studies he conducted are questionable.^{8/}

42. The Huggins Center routinely videotapes patients both before and at the end of their treatment. Some remarkable recoveries are recorded on these videotapes. In one, a young woman diagnosed with MS within minutes of having her amalgams removed felt her muscle control returning and could stand, whereas before she could hardly walk.

43. Miraculous recoveries such as these are reasonably attributed to a number of factors other than the treatment received at the Huggins Center. It is possible that the patient in fact did not have MS. Murray, a neurologist who specializes in MS, indicates that 10% of his patients who have previously been diagnosed with MS in fact do not have this disease. In addition, MS has remitting and exacerbating cycles whereby there can be a decline in neurological function and then a spontaneous remission.

44. In considering the response of Huggins Center patients to treatment, it is also important to factor in the placebo effect. It is widely accepted and the Administrative Law Judge finds that there is a powerful therapeutic effect from any treatment administered to patients and that this placebo effect accounts for one-third of the improvement which results. The placebo effect is enhanced by positive patient expectations of treatment; by the provider's warmth, friendliness, interest, sympathy and positive attitude toward the patient and treatment; by the expense and impressiveness of the treatment; and by the patient's perception of the treater's expertise. Thus the supportive and positive care provided by the Huggins Center staff, along with the representations of an 85% success rate, add to the placebo effect. The placebo effect is transient and does not cure diseases.^{9/}

45. In support of his theories, Respondent presented at hearing the expert testimony of Dr. Boyd Haley, Professor of Biochemistry and Medicinal Chemistry at the University of Kentucky Medical Center and College of Pharmacy who holds a Ph.D. in chemistry and biochemistry. Haley teaches mercury toxicity in the toxicology program and spends the majority of his time doing research in nucleotide biochemistry. Haley has conducted experiments relative to the issue of dental amalgam and disease, but these do not scientifically prove Respondent's theories.

46. Haley's studies on dental amalgam began in the Spring of 1995 at Respondent's request. Respondent thus did not rely on these studies as the basis

for his treatment of patients, but he believes that they support his previously-developed theories. Respondent asked Haley to study whether mercury could interfere with the interaction of nucleotides (*i.e.*, the energy-producing and regulatory compounds found in all cells) and proteins such that it might cause autoimmune diseases.^{10/}

47. Based on his research, Haley's working hypothesis is that mercury may be one of the etiological factors in Alzheimer's disease. Haley recognizes, however, that the link between Alzheimer's disease and mercury from amalgams has not been established. Haley concedes that his research is totally preliminary and experimental in nature and needs to be verified by further research.

48. Haley's studies do not provide adequate scientific support for Respondent's theory that amalgams cause autoimmune diseases. Haley's results are thus completely dependent on Respondent's representations regarding the materials he tested. Respondent had a vested interest in the results of this study, which could be used to justify the treatments he had been administering for years. In order to be scientifically valid, the specimens must be obtained independently.

49. Respondent also relies in part on the testimony and studies of Dr. Douglas Swartzendruber, his former laboratory director, a Ph.D. in experimental pathology and full professor of biology at the University of Colorado at Colorado Springs.^{11/} Swartzendruber conducted two types of studies dealing with a possible immunological response to mercury.^{12/}

50. Based on published literature and his own admittedly preliminary study of the effect of low levels of mercury on the immune system, Swartzendruber believes that in humans, mercury is involved in autoimmune-like reactions from a variety of exposures. Swartzendruber relies on studies whose reliability is questionable, which are speculative, or which are unrelated to dental amalgam. Swartzendruber's only recommendation is the issue of removal of amalgams to treat disease be studied further.

51. Swartzendruber freely admits that the results he obtained were not definitive. In his view, this is a pilot experiment which does not demonstrate an immune system response but is merely consistent with that possible explanation. Swartzendruber's studies do not provide adequate scientific support for Respondent's theory that mercury causes immunological disease.^{13/}

52. Respondent presented the expert testimony of only Haley, Swartzendruber and himself. No dentist other than Respondent testified.

53. The additional scientific authorities relied on by Respondent can generally be described as poorly constructed, biased, improperly conducted, not unblinded, or irrelevant. Some discuss methyl mercury, while making no connection to the elemental mercury released from dental amalgams, while some simply state opinions.^{14/} Dental students are taught how to assess the reliability of medical and dental literature. The literature relied on by Respondent is so deficient that his reliance on it for treatment would fall below generally accepted standards of dental practice. Respondent also cites scientific literature selectively.^{15/}

54. In animal experiments involving uniquely susceptible animals, mercury has triggered certain types of immunological reactions such as glomerulonephritis. These studies raise a question about whether mercury causes immunological abnormalities but are insufficient to state that mercury from amalgams causes immunological disease in humans.^{16/}

55. As scientific support for his removal of amalgams to treat MS, Respondent relies on two studies by Robert L. Siblingud, an optometrist. Respondent concedes, however, that these studies do not definitively state that amalgam fillings cause MS. Although Siblingud's publications indicate that they are preliminary and subject to further investigation, Respondent discounts this as standard language to obtain more funding. These are not reliable scientific studies and provide no basis for any treatment administered at the Huggins Center, *i.e.*, amalgam removal.^{17/}

56. Respondent relies on the research of M. Heintze, Ph.D. at the University of Lund in Sweden for the proposition that bacteria in the mouth produce methyl mercury.^{18/} Heintze did laboratory studies in which he concluded that it was possible for bacteria to make trace amounts of methyl mercury under conditions of a pure culture and favorable growth conditions. This study does not predict what will happen in humans, and other studies have harvested bacteria grown on the surface of amalgam and shown no methylation of mercury in the mouth. At best, Heintze's study is a test tube experiment which has not been duplicated in the mouth. There is no reliable scientific basis to state that mercury methylates in the mouth to any extent.

57. Respondent's statement in his book that Heintze "showed that the process of methylation (combining a methyl group with a metal) can take place in the mouth" is misleading, deceptive and false.

58. Respondent also relies on Theodore Ingalls, M.D., who himself suffered from MS, as definitive evidence in support of his theories. Ingalls correlates his own MS with amalgams on the same side of his body. Ingalls relied on the epidemiological study of William Craelius relating to decayed, missing and filled teeth which occurred between 1974 and 1984. Craelius concluded that the incidence of

both death from MS and of missing, decayed, and filled teeth increases in northern latitudes. In order to draw valid conclusions from this study, one must correlate this data with the gene pool of the population studied. Ingalls did not attempt to do so and did not prove a connection between amalgams and MS.

59. Respondent also relies on the work of David Eggleston, D.D.S. Eggleston did a preliminary study in which he claims that the placement and removal of amalgams change the number of T lymphocytes in the peripheral blood. Eggleston used brain tissue from cadavers. This study is not scientifically reliable.^{19/} The value of this type of study depends on whether the results can be repeated, and Eggleston's results have not been repeated in subsequent studies.

60. J. Rodway Mackert, D.M.D., Ph.D., did a reliable follow-up study to Eggleston's study. He studied lymphocyte populations (*i.e.*, different types of T cells) in patients with and without amalgams and found no evidence to support the theory that amalgams affect the immune system and lymphocytes. He found no differences in the group with amalgams and the control non-amalgam group.

61. Respondent also relies on a survey of available literature performed by G. Mark Richardson, Ph.D., which was released just prior to hearing and submitted to Health Canada, the Canadian ministry of health. Richardson recommends limiting amalgams to one in toddlers, three in teens, and four in adults. Richardson recognizes that the uncertainty factors involved in his proposed tolerable daily intake figures may be conservative and result in values lower than the actual threshold for effects. These as-yet-unadopted thresholds do not validate Respondent's claims. In fact, Richardson concludes that available data show only minor effects of dental amalgam on kidneys, show no statistically relevant immunological changes, and show that the studies regarding the link of mercury and Alzheimer's disease are suspect.

Scientific Information Refuting Respondent's Theories

62. A number of governmental and professional groups in the United States and elsewhere, including the following, have issued statements which conclude that there is no evidence that amalgams are related to disease:

a. The FDI, an international dental trade organization, and World Health Organization issued a consensus statement in 1991 indicating that amalgams are safe and that the risk of side-effects, as for all restorative materials, is very low.

b. In 1990 the U.S. Food and Drug Administration ("FDA") refused to take action in relation to dental amalgam based on the lack of reasonable evidence that it is harmful to health.

c. The January 1993 report of the United States Public Health Service (Subcommittee on Risk Management of the Committee to Coordinate Environmental Health and Related Programs) indicates that the absence of human studies precludes a definitive conclusion about whether mercury in amalgam poses a public health risk but that "there is no evidence at present that the health of people with amalgam is compromised in any way." It also finds no evidence that the removal of amalgam has a beneficial effect on health. This is the most current authoritative study in the area.

d. The American Dental Association ("ADA") has taken the position that it is improper and unethical for dentists to remove amalgam restorations from non-allergic patients for the alleged purpose of removing toxic substances from the body. It supports amalgam as a safe restorative material and concludes that despite considerable scientific study, there is no documented evidence that amalgam or mercury from it has a deleterious effect on health.

e. A National Institutes of Health Technology Assessment Conference on Effects and Side-effects of Dental Restorative Materials held in 1991 concluded that "[c]urrent dental restorative materials can be used effectively for restoring teeth for function or aesthetic reasons." It further concluded that "there is no scientific evidence that currently used restorative materials cause significant side-effects. Available data do not justify discontinuing the use of any currently available dental restorative materials or recommending their replacement."

f. The Swedish Medical Research Council concluded in 1992 that available data show that mercury released from dental amalgam does not contribute to systemic disease or systemic toxicological effects, does not have a significant effect on the immune system, and does not justify replacing or discontinuing the use of dental amalgam fillings.

g. The MS Society has also issued a statement concluding that dental amalgam is not a cause of MS.

63. These position statements are supported by credible scientific evidence. There is no reliable scientific basis to conclude that mercury from amalgams causes mercury toxicity. The only recognized area of concern in relation to mercury amalgam is possible allergic reactions.^{20/}

64. The release of 1 to 2 micrograms of mercury from amalgams is insufficient to get into the danger area of the dose-response curve and presents no known risk to humans.^{21/} Even studies which have concluded that a higher level of mercury is released from amalgams still conclude that there is no scientific basis to state that amalgams cause diseases in humans.

65. In 1993, for example, Dr. B.M. Eley, Ph.D., and Dr. S.W. Cox, Ph.D., conducted a critical review of the evidence regarding mercury released from amalgams; its absorption, accumulation and excretion by the body; and its possible relationship to poor health.^{22/} Eley and Cox cite studies showing no evidence of kidney impairment in subjects with amalgams; no relationship between elevated urinary levels in occupationally exposed dentists to kidney dysfunction; and no evidence that amalgams caused reduced immunocompetence. The last study cited was that of Mackert, which has previously been discussed.^{23/}

→ 66. Additional reliable scientific studies have shown that the conditions of patients reporting mercury toxicity from amalgams were explained by general medicine and do not suggest amalgam toxicity,^{24/} that the blood mercury levels in subjects with Alzheimer's disease were not statistically different from those of control subjects,^{25/} that amalgam fillings were not associated with impairment of the kidney function or immunological status,^{26/} and that significant enzymatic conversion of inorganic to organic mercury compounds does not occur *in vivo*.^{27/}

67. Respondent's theory about retrograde axonal transport of mercury is not supported by current knowledge regarding the body's transport of mercury. The trigeminal ganglia (*i.e.*, a cell body with a branch into the brain stem) is located just outside the brain. This is the first neuron cell body which mercury would come into contact with before entering the brain stem. If Respondent's theory about axonal transport of mercury were correct, one would expect that mercury would be toxic to the trigeminal ganglia, whereas there is no evidence of this. The mechanism and speed of mercury axonal transport have not been scientifically determined.

→ 68. An extremely impressive array of expert witnesses testified on behalf of the Board and provided unanimous support for the propositions that dental amalgam has not been shown to have any connection to the diseases identified by Respondent and its removal is not an effective treatment. These experts included Dr. Charles E. Becker, a physician with 25 years of experience who is board-certified in internal medicine, toxicology, and preventative medicine/occupational medicine and who has had extensive clinical experience in treating chronic and acute mercury toxicity; Dr. Ronald Murray, a neurologist who has a special interest in MS; Dr. Henry Claman, an immunologist with 35 years' experience who is a Distinguished Professor of Medicine and Immunology at the University of Colorado Health Sciences Center, is board-certified in internal medicine, allergy and immunology and clinical laboratory immunology, and who has conducted extensive research involving T cells and B cells; Dr. John Osborne, a general dentist with 32 years' experience who is a professor at the school of dentistry; Dr. Edward Rosenfeld, an endodontist who has practiced for the past 21 years; and Dr. Robert Baratz, a physician, dentist and Ph.D. in cellular biology who is board-certified in oral medicine and has conducted extensive research

on the adverse response to biological material used in dentistry and has taught over 100 courses in research methodology.

False Representations by Respondent Regarding Amalgams

69. Respondent claims that amalgams cause neurological diseases. Neurological diseases can be categorized as degenerative (e.g., Parkinson's disease, Alzheimer's disease, and ALS), autoimmune (e.g., MS or lupus) or inflammatory/infectious (e.g., encephalitis and meningitis).

70. **MS** affects multiple parts of the nervous system and manifests over time. Areas of inflammatory cells digest myelin, the insulator for electrical conduction from one neuron to another. Patients have diverse symptoms which manifest themselves at different times, including double vision, loss or blurred vision, weakness, numbness, tingling, loss of bowel or bladder control, and paralysis of extremities.

71. The hallmark of MS is T cells in the brain. The immune system is composed of white blood cells, which includes lymphocytes, one of which is the T cell (the other is the B cell which makes antibodies). T cells can bind to an organism and stimulate other arms of the immune system to attach to the organism or cell. When a new virus is introduced into the body and there are no antibodies to it, it begins to grow in tissue and cause damage. The immune system then sends T cells to process the protein and the T cells send signals to attract more T cells and B cells. In MS, the T cells react to the myelin covering, which has proteins in it. They sense the myelin covering as part of the virus and become sensitized, thus causing autoimmunity.

→ 72. Respondent testified that there are thousands of articles which establish that amalgam causes MS but was unable to give citations "off the top of his head."

73. The cause of MS is not known. The leading theory of MS is that the virus has sensitized the immune system to attack the brain and spinal chord. While it is known that organic mercury can affect the central nervous system, it is not known whether mercury from amalgams can. There is no cure for MS. Rather, treatment is designed to suppress the immune system and to decrease relapses.

→ 74. Respondent tells his MS patients that mercury from amalgams is one cause of MS and that better than 85% of his patients improve in their symptoms and chemistries. These representations are misleading, deceptive and false.

75. **Scleroderma** involves an excess deposition of fibrous tissue in the skin and internal organs. The majority of patients with scleroderma also have other autoimmune diseases. Its cause is unknown. Respondent's statements in his

publications attributing this disease to dental amalgams and indicating that amalgam removal is an effective treatment are misleading, deceptive and false.

76. **Systemic lupus** is an autoimmune disease which can affect any organ system, including the joints, heart, lungs and intestines. Respondent's statements in his publications attributing this disease to dental amalgam and indicating that amalgam removal is an effective treatment are misleading, deceptive and false.

77. **ALS** is a spontaneous disease with no known causes. It affects the cells which provide input from the spinal chord to the muscles and causes muscle atrophy and progressive paralysis. There is no cure or recovery for ALS patients. ALS commonly affects respiration. Treatment is symptomatic.

78. There is no scientific basis to support Respondent's assertion that amalgam fillings cause ALS or that the removal of amalgams is an effective treatment.

79. Respondent has made a number of representations in his book, publications, or videos in relation to ALS which are misleading, deceptive, and false:

a. In his book, Respondent states as follows: ". . . I could see all the chemical earmarks that suggested that [ALS] was an autoimmune disease of dental origin."

b. In his book, Respondent makes the following representation: "The significant discovery I made is that if these cavitations are opened and periodontal ligament is removed. . . , ALS patients respond . . . their mobility improved, their voices improved, and their attitudes improved. These changes indicated that healing could take place, and that ALS is not an entirely non-responsive disease. Some patients who received very early treatment have returned to near normal . . . their life expectancy is increased by eighteen months to three years."

80. **Alzheimer's disease** involves progressive dementia and a decline in higher cognitive functioning involving memory, insight, judgment and the ability to calculate. While its cause is not definitely known, the leading theory is that it involves poor processing of certain proteins in cells, which then accumulate and cause the neuron cells to die. There is no cure for Alzheimer's disease, and the treatment is thus supportive care.

81. There is no credible scientific evidence that mercury from amalgams causes Alzheimer's disease or that the removal of amalgams is an effective treatment, as Respondent represents. These representations by Respondent in his publications are misleading, deceptive and false.

82. **Parkinson's disease** is a degenerative neurological disorder. In his book, Respondent describes Parkinson's Disease as follows: "Parkinson's disease, another neurological manifestation of heavy metal toxicity, now also responds to treatment. . . . After finding the cavitation connection, Parkinson's began to respond beautifully." This representation is misleading, deceptive and false, as there is no scientific evidence to suggest a connection between amalgams, cavitations, or root canals and any neurological illness.

83. **Rheumatoid arthritis** is a chronic inflammatory disease of the lining of the joints and is an autoimmune disease. Its cause is unknown, but it is believed to be related to a malfunction of the immune system. Respondent's statements in his publications attributing this disease to dental amalgam and indicating that amalgam removal is an effective treatment are misleading, deceptive and false.

84. **Cardiovascular disease**, in Respondent's view, is attributable to amalgams. Respondent knows of no studies which definitely state that amalgam fillings cause cardiovascular disease. Respondent's statements in his publications attributing this disease to dental amalgam and indicating that amalgam removal is an effective treatment are misleading, deceptive and false.

85. **Immunological Diseases**, in Respondent's opinion, are caused in part by amalgams. Respondent testified that there were articles indicating that mercury, not specifically mercury from amalgams, causes immunological diseases but he was unable to recall them.

86. Respondent has made a number of representations in his book, publications, or videos in relation to the link between mercury from amalgams and immunological diseases which are misleading, deceptive, and false:

a. Respondent represents that "[w]ith mercury in your cell membranes, the immune system will start destroying your own tissues, thus the term autoimmune disease. Examples of this are diabetes, MS (MS), scleroderma, and lupus." This statement is false because it implies that mercury activates the immune system to cause autoimmune disease, whereas there is no evidence of this. There is no evidence that mercury at the level released from amalgams in humans creates antibodies.

b. Respondent describes mercury's role in autoimmune diseases: "With the addition of an atom of mercury to a molecule of joint tissue, the immune system identifies the tissue as non-self, or foreign, and proceeds to destroy it. When amalgams are removed, the pain of arthritis can be drastically reduced within a few days" Humans on very rare occasion do experience a contact sensitivity to

dental amalgam, but this is a local reaction, not one such as MS or lupus. This is only known reaction in humans to dental amalgam.

c. Respondent represents that white blood cells come in "6 basic sizes, shapes, and functions," but this is not supported scientifically.

87. Additional False Representations. Respondent has made a number of representations in his book, publications, or videos in relation to amalgams which are misleading, deceptive, and false because there is no scientific basis for the diagnosis of mercury toxicity from amalgams or for the treatment of medical diseases by the removal of amalgams:

a. Respondent represents that the removal of amalgams will ameliorate the six categories of diseases described above: neurological, cardiovascular, collagen, immunological, allergy and miscellaneous.

b. Respondent states that "[i]f we can adjust a person's chemistry before we remove the amalgam, and then take the fillings out sequentially, we get some good responses in cases of MS, epilepsy, leukemia, lupus, fatigue, constipation, chest pains, and the other problems related to mercury." There is no scientific basis to conclude that the removal of amalgam fillings has a salutary effect on any of these diseases.

c. Respondent consistently represents that the Huggins Center has an 85% success rate, measured by an improvement in patient symptoms and chemistries. Respondent believes that his treatments are effective and that it is only the patient's unwillingness to continue adequate nutritional and other follow-up or the patient's falling in the unlucky 15% which prevents success. Because there is no scientific basis for the diagnosis or treatment performed at the Huggins Center, this statement is misleading, deceptive, and false.

d. Respondent states that mercury toxicity cannot be treated successfully until all amalgam is removed from the mouth.

e. Respondent represents that the Huggins Center can treat patients affected by mercury and other toxins in the environment. In fact, the patients seen at the Huggins Center are not generally mercury toxic, the treatment provided is not appropriate to enhance elimination of mercury from the body, and the diagnosis and treatment of such patients is outside the scope of dentistry.

f. Respondent states that Huggins Center staff are qualified to explore the patient's "current physical, emotional and psychological condition" and

that tests "identify potential sources of toxic reactions." These practices are outside the scope of dentistry and thus cannot be performed by the Huggins Center.

g. Respondent represents that a "detailed dental examination is performed to identify sources of toxic reactions," but detailed dental examinations were not routinely performed.

h. Respondent represents that white blood cells usually increase as a response to the introduction of amalgam. There is no data to support this conclusion. Since the Huggins Center administers lithium to some patients and lithium elevates the white blood cell count, this may explain any elevated count.

i. In his book, Respondent describes his amazement at how fast mercury comes out of fillings, a discovery he attributes to measurements obtained in testing of amalgam fillings with an industrial Bacharach mercury detector. Although the Bacharach mercury detector can in fact detect mercury, it is ineffective in a small spaces such as the mouth and thus any readings are not reliable. By 1984 this mercury detector was generally known to be inaccurate.

88. Respondent's removal of amalgams in fact exposes the patient to more mercury than had the amalgam been left in place. When a dentist grinds up the amalgam to remove it, the patient breathes in an aura of mercury which stays with the patient for at least 70 days. This exposure far exceeds the mercury released from undisturbed amalgams.

III. Endodontically-Treated Teeth and Cavitations

89. As its standard protocol, the Huggins Center extracts all teeth which have been endodontically-treated, *i.e.*, which have had root canals performed on them, even when they are asymptomatic. A root canal involves the removal of inflamed or infected pulp, the inner tissue lining the inner tooth, and the sealing of that space. It is within generally accepted standards of dental practice for a dentist to advise a patient needing a root canal that he may also treat the condition by extracting the tooth.

90. The dentist performing a root canal first cleanses it to disinfect the tooth and removes as much bacteria as possible; excavates the tissue from the center of the tooth and cleanses again; and then fills the canal with a latex-based material with wax and a sealer.

91. Respondent believes that endodontically-treated teeth are a health hazard because chemicals come out of the tooth and get into the body. Extraction is the only safe option in Respondent's view. The Huggins Center's extraction of

endodontically-treated teeth thus is not related to the mercury toxicity theory in relation to amalgams, as mercury is not placed in the process of a root canal.^{28/}

Scientific Basis for Respondent's Theories Regarding Endodontically-Treated Teeth

92. Respondent's theories in relation to endodontically-treated teeth are based on his own experience and the studies performed by Dr. Weston Price, a dentist, in the early 1900s. Price concluded that it was impossible to sterilize the root canal and that the wax used to replace the nerve shrinks and allows the growth of bacteria and infection. Price's studies involved injecting the ground up root canal teeth from persons with kidney and heart disease or bacteria cultured from the dentinal tubules into rabbits. He discovered that the rabbits acquired the same kidney and heart disease.

93. Price's theories were developed at a time when the focal infection theory was given credence. Pursuant to this theory, a localized infection of endodontically-treated teeth could produce a secondary infection elsewhere in the body and cause systemic diseases. This theory has been refuted^{29/} and later studies have been unable to duplicate the bulk of Price's results. There is no credible scientific evidence that infection from a failed root canal can spread through the bloodstream to cause chronic diseases, systemic diseases or autoimmune diseases.^{30/}

94. Respondent also relies in part on studies performed by Haley in 1995. Haley performed a preliminary study on root canal teeth in which he made a solution with ground periodontal ligament from root canal teeth and added this to animal brain. He then observed a total inhibition of the ability of the protein to react with nucleotides. Haley concluded that this periodontal ligament contains toxic proteins which impede the reaction of nucleotides with creatine kinase, which could cause the cells to die. Based on his research, Haley makes no treatment recommendations other than for patients to determine with their dentists if their root canals are infected.

95. Haley's preliminary studies do not provide scientific support for Respondent's theories.^{31/}

96. Approximately 13 million root canals are performed each year, and this procedure is considered very safe with a success rate of 90%. In the 10% of root canals which are not successful, a localized infection characterized by pain, swelling of the lymph nodes and fever develops.

97. Generally accepted standards of practice require dentists to preserve all asymptomatic endodontically-treated teeth. The American Association of Endodontists supports this position. By routinely extracting asymptomatic

endodontically-treated teeth to treat mercury toxicity or medical diseases, Respondent failed to meet these generally accepted standards of practice.

False Representations by Respondent Endodontically-Treated Teeth

98. In his publications, Respondent represents that root canals may cause an autoimmune response. He states that "[a]utoimmune diseases in particular can be very responsive to the removal of teeth that have had root canal procedures." Respondent's representations as to the efficacy of the extraction of root canal teeth in treating autoimmune disease are misleading, deceptive and false.

Scientific Basis for Respondent's Theories Regarding Cavitations

99. The treatment of cavitations is a standard protocol at the Huggins Center when endodontically-treated teeth are extracted. In general terms, Respondent does a surgical extraction of the root canal with the stated purpose of removing toxins from the periodontal ligament space. Respondent explains that when a tooth is removed, periodontal ligament is left within the bone. He likens this to the afterbirth. The top portion of the socket heals over with bone, and below that, in Respondent's opinion, is a space containing pathological fragments of bone which never heals and which needs to be cleaned out. To treat this cavitation, the Huggins Center drills through the 2-3 mm of bone into the space below to remove periodontal ligament and 1 mm of dense bone. Respondent's stated purpose in surgically exploring cavitations is to remove pathological tissue.

100. Respondent has treated patients with both Parkinson's disease and ALS by surgically excavating their cavitations.

101. When asked to present the scientific basis for his theories on cavitations, Respondent supplied only a study which refers to neuralgia in the face and is not related to the cavitation issue. Dr. George Meinig, a general dentist, does advocate removal of one millimeter of the bony socket left after extraction of a tooth to eliminate any residual toxins from the area and to promote bone growth. Meinig's recommendations depend on the work of Price, whose studies are discussed above and found to be unreliable.

102. There is no reliable scientific basis for linking periodontal ligament to any systemic or autoimmune disease, neuralgia, ALS, Parkinson's or any of the other diseases treated by the Huggins Center.

103. Dentistry does recognize the need to surgically excavate cavitations of painful lesions in some patients,^{32/} but this is not done to treat any systemic disease and was not the basis for treatment at the Huggins Center.

104. By performing surgical excavations of cavitations in order to treat Parkinson's disease, MS, ALS and other diseases when there is no credible scientific basis or clinical justification, Respondent has failed to meet generally accepted standards of dental practice.

105. Respondent's surgical excavation of cavitations could result in possible harm to patients, including loss of function, nutritional problems, occlusal problems and TMJ (temporomandibular joint) pain. Without exploration of the cavitation, the normal healing process is effective.

False Representations of Respondent Regarding Cavitations

106. Respondent has made a number of representations in his book, publications, or videos in relation to cavitations which are misleading, deceptive, and false:

a. In his book, Respondent represents that ALS patients respond to the surgical excavation of their cavitations, such that some ALS patients who received early treatment experienced an 18- to 36-month increase in life expectancy.

b. Respondent indicates that he studies biopsies of autoimmune disease: "Recently in my studies . . . we were looking at biopsies of the bone under the root filled teeth that we had removed. The lymphocytes of autoimmune disease were embedded at least a millimeter into the bone, and sometimes more. All this must be removed if good bone healing is to be achieved." It is not possible to look at biopsies of autoimmune disease because if lymphocytes are seen, one cannot determine if they are helpful or harmful or related to autoimmune disease.

c. Respondent also indicates that bone tissue biopsies on the bone immediately adjacent to a root canal-filled tooth frequently show "lymphocytic cells of chronic long-term immune challenge" which are "suggestive of a nidus of autoimmune disease." The theory that autoimmune disease is caused by a remote focus of infection is an old and discredited notion.

IV. Huggins Center Diagnosis of Mercury Toxicity

107. The proper diagnosis of mercury toxicity measures mercury levels in urine and blood.

108. Respondent's techniques for diagnosis of mercury toxicity, as discussed below, have no clinical justification.

109. Generally accepted standards of practice require dentists to use diagnostic tests which have clinical justification and prohibit dentists from treating patients without a clinical justification.

Diagnosis -- Questionnaire

110. As a part of his diagnosis of mercury toxicity, Respondent uses a mercury toxicity questionnaire involving approximately 500 very general questions which are not connected to mercury toxicity and which have no diagnostic value. For example, the questionnaire inquires whether a patient has ever experienced emotional irritability, but this is not a sign or symptom of mercury toxicity.

111. Respondent's representations in his publications regarding the efficacy of the mercury toxicity questionnaire in the diagnosis and treatment of mercury toxicity are misleading, deceptive and false.

112. There is no clinical justification for Respondent's use of the mercury toxicity questionnaire in diagnosing mercury toxicity. Respondent's use of this questionnaire thus fails to meet generally accepted standards of dental practice.

Diagnosis -- Blood Chemistries

113. As a part of the diagnosis of mercury toxicity, the Huggins Center has a patient's blood tested for an array of substances. These substances include, for example, white blood cells, red blood cells, platelets, lymphocytes, sodium, potassium, chloride, glucose, and calcium.

114. A central principle used in diagnosis and treatment at the Huggins Center is the balancing of blood chemistries. This principle is based on the assumption that there is an optimal or ideal value for certain substances in the blood which maximizes bodily efficiency and is applicable to all persons. The farther away a patient's value for a particular substance is from this optimum, the sicker that person is.

7 | 115. The Huggins Center uses a local hospital to perform the blood chemistries. The hospital follows the standard and appropriate procedure of reporting back to the Center a normal reference range for each substance which reflects a variation of two standard deviations on a bell curve. A reference range reflects the range of values which normal healthy people have; the appropriate range encompasses 95% of the population.

→ | 116. Before using these hospital test results, Respondent superimposes his own Body Chemistry Index ("BCI") on the values found to establish a narrower

reference range of one standard deviation. In doing so, he narrows the band of "healthy" people from 95% to 67% of the population. By using this narrower BCI range, Respondent represents that those 28% who fall outside of one standard deviation but within two standard deviations are sick, when in fact they are healthy.

117. Respondent's use of the narrower BCI Index provides no scientific basis to diagnose or treat patients and has no clinical justification. It thus fails to meet generally accepted standards of dental practice.

118. Respondent's use of the BCI Index also fails to account for the genetic variability in the population. The mean value is not necessarily the optimal value, as optimal values for different individuals may vary for genetic reasons. The adjustments prescribed by Respondent could thus cause harm if his treatment moves an individual away from that individual's optimum to a different universally-established value.

119. Respondent has made a number of representations in his book, publications, or videos in relation to the balancing of body chemistries which are misleading, deceptive, and false:

a. Respondent's use of the narrower BCI Index to diagnose and treat mercury toxicity and to suggest that healthy patients are in fact sick has no scientific basis.

b. Respondent represents that "[e]ach individual has a 'balance' point of the concentrations of blood components that allows his/her body to function at maximum efficiency." Neither dentistry nor medicine recognizes such a balance point.

Diagnosis -- Lymphocyte Viability Testing

120. The Huggins Center also relies on lymphocyte viability testing to diagnose mercury toxicity and track patient progress. Respondent indicates that this test measures the ability of the body to handle immune challenges, since a lower number of live lymphocytes indicates fewer "fighting soldiers" for the immune system. This test involves counting the number of live lymphocytes in the blood.

121. The number of live lymphocytes does not correlate with good health. When lymphocytes begin to fail, the body has a sophisticated mechanism to remove them quickly. Even in patients who are sick, 95% lymphocyte viability is predictable. This test has no medical diagnostic value or clinical justification and is used only in research. In addition, the test results are significantly influenced by the lapse of time between when the blood is drawn and when the test is conducted. If a lower

lymphocyte viability is shown, it may well reflect that lymphocytes have died in the test tube after the blood was drawn from the patient.

122. Respondent's representations in his publications regarding the efficacy of lymphocyte viability testing in the diagnosis and treatment of mercury toxicity are misleading, deceptive and false.

123. Respondent's use of lymphocyte viability testing in the diagnosis and treatment of mercury toxicity has no clinical justification and thus fails to meet generally accepted standards of dental practice.

Diagnosis -- Co-Oximetry Testing

124. Respondent performs co-oximetry tests to determine the amount of oxygen available to the patient by measuring the percentage of hemoglobin saturation. Respondent believes that the majority of his patients suffer from chronic fatigue attributable to an inadequate oxygen transport system which develops when mercury binds to the sites where oxygen should bind and those sites then cannot carry oxygen.

125. Co-oximetry testing measures the amount of hemoglobin, oxyhemoglobin, carboxyhemoglobin, methemoglobin and oxygen in the blood. It indicates nothing about mercury poisoning. There is no credible scientific evidence supporting Respondent's theory that mercury in the blood displaces the oxygen binding sites of hemoglobin.

126. Respondent's representations in his publications regarding the efficacy of co-oximetry testing in the diagnosis and treatment of mercury toxicity are misleading, deceptive and false.

127. Respondent's use of co-oximetry testing in the diagnosis and treatment of mercury toxicity has no clinical justification and thus fails to meet generally accepted standards of dental practice.

Diagnosis -- Hair Analysis

128. As a part of his diagnosis of mercury toxicity in patients, Respondent uses hair analysis. Respondent believes that hair is an excretory mechanism for heavy metals and an appropriate detector for toxic metals. In fact, the kidney excretes mercury.

129. Hair analysis is not effective in diagnosing mercury toxicity. It is significantly less accurate than blood tests and reflects mercury from external

sources such as the mercury commonly contained in shampoos. Mercury binds to proteins and hair is a protein, so the presence of mercury in hair does not mean that it came from inside the body. Hair analysis has no valid diagnostic purpose other than for arsenic poisoning.

130. Respondent's representations in his publications regarding the efficacy of hair analysis in the diagnosis and treatment of mercury toxicity are misleading, deceptive and false.

131. Respondent's use of hair analysis without clinical justification fails to meet generally accepted standards of dental practice.

V. Huggins Center Treatment


Treatment -- Serum Compatibility Testing

132. Generally accepted standards of dental practice require dentists to use only treatments which are clinically justified and which are within the scope of dentistry.

133. Respondent designed the serum compatibility test to determine which materials to use in composite fillings to replace the amalgam fillings removed by the Huggins Center. He represents that the test shows the materials to which an individual's immune system is least reactive and thus which should be used in the composites. He has used this test from at least July 1986 through July 1995 and requires it of all patients.

134. The serum compatibility test is a precipitin test in which a patient's serum is mixed with a number of chemical compounds. A technician then measures changes in optical density (*i.e.*, cloudiness). These changes occur when proteins stick together such as when heavy metals bind to protein. These changes can also be attributed to an immunologic reaction of an antibody and an antigen. The blood has at least 100 different kinds of proteins, all of which would precipitate in the presence of heavy metals without suggesting any immunological reaction. It is predictable that mercuric chloride, the mercury challenge material used by Respondent, would precipitate proteins. In addition, cellulose, another of the challenge materials used, is itself insoluble such that it will produce cloudiness on its own.

135. Respondent has made a number of representations in his book, publications, or videos in relation to serum compatibility tests which are misleading, deceptive, and false:




a. Based on the results of 3,500 serum compatibility tests, Respondent represents that over 90% of the population is immune reactive to low levels of mercury. Immune reactivity implies a process carried out by a known immune mechanism. Respondent's former laboratory director Swartzendruber agrees that the serum compatibility test cannot be used to prove that over 90% of the population is immunologically hypersensitive to mercury. There is no scientific basis for this claim. Since the serum compatibility test does not necessarily measure an immunological reaction and there was no control, Respondent's representations in this regard are misleading, deceptive, and false.^{33/}

b. Respondent represents that mercury triggers an immune system response in the body which causes the development of an antibody. He states that if an antigen is then introduced, it can attach to the antibody and form an immune complex, which can be measured by the serum compatibility test. Respondent refers to the serum compatibility tests as an "immunologic test to determine what percentage of the population was immune-reactive to the toxic substances found in dental amalgam." Respondent claims that this test "actually measures IgM, IgA and IgG [families of serum antibodies produced by B cells] blood serum immune reactions." Respondent's serum compatibility test, however, is not an immunologic test, as he represents, and it cannot measure these antibodies.

c. Respondent represents that before having amalgams removed, a patient must have a serum compatibility test so that the "placement fillings will not cause [him] more damage than [his] amalgam fillings." The serum compatibility test provides no scientific basis to determine which materials will react with the immune system and which will not.

136. Respondent's serum compatibility test has no clinical relevance or justification. Even after admitting that the test does not necessarily disclose immune system reactivity to the challenge material, Respondent claimed that a positive test shows that the challenge material is bioincompatible with the serum. To establish the clinical relevance of a test, one must test both healthy and sick patients, with and without amalgams, in a blinded fashion to show that a positive result correlates with illness and a negative result correlates with health. Respondent has not done this. Respondent's use of the serum compatibility tests thus fails to meet generally accepted standards of dental practice.



137. Only three laboratories in the United States perform serum compatibility tests using Respondent's or a similar protocol. These are the Huggins Laboratories, Compat (a laboratory owned by Respondent's son), and Clifford Laboratories, owned by Respondent's former laboratory director.^{34/}

138. Respondent receives income of at least \$300,000 a year from serum compatibility testing alone.

Treatment -- Bubble Operatory

139. All dental procedures at the Huggins Center are performed in a Bubble Operatory, a sphere-shaped room within a larger room with a number of special features.

140. Respondent has made a number of representations in his book, publications, or videos or to patients in relation to the bubble operatory which are misleading, deceptive, and false:

a. Respondent represents that the Bubble operatory is effective in the treatment of mercury toxicity. He states as follows: "Now that I am into the second- and third-generation bubble-op, I am observing healing that is beyond what I saw in conventional dental offices." There is no scientific basis for this claim.

b. Respondent represents that an "advanced system uses charged plates to attract and collect mercury vapor. This system efficiently removes even minute sources of contamination from the operatory atmosphere." This system involves a negative ion generator which is said to charge particulates in vapor which are then collected by pads on the other side. Mercury vapor is uncharged, so the collector does not remove it. In addition, the collector is on the ceiling, and since mercury vapor is heavier than air, it would collect near the floor, not the ceiling.

c. Respondent represents that the Faraday cage (*i.e.*, an electrical containment device made from conductive screening which normally protects sensitive instruments) "surrounds the operatory to minimize electromagnetic sources that might adversely affect you during removal procedures." He also indicates that it protects patients from dangerous radiation and implies that it provides superior care. The bubble operatory itself, however, contains electrical lights, an x-ray viewbox and an electric precipitator which generate active current and negate any effect of the Faraday cage. In addition, there is no scientific evidence that the Faraday Cage has any bearing on the dentistry performed in the Bubble Operatory.

d. Respondent represents that curved walls are a special feature of the Bubble Operatory: "[a] highly purified source of air is provided by efficient filtration systems ensuring a constant replenishment of uncontaminated air. Curved walls aid this flow." The air moves vertically and not in a circular motion, so curved walls have no bearing on this movement of air. In addition, the Bubble Operatory is cluttered with counters, shelving and dental equipment which block the air flow.

Treatment -- Sequential Removal of Amalgams

141. Sometime after Respondent began removing amalgams to treat mercury toxicity, he concluded that this procedure was significantly more successful if he removed first the amalgams from the quadrant of the mouth having the highest negative electrical readings, then the second highest and eventually any quadrants with positive charge. Based on his own experience, Respondent then established a protocol whereby amalgams were removed sequentially based on their negative charge.

142. Respondent uses an ammeter purportedly to record the electrical current transmitted from fillings by touching the ammeter to the filling and putting the ground to soft tissue of the cheek or under the tongue. Respondent believes that high negative current generally results in more chronically ill patients.

143. Respondent's theories regarding the electrical current discharged by amalgams rely extensively on his own experience.

144. The electrical readings taken by the Huggins Center are not reliable readings of what they purport to measure. While Respondent purports to find both negative and positive currents, there is significant question as to whether current can be positive. In addition, because the mouth is not isolated from the saliva, the reading cannot measure the electrical current of the filling alone. The FDA disapproved the amalgameter for human diagnosis and treatment some time ago, and the ammeter currently used by Respondent has the same inherent problems.

145. There is no correlation between the electrical measurements taken by the Huggins Center and any disease. There is no scientific support that electrical current from amalgams affects the body function or is related to disability.

146. In a videotape, Respondent represents that his success rate jumped from 10% to 50% once he began sequential removal of amalgams and that with sequential removal, the patient will have "a reasonable chance of getting well." Respondent admits that he does not know the scientific basis for sequential amalgam removal. There is no scientific basis for Respondent's theory that removal of amalgams by quadrant has any effect on the body. Respondent's statements regarding the efficacy of sequential removal of amalgams are misleading, deceptive, and false.

Treatment -- Supplements

147. The Huggins Center, through nutritional counselors, provides nutritional supplements which are designed to decrease the values which are above the BCI

range and increase those which fall below it. Respondent begins supplements for patients even before amalgam removal. Respondent considers nutrition to be the most important component in restoring the body from the "ravages of mercury toxicity."

148. These biochemical supplements include Trans-Mix, Eaters Digest, X-IT, and Jogger Juice. They are either distributed by a company Respondent owns or are referred to other manufacturers to make according to Respondent's formulas.

149. Respondent has made a number of representations in his book, publications, or videos in relation to supplements which are misleading, deceptive, and false:

a. Respondent represents that the supplements will alter damaged cell membranes to allow nutrients and oxygen to enter the cells better and to allow toxic metals (including mercury) and chemicals to exit. He states that "supplementation seems to condition the body to excrete unwanted mercury and to begin tissue repair."

b. Respondent represents that the supplements are necessary to balance body chemistries, but the supplements cannot change the normal blood electrolytes and agents which Respondent measures. These are regulated by body processes which have nothing to do with the supplements which are being given.

b. Respondent represents that Jogger Juice increases venous oxygen, energy levels and brain power. Respondent also states that it alters the cell membrane permeability (*i.e.*, the ability to control what goes in and out of the cell) and is effective in treating mercury toxicity.

c. Respondent represents that the results of the supplements vary but include increases in energy, endurance, stamina; improved sleep patterns; lower cholesterol levels; better digestion; greater clarity of thought; better memory function; higher tolerance in coping with anxiety, anger, and depression; and greater resistance to colds, flu and other illnesses.

150. In 1985 the FDA notified Respondent that his claims that there is substantial scientific evidence to establish that X-IT and Eaters Digest were safe and effective in the treatment of mercury toxicity and that Jogger Juice was safe and effective in increasing venous oxygen, aiding endurance and energy levels, and brain power were false and misleading. Respondent agreed to change his representations to meet the FDA's concerns.

151. Respondent's use of these supplements to treat mercury-toxic patients has no clinical justification and is not within the practice of dentistry. Respondent has thus failed to meet generally accepted standards of dental practice.

Treatment -- Intravenous Vitamin C

152. The standard treatment offered at the Huggins Center includes megadoses of Vitamin C administered to patients intravenously. A patient is placed in an "IV Room" before his amalgams are removed and a nurse gives the patient an IV with a large dose of Vitamin C, as well as a small amount of ethylene diamine tetracetate acid ("EDTA"). It is well-accepted that when a dentist uses a high-speed drill to remove an amalgam filling, a spray of mercury occurs. The Huggins Center uses a rubber dam (a thin piece of rubber to semi-isolate teeth from the mouth) to minimize this mercury exposure. The Huggins Center uses the Vitamin C for the stated purpose of enhancing post-surgical healing and adds EDTA to bind to the mercury absorbed into the bloodstream in the removal process in order to excrete it through the urine. Respondent developed the ingredient guidelines for the intravenous administration of Vitamin C.

153. Administration of intravenous Vitamin C with EDTA to a mercury-toxic patient to bind mercury is both ineffective and contraindicated. There is no credible scientific evidence that EDTA binds mercury in humans. EDTA does not bind mercury. Rather, it binds lead and carries it to the kidney, where it could pose at least a theoretical hazard. In addition, the massive doses of Vitamin C used by the Huggins Center could cause possible kidney stones if a mercury toxic patient is suffering kidney dysfunction.

154. Because there is no clinical justification for the use of Vitamin C and EDTA and their use is not within the scope of dentistry, Respondent's use of this therapy fails to meet generally accepted standards of dental practice.

155. Generally accepted standards of dental practice require a dentist to provide constant monitoring of the administration of an IV. The risks of a lack of monitoring of high doses of Vitamin C, combined with EDTA, include sudden cardiac arrest and the disconnection of the IV creating an air embolism, a medical emergency where air from the intravenous tubing goes to the heart, causes a clot, and stops the heartbeat.

156. The Huggins Center does not provide constant monitoring of patients in the IV Room. Rather, nurses come and go from the IV Room to monitor patients on an intermittent basis. The Center provides each patient with a bell to ring if there is any untoward reaction or if the patient notices another patient in distress. This practice thus fails to meet generally accepted standards of practice.

157. Generally accepted standards of dental practice require when medication is administered intravenously, a record be made of the location, duration, rates of infusion, and the personnel placing the lines. The Huggins Center routinely failed to record such information and thus failed to meet generally accepted standards of practice. Respondent testified that the standard rate of infusion was 45 drops per minute and that only variations from this rate were noted, but this failure to record the actual rate of infusion does not meet generally accepted standards of practice.

Treatment -- Vitamin C Flush -

158. The treatment protocol at the Huggins Center includes a Vitamin C flush. This treatment involves administration of megadoses of Vitamin C to create a short-term diarrhea with a stated purpose of flushing out bacteria in the intestinal tract which have been altered by mercury from dental amalgams, which in Respondent's view includes methyl mercury.

159. Respondent represents in his publications that "[m]ercury in the ultradangerous form called methyl mercury can recycle through the intestinal tract." This implies that methyl mercury is absorbed and can be re-excreted into the gastrointestinal tract and recirculated. There is no evidence that mercury methylates in the mouth, that methyl mercury recycles, or that Huggins Center patients were exposed to methyl mercury. Respondent's representations that Vitamin C flushes are effective for mercury toxicity are thus misleading, deceptive and false.

160. The administration of Vitamin C flushes to patients at the Huggins Center is not within the scope of dentistry and lacks clinical justification. Respondent's use of Vitamin C flushes thus fails to meet generally accepted standards of dental practice.

Treatment -- Insulin, Lithium, Thyroid, Posterior Pituitary Extract

161. Respondent and the Huggins Center also administer Protamine Zinc Insulin ("PZI") to patients for the stated purposes of treating mercury toxicity by minimizing the withdrawal effects when removing amalgams, drastically increasing healing, and reducing the need for pain medications. These stated withdrawal effects include suicidal ideation, and Respondent represents that the use of PZI has "pretty well prevented" such ideation. Center personnel generally administer PZI by a subcutaneous injection in the mouth.

162. There is no credible scientific evidence for the use of insulin for the purposes stated by Respondent. There is no clinical justification for the use of insulin

in dentistry. The use of insulin is outside the scope of dentistry. Respondent's use of PZI thus fails to meet generally accepted standards of dental practice.

163. Respondent prescribes lithium to Huggins Center patients to "balance their chemistries." Respondent represents that lithium increases cell membrane permeability.

164. Respondent admits that there is no scientific evidence supporting his contentions in relation to lithium but relies on his experience. There is no clinical justification in dentistry for the use of lithium. The use of lithium is not within the scope of dentistry. Respondent's use of lithium thus fails to meet generally accepted standards of dental practice.

165. In addition, the use of lithium must be accompanied by blood level monitoring. Lithium is a dangerous psychotropic drug which is used to decrease the frequency of maniacal attacks associated with manic depressive disorder. It has a narrow therapeutic index (i.e., the difference between the range of therapy and toxicity is narrow). The possible adverse effects of lithium include cascade neurological toxicity, seizures, kidney problems, a host of neurological abnormalities, and abortions in females. Respondent's administration of lithium to patients without monitoring had the potential risk of causing lithium toxicity.

166. Respondent and the Huggins Center administer thyroid to patients for the stated purpose of balancing their chemistries when their serum phosphorous levels or body temperatures are low. There is no clinical justification for the use of thyroid. In addition, the use of thyroid falls outside the scope of dentistry. Respondent's use of thyroid thus fails to meet generally accepted standards of dental practice.

167. Respondent and the Huggins Center administer posterior pituitary extract to patients. Respondent represents in his book that mercury interferes with the production and action of this hormone and that "getting up at night to urinate" is the result of insufficient action of the posterior pituitary hormone. These statements are misleading, false and deceptive.

168. Respondent uses posterior pituitary extract for the stated purposes of balancing the serum phosphorous level and inhibiting dental decay. There is no clinical justification for the use of posterior pituitary extract in dentistry. In addition, the use of posterior pituitary extract falls outside the scope of dentistry. Respondent's use of posterior pituitary extract thus fails to meet generally accepted standards of dental practice.

Treatment -- Massage, Sauna, Acupressure, Feldenkrais

169. The Huggins Center uses a number of non-dental therapies to treat its patients, including massage, sauna, acupressure, and Feldenkrais:

a. Respondent represents that both massage and sauna help remove toxins from the body. Respondent represents that the sweating produced by a sauna aids is a normal excretory mechanism of the body and removes mercury. The Huggins Center uses sauna only after amalgam removal, not prior, because in Respondent's view its prior use would emit too much mercury vapor. Respondent admits that there is no scientific evidence supporting his contentions in relation to sauna but relies on his experience. There is no scientific evidence that mercury is eliminated from the body through perspiration. It is generally eliminated by the kidneys, not the skin.

b. Respondent further represents that massage helps balance white blood cells and calcium metabolism. There is no scientific basis to support this claim.

c. Respondent uses acupressure immediately after dental procedures with the stated purpose of greatly reducing the need for pain medications and increasing patient comfort. There is no scientific basis to support this claim.

d. Respondent describes Feldenkrais as a body discipline similar to physical therapy which reintroduces the muscular system to the nervous system. Respondent uses it after dental procedures to stimulate muscles not previously responding to mental commands. He believes it aids MS patients in particular. There is no scientific basis to support these claims.

170. There is no clinical justification for the use of Feldenkrais, acupressure, massage or sauna in treating mercury toxicity. These therapies are outside the scope of dentistry, and Respondent's use of them is therefore below generally accepted standards of dental practice.

171. Respondent's representations in his book, publication and videos in relation to the efficacy of massage, sauna, acupressure and Feldenkrais in the treatment of mercury are misleading, deceptive and false.

Treatment -- Retention Toxicity

172. In his practice, Respondent has identified and named a phenomenon which he describes as "retention toxicity." Pursuant to this theory, a person excreting low levels of mercury in his urine is retaining mercury in the body and is severely ill.

Retention toxicity thus refers to persons who are mercury toxic because of their inability to excrete mercury and indicates chronic illness.

173. Respondent bases his retention toxicity theory on his observations of patients who had few health problems until they received amalgam fillings and when those were removed, excreted more mercury and their symptoms improved.

174. There is no valid scientific basis for Respondent's theory of retention toxicity. The excretion of a small amount of mercury does not indicate mercury toxicity. Rather, low excretion indicates a low body burden of mercury. A patient with normal kidney function excretes more mercury the more he has on board. The fact that urine mercury levels indeed increase after amalgam removal is due to the removal process, which causes transient exposure from the grinding and displacement of the mercury, and not to an enhanced ability to excrete mercury.

175. By diagnosing patients with retention toxicity and providing treatment based on that theory, when there is no clinical justification for it, Respondent has failed to meet generally accepted standards of dental practice.

176. Respondent has made a number of representations in his book, publications, or videos in relation to retention toxicity which are misleading, deceptive, and false:

a. In his publications, Respondent credits amalgam removal with a beneficial 100% increase in urine mercury output.

b. In his book, Respondent indicates that amalgams cause an inability to excrete mercury.

Treatment -- Immune Cycle

177. The Huggins Center schedules patient treatment based on a "seven-fourteen-twenty-one day immune cycle." In Respondent's view, day one represents an immune system challenge such as the replacement or removal of amalgam. Thereafter, on the seventh, fourteenth and twenty-first days, the patient experiences flu-like symptoms. On the twenty-first day, if there is additional immunological challenge, the patient may develop serious autoimmune disease due to the cyclical dying off of the white blood cells.

178. Based on this cycle, the Huggins Center schedules patients to avoid treatment on the "low defense" days.

179. There is no scientific basis for a "seven-fourteen-twenty-one day immune cycle." This makes no scientific sense and is not recognized in immunology, despite Respondent's assertion that there are over one hundred articles on this immune cycle. Respondent's use of this cycle thus fails to meet generally accepted standards of practice.

Treatment -- Informed Consent

180. Respondent's normal office procedure is to have Huggins Center personnel obtain a written informed consent from patients before undertaking treatment. It is the standard procedure at the Huggins Center to have prospective patients sign a financial agreement which commits them to pay for services at the Center before they arrive for treatment. Statements of informed consent are obtained at a later time after the patient arrives at the Center.

181. Generally accepted standards of practice require dentists to obtain a patient's informed consent to treat before treating the patient.

182. Patients cannot consent to the dental treatment of mercury toxicity or medical disorders not within the scope of dentistry. They further cannot consent to treatment which harms them. Patients thus cannot consent to the removal of their amalgams based on concerns about mercury toxicity. Generally accepted standards of dental practice do allow a dentist to remove fillings for a number of reasons, including aesthetics, but not to eliminate mercury from a patient's mouth.

183. The Huggins Center failed to obtain informed consent from the eight patients identified below and thus failed to meet these generally accepted standards of practice.

Treatment -- Dental history, examination, and treatment plan

184. Generally accepted standards of dental practice require dentists to document a detailed dental history, a complete dental examination, and a treatment plan. The examination of the dental patient must be thorough with charting of existing situations, medical history and an outline of the treatment after discussion with the patient. For instance, the surface of the tooth being treated must be noted, and the dental records must show a dental purpose for the dental work. The treatment plan cannot be predetermined before any dental examination is conducted.

185. The Huggins Center failed to document detailed dental histories, complete dental examinations, or treatment plans for the eight patients identified below. The surfaces of the teeth were not noted, no dental purpose was apparent,

and the treatment was predetermined. The Huggins Center thus failed to meet these generally accepted standards of practice.

VI. Individual Patients of the Huggins Center

Patient D.A.

186. In 1991 D.A., a 33-year-old female suffering from MS, sought treatment from the Huggins Center. She attended the Huggins Center in-office program from April 30, 1991, through May 9, 1991, and received numerous medications and supplements on an outpatient basis through August, 1991.

187. When D.A. went to the Center, she was confined to a wheelchair and could not walk. She indicated that she wanted to be able to walk and use her hands, which were numb and stiff. At the beginning of her two-week stay at the Huggins Center, D.A. had an interview with Respondent and Denton. They told D.A. they believed they could help her MS. Neither tried to discourage D.A.'s belief that she could walk again, and Respondent even urged her to include in her Center videotape the fact that her son wanted her to sell her wheelchair.

188. D.A.'s teeth were in good condition prior to her treatment.^{35/}

189. The results of the blood chemistry performed by the Center on D.A. provide no basis to conclude that she was ill or that her chemistries needed to be adjusted. D.A.'s kidney tests were completely normal, and her urine mercury level was normal. She had no symptoms consistent with mercury toxicity.

190. The Huggins' Center diagnosis and treatment of D.A. failed to meet generally accepted standards of dental practice as follows:

a. The Huggins Center diagnosed D.A. as being mercury toxic. Denton indicated that D.A. was "seen in our office for treatment of heavy metal toxicity as related to exposure to mercury from dental fillings and other common sources of exposure. It is my medical opinion that this patient's health problems stem from this cause." In fact, D.A.'s urine mercury testing was normal, there was no clinical justification for her diagnosis, and she was not mercury toxic.

b. The Huggins Center also represented to D.A. that her mercury toxicity caused her MS. The diagnosis of D.A. as mercury toxic and the Huggins Center's treatment of this condition, as well as D.A.'s MS, were beyond the scope of dental practice. The Huggins Center was required by generally accepted standards of practice to refer D.A. to a physician qualified to treat these conditions but failed to do so.

c. The tests and treatments administered to D.A. for the purpose of diagnosing and treating her "mercury toxicity" and MS were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximetry testing, hair analysis and lymphocyte viability testing.

d. The Huggins Center removed D.A.'s amalgam fillings, crowns and a root canal tooth without clinical justification. The removal of D.A.'s amalgams and the extraction of her root canal tooth without clinical justification are extreme departures from generally accepted standards of dental practice and constitute grossly negligent dental practice.

e. In the process of extracting D.A.'s tooth, the Huggins Center surgically explored the cavitation. There was no clinical justification for this treatment. The surgical exploration of D.A.'s cavitation without clinical justification is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent dental practice.

f. The Huggins Center prescribed oral lithium carbonate for D.A. There was no clinical justification for the prescription of lithium to D.A. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent dental practice. In addition, the Huggins Center did no monitoring of the prescription of lithium to D.A.

g. The Huggins Center treated D.A. with PZI. Huggins Center personnel prescribed insulin to D.A. for its "known antibiotic-like effects" to help control her "urinary symptoms," presumably her tendency to get urinary tract infections. Insulin in fact has no antibiotic effect and is used rather to get glucose inside the cells of diabetics. Insulin has no acceptable medical use for non-diabetics such as D.A. There was no clinical justification for the use of insulin for D.A. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

h. There was no clinical justification for the dietary supplements and vitamins administered and prescribed to D.A. The Huggins Center prescribed oral Vitamin C and zinc for D.A.'s tendency toward urinary tract infections but neither has a salutary effect on urinary tract infections or mercury toxicity.

i. Huggins Center personnel advised D.A. to stop taking Macrochantin before coming to the Center. Macrochantin is an antibiotic which many MS patients use at a suppressive dose to prevent the frequent urinary tract infections to which they are prone. The Huggins Center recommendation to stop taking antibiotics was made pursuant to a protocol developed by Respondent to stop taking

any antibiotics three weeks before the serum compatibility test. Within two days after discontinuing Macrochantin, D.A. developed a urinary tract infection, which was evident on her urinalysis but was not properly treated at the Center. If left untreated, this infection could have led to sepsis^{36/} and possibly D.A.'s death. The advice to discontinue Macrochantin under these circumstances constitutes a failure to meet generally accepted standards of dental practice.

j. There was no clinical justification for the oral posterior pituitary extract prescribed to D.A. Pituitary extract is not used for either mercury toxicity or urinary tract infections. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

k. There was no clinical justification for the Vitamin C flush administered to D.A. In D.A.'s case this treatment also exposed her to the risk of a recurrence of a urinary tract infection. In a purge therapy involving a large flux of fluids through the body, a person can become dehydrated, thus increasing the risk for urinary tract infections. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

l. There was no clinical justification for D.A.'s Vitamin C intravenous treatment, which included EDTA. The Huggins center staff administered Vitamin C to D.A. for its antibiotic effect. While Vitamin C can acidify urine and reduce the number of bacteria, it is not an antibiotic. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, the Huggins Center did not continuously monitor the administration of Vitamin C and EDTA to D.A. D.A. in fact experienced a problem with her arm swelling and a burning sensation during the course of her intravenous Vitamin C treatment, and her husband had to track down a nurse. The Center further failed to make a record of the location, duration, rates of infusion and the personnel placing the intravenous lines.

m. D.A. received treatments including Feldenkrais and acupressure which are not clinically justified or within the scope of dentistry.

n. On May 6, 1991, D.A. signed an informed consent indicating among other things that she was consenting to the replacement of defective amalgam fillings with biocompatible composite. Since D.A.'s amalgam fillings were not defective, this representation does not provide a basis for D.A.'s consent. In addition, D.A. signed her informed consent two days after treatment began, and the record does not support that any verbal informed consent was given prior. D.A. therefore did not provide timely consent and was unable in any case to consent to the Center's treatment of her alleged mercury toxicity and her MS.

o. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for D.A.

191. In relation to D.A. and each of the other seven patients, the Board has charged that the Huggins Center failed to meet generally accepted standards of practice by failing to record the dosages of all medications. The record is insufficient to support this allegation in relation to any patient.

192. The treatment given to D.A. and to other patients at the Huggins Center caused them harm. Every time a tooth is prepared, a dentist must remove more tooth structure than the filling itself and some trauma is inherent. This weakens the tooth and shortens its life. The composite materials used also have a significantly shorter life span than amalgams and thus must be replaced more quickly, necessitating additional preparations of the tooth.

193. The unnecessary extraction of a tooth also caused potential harm to D.A. and the other patients. Tooth extraction can cause traumatic injury whereby the healing process is compromised. It can also result in the lack of function, teeth erupting into the area, and periodontal problems. It also necessitates expensive restorative techniques.

194. At the end of her treatment at the Huggins Center, D.A. was videotaped. Although she was still in a wheelchair, she showed some minor improvement in the use of her left hand and her mobility. The level and duration of the improvement exhibited by D.A. does not suggest a connection of MS to dental amalgams. This improvement lasted for only a couple of weeks.

195. D.A. experienced no long-term improvement. She currently needs 24-hour help, uses a catheter, generally uses a feeding tube, has speech so impaired that she needs an interpreter, and has significant spastic movements. She and her husband now attribute what they believed to be initial improvement to the fact that they had no worries during the two-week stay and were surrounded by nice supportive people.

196. D.A. expended about \$6,000-7,000 for her care at the Huggins Center. In addition, she needed crowns and other dental work afterwards. The total cost for all work at the Huggins Center and afterwards was \$11,800.

Patient G.B.

197. G.B., a 44-year-old male suffering from MS, attended a portion of the Huggins Center in-office program from September 5, 1991, through September 11, 1991. At the time he sought treatment, G.B. was confined to a wheelchair, his right

hand was numb most of the time, and two fingers on his left hand were also numb. G.B. had tried a number of traditional and non-traditional MS treatments before coming to the Huggins Center, including the sequential removal of his amalgams. After seeing a television program featuring the Huggins Center, G.B. contacted the Center and talked to a patient representative, who refused to describe the treatment program until G.B. signed a financial agreement.

198. The Huggins Center urged G.B. to undergo the standard treatment for mercury toxicity, even though G.B. had no dental amalgams and thus no mercury toxicity even pursuant to the Center's theories. G.B. did have a root canal tooth, but this does not suggest the presence of mercury.

199. Respondent told G.B. that the Huggins Center success rate was 90%. Huggins Center staff also told G.B. not to be surprised if, after the removal of his tooth, they were videotaping him walking around the Center.

200. The Huggins Center treated G.B. by removing a root canal tooth and providing the accessory therapies. After he began treatments, G.B. came to the realization that the various treatments being offered were all ones he had previously tried without success. G.B. thus concluded that the treatment offered was a sham and left the Huggins Center without completing the treatment.

201. The Huggins Center diagnosis and treatment of G.B. failed to meet generally accepted standards of dental practice as follows:

a. The Huggins Center diagnosed G.B. as being mercury toxic. G.B. in fact had no amalgam fillings at the time he sought treatment from the Center. In addition, G.B.'s urine mercury testing was normal, there was no clinical justification for the diagnosis, and he was not mercury toxic.

b. The diagnosis of G.B. as mercury toxic and the Huggins Center's treatment of this condition, as well as G.B.'s MS, were beyond the scope of dental practice. The Huggins Center was required but failed to refer G.B. to a physician qualified to diagnose and treat these conditions.

c. The tests and treatments administered to G.B. for the purpose of diagnosing and treating his "mercury toxicity" and MS were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing.

d. G.B.'s root canal tooth was removed without clinical justification. The extraction of G.B.'s root canal tooth without clinical justification is an extreme

departure from generally accepted standards of dental practice and constitutes grossly negligent dental practice.

e. Huggins Center personnel advised G.B. to have his composite fillings (those which has replaced his amalgam fillings and were tested to be compatible) removed. There was no clinical justification for this advice, which G.B. declined to follow.

f. There was no clinical justification for the dietary supplements and vitamins administered and prescribed to G.B.

g. There was no clinical justification for the Vitamin C flush administered to G.B. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

h. There was no clinical justification for G.B.'s Vitamin C intravenous treatment, which involved a very high dose of Vitamin C and included EDTA and magnesium chloride. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. While Respondent testified that magnesium chloride is administered to promote hearing, it is contraindicated if one suspects mercury toxicity. In addition, no record was made of the location, duration, rates of infusion or the personnel placing the intravenous lines. During G.B.'s intravenous therapy, Huggins Center personnel only checked on G.B. periodically and did not provide continuous monitoring.

i. G.B. also received treatments including Feldenkrais and acupresure which are not clinically justified and are not within the scope of dentistry.

j. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for G.B.

k. The informed consent obtained by the Huggins Center from G.B. was ineffective because G.B. could not consent to this treatment.

202. G.B.'s health has deteriorated since his partial treatment at the Huggins Center. Not only has his MS deteriorated, but he has also been diagnosed with Lyme disease. He cannot walk. Although G.B. did not experience any improvement as the result of his treatment at the Huggins Center, Huggins Center staff repeatedly assured him that he was definitely improving.

Patient M.B.

203. M.B., a 45-year-old female suffering from chronic depression, attended the Huggins Center in-office program from June 14, 1989, through June 18, 1989. During this time, the Huggins Center removed M.B.'s amalgams and crowns. She returned for further treatment on December 6 and 7, 1989, although the record does not clearly disclose the nature of this additional treatment. The Huggins Center did, however, prescribe supplements for M.B. after July 1, 1989.

204. The Huggins Center diagnosis and treatment of M.B. failed to meet generally accepted standards of dental practice as follows:

a. The Huggins Center diagnosed M.B. as being mercury toxic. In fact, M.B.'s urine mercury testing was normal, there was no clinical justification for the diagnosis, and she was not mercury toxic. M.B. also did not suffer from mercury retention toxicity. While low levels of urine excretion could indicate renal failure, M.B.'s kidney function tests were normal.

b. Respondent diagnosed M.B. as being mercury toxic and attributed her health problems to this condition. The diagnosis of M.B. as mercury toxic and the Huggins Center's treatment of this condition, as well as M.B.'s chronic depression, were beyond the scope of dental practice. The Huggins Center was required but failed to refer M.B. to a physician qualified to treat these conditions.

c. The tests and treatments administered to M.B. for the purpose of diagnosing and treating her "mercury toxicity" and chronic depression were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing.

d. The Huggins Center removed M.B.'s amalgam fillings and crowns without clinical justification. It is not within generally accepted standards of dental practice to remove amalgams and crowns to treat depression. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

e. The Huggins Center treated M.B. with PZI. Insulin has no acceptable medical use for non-diabetics such as M.B. There was no clinical justification for the use of insulin for M.B. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

f. There was no clinical justification for the dietary supplements and vitamins administered and prescribed to M.B.

g. There was no clinical justification for the Vitamin C flushes administered to M.B. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

h. There was no clinical justification for M.B.'s Vitamin C intravenous treatment, which included EDTA and magnesium sulfate. Magnesium sulfate, which is used in toxemia to bring down the blood pressure, can be very dangerous and is outside the practice of dentistry. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, there was no record made of the location, duration, rates of infusion, or the personnel placing the intravenous lines. The Huggins Center also did not provide continuous monitoring of the IV.

i. M.B. received treatment including Feldenkrais and acupuncture which are not within the scope of dentistry and have no clinical justification.

j. A patient cannot give informed consent to the treatment of depression or mercury toxicity by removing amalgams and crowns. The informed consent obtained by the Huggins Center from M.B. was ineffective because M.B. could not consent to this treatment.

k. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for M.B.

Patient H.G.

205. H.G., a 71-year-old male, sought help from the Huggins Center for ALS, pain and poor speech. The Huggins Center treated H.G. in its in-office program for the three weeks from approximately April 7, 1992, through April 24, 1992, and provided additional care in May, June, and July, 1992.

206. H.G. received the standard treatment at the Huggins Center, including an Assist Report, blood profile, CBC, trace mineral assay, urine mercury, lymphocyte viability, co-oximetry, serum compatibility testing, Vitamin C intravenous, Feldenkrais, acupuncture, massage and sauna.

207. The Huggins Center diagnosis and treatment of H.G. failed to meet generally accepted standards of dental practice as follows:

a. The Huggins Center diagnosed H.G. as being mercury toxic. In fact, H.G.'s urine mercury testing was normal, there was no clinical justification for this diagnosis, and he was not mercury toxic.

b. The diagnosis of H.G. as mercury toxic and the Huggins Center's treatment of his condition, as well as his ALS, were beyond the scope of dental practice. The Huggins Center was required but failed to refer H.G. to a physician qualified to diagnose and treat these conditions.

c. The tests and treatments administered to H.G. for the purpose of diagnosing and treating his "mercury toxicity" and other medical disorders were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing.

d. The Huggins Center removed H.G.'s amalgam fillings, crowns and teeth and surgically explored his cavitations without clinical justification. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

e. The Huggins Center prescribed numerous pills to H.G. H.G. had a documented history of difficulty swallowing and thus was at risk for aspirating pills into the airway instead of the esophagus. Such aspiration of pills could cause death. In H.G.'s case, the pills prescribed by the Huggins Center lodged in his throat and caused him to seek emergency care. H.G. was hospitalized and a tube was inserted to bypass the esophagus. Generally accepted standards of dental practice prohibit the prescription of pills to patients with ALS as severe as H.G.'s. The Huggins Center's prescription of these pills to H.G. thus failed to meet generally accepted standards of dental practice. In addition, the prescription of pills to H.G. under these circumstances is an extreme departure from these generally accepted standards of dental practice and constitutes grossly negligent dental practice.

f. One of the pills prescribed to H.G. by the Huggins Center was lithium. There was no clinical justification for the prescription of lithium to H.G. In addition, the Huggins Center did no monitoring of the prescription of lithium to H.G. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

g. Pursuant to its standard protocol, the Huggins Center injected H.G. with PZI on several occasions in his shoulder, where he complained of pain. There is no medical basis for PZI in the shoulder for any reason other than diabetes. H.G. was not diabetic and there was no clinical justification for the administration of insulin to him. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

h. There was no clinical justification for the dietary supplements and vitamins administered and prescribed to H.G.

i. H.G. received non-dental treatment including Feldenkrais and acupressure which are not within the scope of dentistry and have no clinical justification.

j. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for H.G.

k. The informed consent obtained by the Huggins Center from H.G. was ineffective because H.G. could not consent to this treatment.

l. There was no clinical justification for H.G.'s Vitamin C intravenous treatment, which included EDTA. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, the Huggins Center did not continuously monitor the administration of Vitamin C and EDTA to H.G. The Center further failed to make a record of the location, duration, rates of infusion, and the personnel placing the intravenous lines.

208. In a videotape made about five weeks after his "graduation" from the Huggins Center, H.G. indicated that he felt much better. H.G. in fact showed no significant improvement as the result of his treatment at the Huggins Center. He died approximately one year after his treatment.

Patient A.G.

209. A.G. was a 67-year-old female who attended the Huggins Center inpatient program from May 14 to July 2, 1992. A.G. was suffering from liver cancer, which was listed in the Huggins Center records as her primary problem. A.G. brought with her hospital records of her CT scan indicating that her prognosis was extremely poor. In sharp contrast to the seriousness of her diagnosis, Huggins Center records for A.G. show that she "holds her stress in her liver & abdomen."

210. A.G. is the wife of H.G. She originally became aware of the Huggins Center when her husband attended it. At the time she began treatment, her teeth were in good condition for her age. A.G. was very conscious and proud of her appearance and just two years before her treatment by the Center, she had spent a considerable sum of money to have her teeth capped to improve her appearance.

211. A.G. sought treatment because she believed she had no other option. She felt she had nothing to lose and found hope at the Center. Respondent told A.G. that the Center would give her a chance.

212. When A.G. informed the Center of her daughter's opposition to her treatment at the Huggins Center, Respondent spent an hour supporting her right to make her own decisions. Respondent even stated that he would do the work for free if necessary.

213. A.G. underwent extensive dental treatment at the Huggins Center, including extraction of 9 teeth and the removal of both amalgams and crowns.

214. The Huggins Center treatment of A.G. failed to meet generally accepted standards of dental practice as follows:

a. In a letter written for A.G. to submit for possible insurance reimbursement for her treatment, the Huggins Center indicates that "[a]s a dental center no diagnosis was given during her treatment here" but then proceeds to describe treatment. Generally accepted standards of dental practice prohibit treating a patient without a dental diagnosis. This conduct involves an extreme departure from generally accepted standards of dental practice and is thus grossly negligent.

b. The Huggins Center in fact treated A.G. for her cancer based on a diagnosis of mercury toxicity.

c. A.G.'s urine mercury testing was normal, there was no clinical justification for the diagnosis of mercury toxicity, and A.G. was not mercury toxic. The diagnosis and treatment of mercury toxicity and of cancer, other than certain types of oral cancer not at issue here, are outside the scope of dentistry. Respondent's diagnosis of mercury toxicity and his treatment of both conditions thus fail to meet generally accepted standards of dental practice. Respondent was required but failed to refer A.G. to a licensed physician qualified to diagnose and treat these conditions.

d. The tests and treatments administered to A.G. for the purpose of diagnosing and treating her "mercury toxicity" and other medical disorders were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing.

e. The Huggins Center extracted 9 teeth (8 with root canals and 1 with pulp exposure but had not yet had a root canal), performed surgical explorations of cavitations, and removed fillings and crowns. There was no clinical justification for these treatments. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

f. The Huggins Center staff prescribed for A.G. TRANS Mix, Eaters Digest, XIT, Vitamin C, MICE LA, Vital Dophilus, Charcoal, Jogger Juice, Magnesium, Liver mate, potassium, power mix, posterior pituitary extract, thyroid, Vitamin E, zinc manganese. There was no valid dental purpose or clinical justification for these prescriptions.

g. The Huggins Center treated A.G. with lithium. There was no clinical justification for the prescription of lithium to H.G. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

h. There was no clinical justification for A.G.'s Vitamin C intravenous treatment. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, there was no record made of the location, duration, rates of infusion, or the personnel placing the intravenous lines. The Huggins Center also did not provide continuous monitoring of the IV.

i. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for A.G.

j. A.G. received treatment including Feldenkrais and acupuncture which are not within the scope of dentistry and have no clinical justification

k. The informed consent obtained by the Huggins Center from A.G. was ineffective because A.G. could not consent to this treatment.

215. In a videotape made the day after she finished treatment, A.G. indicated that she was still weak but felt sure she would be stronger each day. She stated that she had received love and help at the Center and that her illness was going out of her body. She indicated that her blood pressure had decreased, her hot flashes had disappeared, her heartbeat was more regular, and her kidneys were functioning better.

216. After her treatment at the Huggins Center, A.G. became convinced that the treatment involved only gimmicks universally offered as a cure for all diseases. The treatment had drained her family financial resources and, in her view, left her mouth looking like she had been in a "car wreck." She and her husband requested the return of their payments to the Huggins Center.

217. In his reply, Respondent indicated in part as follows: "If you want to put efforts into healing or fussing, just remember your impression of us when you were here. Remember the comments you made. Many were recorded." This statement

implies that A.G.'s initial positive videotaped responses would be used against her if she pursued her request for the return of monies paid to the Center. In general, videotapes such as the one of A.G. and H.G. were made for the purpose of having a record of improvements and protecting Respondent against later claims of lack of improvement.

218. Despite her initial positive outlook, A.G. showed no significant improvement as the result of her treatment at the Huggins Center. In fact, she suffered great discomfort afterwards. Her gums were very sore and did not heal. She had trouble eating and could not chew well. She was embarrassed by her appearance after treatment.

219. The treatment A.G. received at the Huggins Center severely harmed her. After treatment she was unable to occlude on any of her teeth and had chancre sores throughout her mouth. The extraction of two teeth in particular caused nerve damage exhibited by bruising and numbness of the face and lip. The treatment essentially rendered her a dental cripple.

220. A.G. and H.G. paid approximately \$21,000 in order to obtain treatment at the Huggins Center.

221. A.G. died in November, 1992, just six months after beginning her treatment at the Huggins Center.

Patient H.S.

222. H.S., a 39-year-old female, and her husband G.S. both sought treatment from the Huggins Center as a precautionary measure. They were not suffering poor dental or medical health at the time. Both enrolled in the assist program for \$600 each. The Huggins Center treated H.S. from approximately November 29, 1989 through December 7, 1989.

223. At the time of her treatment, H.S. had a fibroid uterus, a benign growth of the uterus, which has previously been diagnosed by her gynecologist. This growth was not cancerous. H.S. had no other significant medical problem at that time.

224. As G.S. was about to have his amalgam fillings removed, Respondent came into the bubble operatory, indicated that he had reviewed H.S.'s blood test results, and said that something was seriously wrong with her. He indicated that H.S. was a very sick woman who needed everything the Huggins Center could give her. Respondent did not actually explain the problem but indicated that her blood work was very complicated, that she was seriously ill, and that she needed to be transferred to the in-office program. Respondent further stated that if H.S. decided

to stay with the assist program and went into shock, he would not be responsible for the consequences.

225. At Respondent's suggestion, H.S. did transfer to the in-office program. She received the standard treatment provided.

226. The blood chemistries and other tests performed on H.S. provide no justification for Respondent's statement that she was a very sick woman. The tests are all within normal range or easily explainable by factors other than poor health:

a. The Huggins Center diagnosed H.S. as having sodium contamination interfering with cell membrane efficiency. In fact, there is no evidence of this. H.S.'s blood sample shows a normal amount of sodium. While H.S.'s hair analysis shows sodium, this is to be expected based on the sodium content of shampoos, softeners and cosmetics.

b. The Huggins Center diagnosed H.S. as suffering from zinc contamination. This diagnosis is completely erroneous and not indicated by the hair analysis. Zinc is in fact a nutrient, not a poison, and could come from hair products.

227. During her treatment, Huggins Center staff members told H.S. that she had an abdominal tumor which was cancerous. This was not true.

228. The Huggins Center diagnosis and treatment of H.S. failed to meet generally accepted standards of dental practice as follows:

a. There was no clinical justification for the Huggins Center's diagnosis of uterine cancer. A diagnosis of uterine cancer and the treatment of this condition are not within the scope of the practice of dentistry. It is also not possible to diagnose cancer from the Huggins Center laboratory values. By diagnosing and treating H.S. for uterine cancer, Respondent failed to meet generally accepted standards of dental practice.

b. The Huggins Center diagnosed H.S. as being mercury toxic. In fact, H.S.'s urine mercury testing was normal, there was no clinical justification for this diagnosis, and H.S. was not mercury toxic. These conditions are not within the scope of dentistry. The Huggins Center was required but failed to refer H.S. to a physician qualified to diagnose and treat her purported cancer and mercury toxicity.

c. The tests and treatments administered to H.S. for the purpose of diagnosing and treating her "mercury toxicity" and other medical disorders were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the

assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing. The Huggins Center interpreted H.S.'s purported 88% lymphocyte viability as demonstrating that something was killing off the lymphocytes. This is not clinically reasonable.

d. The Huggins Center removed H.S.'s amalgam fillings and teeth without clinical justification. There is no scientific basis to support the removal of amalgams as treatment for fibroid cancer. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

e. The Huggins Center prescribed oral lithium carbonate for H.S. There was no clinical justification for the prescription of lithium to H.S. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, the Huggins Center did no monitoring of the prescription of lithium to H.S.

f. Pursuant to standard protocol, the Huggins Center injected H.S. with PZI. There is no clinical justification for PZI other than diabetes. H.S. was not diabetic. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

g. There was no clinical justification for the dietary supplements and vitamins administered to H.S.

h. There was no clinical justification for the oral posterior pituitary extract or the Vitamin C flushes administered to H.S. Each is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

i. There was no clinical justification for H.S.'s Vitamin C intravenous treatment. The Huggins Center administered this treatment to help "calm down" the elevated platelets and white blood cells, but no elevated platelets or white blood cell abnormality was revealed. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice. In addition, no record was made of the location, duration, rates of infusion, or the personnel placing the intravenous lines. Monitoring of the IV was also not continuous.

j. H.S. received treatment including Feldenkrais and acupressure which are not within the scope of dentistry and lacked clinical justification.

k. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for H.S.

I. The informed consent obtained by the Huggins Center from H.S. was ineffective because H.S. could not consent to this treatment.

229. When H.S.'s fibroid uterus later became symptomatic enough to require surgery, it was removed and confirmed to be benign.

230. H.S. suffered unnecessary emotional anxiety as the result of the diagnoses made at the Huggins Center.

Patient G.S.

231. G.S., a 32-year-old male, entered the Huggins Center's assist program in November, 1989. This program included the standard laboratory tests, an assist report, and a serum compatibility report. In addition, G.S. had amalgams from 14 teeth removed at the Center.

232. The Huggins Center diagnosis and treatment of G.S. failed to meet generally accepted standards of dental practice as follows:

a. The Huggins Center diagnosed G.S. as being mercury toxic. In fact, G.S.'s urine mercury testing was normal, there was no clinical justification for this diagnosis, and G.S. was not mercury toxic. The diagnosis of G.S. as mercury toxic and the Huggins Center's treatment of this condition were beyond the scope of dental practice. The Huggins Center was required and failed to refer G.S. to a physician qualified to diagnose and treat this purported mercury toxicity.

b. The tests and treatments administered to G.S. for the purpose of diagnosing and treating his "mercury toxicity" were without clinical justification. These include the use of the mercury toxicity questionnaire, the testing of electrical charges, the serum compatibility test, the assist report, blood profile/CBC, co-oximeter testing, hair analysis and lymphocyte viability testing.

c. The Huggins Center removed G.S.'s amalgam fillings without clinical justification. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

d. Pursuant to standard protocol, the Huggins Center injected G.S. with PZI. There was no clinical justification for the use of insulin for G.S. This is an extreme departure from generally accepted standards of dental practice and constitutes grossly negligent practice.

e. There was no clinical justification for the dietary supplements and vitamins administered and prescribed to G.S.

f. The Huggins Center did not document an adequate dental history, dental examination or dental treatment plan for G.S.

g. The informed consent obtained by the Huggins Center from G.S. was ineffective because G.S. could not consent to this treatment.

Dr. T.F.

233. Dr. T.F., a dentist, contacted the Huggins Center in 1990 because he believed that he had been exposed to mercury from paint and an unsafe dental operatory. Dr. T.F.'s exposure to mercury was thus occupational, although Respondent claims it was dental because Dr. T.F. was a dentist.

234. In August and September, 1991, Dr. T.F. completed tests offered at the Huggins Center, including urine mercury testing, blood profile/CBC, serum compatibility testing, hair analysis, and the mercury toxicity questionnaire.

235. The Huggins Center diagnosis and treatment of Dr. T.F. failed to meet generally accepted standards of dental practice as follows:

a. Respondent diagnosed Dr. T.F. as having immunological abnormalities secondary to mercury retention and mercury toxicity. This diagnosis and the subsequent treatment were not related to any dental purpose, as Dr. T.F. had no dental amalgams. The Huggins Center diagnosed Dr. T.F. as having a mercury level comparable to that of patients with retention toxicity. In fact, Dr. T.F.'s urine mercury testing was normal and indicated that his kidneys were functioning normally and that he was not mercury toxic. The diagnosis of Dr. T.F. as mercury toxic and the Huggins Center's treatment of this condition were beyond the scope of dental practice. The Huggins Center was required and failed to refer Dr. T.F. to a physician qualified to diagnose and treat his purported mercury toxicity.

b. The tests administered to Dr. T.F. for the purpose of diagnosing and treating his "mercury toxicity" were without clinical justification. These include the use of the mercury toxicity questionnaire, the serum compatibility test, blood profile/CBC, and hair analysis.

c. The Huggins Center also recommended dietary supplements and vitamins, for which there was no clinical justification.

DISCUSSION

Scope of Dentistry. Respondent asserts that, as a dentist, he is permitted to treat any condition arising from the oral cavity. He then proceeds to classify MS, for example, as a disease of dental origin and to assert his right to treat it. Respondent seeks to buttress his position by referencing the fact that only dentists are qualified to remove amalgams and that if amalgams are toxic, they must surely be removed as a first step to treating the toxicity. Respondent's logic, however, comes up short. Respondent sets no parameters on his definition of the scope of dentistry, such that, for instance, if a dental operation such as a tooth extraction caused a bacteremia and produced endocarditis, Respondent would be entitled--even required--to treat the resulting heart valve damage.

Respondent relies in part on an opinion issued by the California Attorney General on March 14, 1986 (69 Op. Atty. Gen. Cal. 29) interpreting a similar statute defining the scope of dentistry. This opinion concludes that a dentist may seek a urinalysis, blood analysis or hair analysis; may use oral drops to determine vitamin assimilation; may prescribe Elavil to relax muscles; may offer dietary recommendations; and may use nerve stimulation to control pain *if* these can effectively be used to diagnose or treat a disease of the structures identified in the dental statute (*i.e.*, the teeth, gums, jaw, alveolar process or associated structures). The reasoning of this opinion is not helpful in determining the scope of dentistry in Colorado.

No other witness supported Respondent's interpretations of the scope of dentistry and medicine. Instead, all witnesses who addressed this issue concluded without hesitation that Respondent's treatment of mercury toxicity and the underlying diseases which he attributes to it was in fact the practice of medicine, not dentistry. Respondent's interpretation of the scope of dentistry is also at odds with the Dental Practice Act. At Section 12-35-110, C.R.S., the Act refers to the practice of dentistry as dental operations, oral surgery, and dental diagnostic or therapeutic services. It further defines the practice of dentistry by reference to dentures; bridges; appliances worn in the human mouth; diagnosis and treatment of the condition of human teeth, jaws or the adjacent structure; extraction of teeth; filling of cavities in human teeth; and taking of dental x-rays. Even if mercury toxicity and the medical diseases and disorders treated by Respondent were of dental origin, their diagnosis and full treatment are not encompassed within the statutory definition of the practice of dentistry.

Scientific Support for Respondent's Theories. Respondent's philosophy is that the absence of proof is not the proof of absence. Respondent admits that he cannot definitively prove the link between mercury from dental amalgams and the diseases treated by the Huggins Center but asserts that this is also true for the

Board, which cannot definitively prove that amalgam is safe. Since in his view the scientific studies neither definitively establish nor preclude the link between amalgam and disease, Respondent believes that he is entitled to rely on his clinical experience alone to continue to provide the treatment outlined above at the Huggins Center.

Respondent points to the fact that he formed his belief that amalgams release mercury and began treatment based on his clinical experience even before this phenomenon was widely acknowledged and that science later caught up to him. Respondent points to the fact that there have only been 16 years of research since the studies in 1979 verifying the release of mercury from amalgams. He believes that further research will validate his theories and treatment modalities and asserts that there must be room for pioneers in the dental field.

Respondent's view ignores the fact that as a licensed dentist, he must practice within generally accepted standards of practice. Those standards require that before treatment can be rendered, there must be clinical justification for that treatment. This requires more than a suspicion of the underlying cause of a disease and a treatment's efficacy in addressing that cause. The record contains no evidence whatsoever that generally accepted standards of practice permit a dentist to render treatment without scientific basis or clinical justification. This case does not present the more difficult question of the degree of scientific certainty which must be established in order to render treatment, since the record contains no reliable scientific evidence in support of Respondent's positions.

Respondent contends that even the daily release of 1 to 2 micrograms of mercury from amalgams is sufficient to warrant removal of those amalgams, because there is universal agreement that if a patient has no amalgam fillings, he will not be exposed to this source of mercury. This argument ignores the issue of causation. Since there is no reliable scientific support for Respondent's claim that amalgams *cause* disease, there is no basis for the removal of the amalgams. In addition, it is universally accepted that the amalgam removal process produces a transient exposure of mercury to the patient, and this should be avoided unless otherwise justified.

Respondent also contends that patients should have the option of amalgam removal for reasons related to mercury toxicity and that when a patient requests this treatment, a dentist should be able to render it. The record establishes, however, that generally accepted standards of practice do not permit a patient to consent to being harmed or to amalgam removal except for limited purposes, not including concerns about mercury toxicity. The standards developed in the dental profession do not adopt Respondent's philosophy.

Respondent contends that since extraction of a tooth is an acceptable option for a patient in lieu of a root canal, it also must be acceptable once the root canal is performed. This argument overlooks the fact that the original basis for treatment, generally a bacterial infection, no longer exists once the root canal has been performed.

Respondent's Liability for Treatment Provided by Others. Respondent did not directly provide all treatment at the Huggins Center or to the eight patients whose care is addressed in this matter. He appears to contend that he is not responsible for the care which he did not personally provide. In light of the circumstances of this case, Respondent's assertion is without merit.

As the sole owner, shareholder and director of the Huggins Center, Respondent was intimately involved in its operations. Respondent established protocols for treatment, and the Center care-givers, whether dentists, physicians, nurses or others, followed these protocols in treating patients. For instance, although Respondent claims that the order to discontinue antibiotics given to D.A. should be attributed to Denton and not himself, the need to stop antibiotics prior to serum compatibility testing is a part of the standard protocol at the Center. There is no question as to who was in control at the Center, and Respondent cannot avoid responsibility simply because he did not actually provide all the care given according to his specifications.

Practice of Medicine at the Huggins Center. During a time period beginning in 1991, the Huggins Center employed Dr. Sandra Denton, a physician, to provide services. The Center's employment of a physician does not protect it from charges that its personnel were providing medical treatment outside the scope of dentistry. The protocols at the Huggins Center were standardized such that patients with a variety of diseases received the same treatment, and this treatment was prescribed by Respondent. The record shows no difference in the treatment rendered by Denton and other personnel of the Center.

Gross Negligence. Gross negligence involves an extreme departure from the ordinary standard of care in the community at the time in question. It refers to conduct which is so deviant from the accepted minimal standard as to be beyond the bounds of professional tolerance. *Lee v. State Board of Dental Examiners*, 654 P.2d 839, 845 (Colo. 1982); see *People ex rel. Woodard v. Brown*, 770 P.2d 1373, 1379 (Colo. App. 1989). Relying on this standard, the evidence established multiple acts or omissions constituting grossly negligent medical practice.

Limitation of Professional Corporation to Practice of Dentistry. The Board has charged Respondent with "[p]racticing dentistry as a partner, agent or employee of or in joint venture with any person who does not hold a license to practice dentistry

within this state or practicing dentistry as an employee of or in joint venture with any partnership, association, or corporation except as provided in section 12-35-112." Section 12-35-112 allows the practice of dentistry as a professional service corporation subject to the limitations of Section 12-36-134, C.R.S. of the Medical Practice Act, which at subsection (b) provides that a professional service corporation must be organized solely for the purposes of conducting the practice of medicine through persons licensed to practice medicine. Since this restriction is incorporated by Section 12-35-112 of the Dental Practice Act, the result is that a dental professional service corporation is limited to the practice of dentistry through licensed dentists.

The treatments offered by the Huggins Center go far beyond the practice of dentistry. The Center not only routinely practiced medicine by treating purported mercury toxicity and medical disorders and diseases, but it also provided numerous non-dental therapies such as massage, sauna, acupuncture, and Feldenkrais. Respondent admits that these adjunct therapies were not the practice of dentistry, although he asserts that they had a dental purpose. Respondent thus essentially concedes a violation of Section 12-35-118(1)(g), C.R.S. The Huggins Center did not limit itself to the practice of dentistry and thus violated this statutory provision.

CONCLUSIONS OF LAW

1. The Board has jurisdiction over Respondent, his license, and the subject matter of this proceeding.
2. In relation to Count I, since July 1, 1986, in his book, publications, and videotapes, Respondent has engaged in advertising which is misleading, deceptive, and false in violation of Section 12-35-118(1)(k), C.R.S. (effective July 1, 1986). [See paragraphs 57, 75, 76, 79, 81, 82, 83, 84, 86, 87, 98, 106, 111, 119, 122, 126, 130, 135, 140, 146, 149, 159, 167, 171, and 176.]
3. In relation to Count II and specifically patients D.A., G.B., M.B., A.G., H.G., H.S., G.S., and Dr. T.F., Respondent has engaged in acts or omissions which fail to meet generally accepted standards of dental practice or which constitute grossly negligent dental practice, in violation of Section 12-35-118(1)(j), C.R.S. (1995).^{37'} [See paragraphs 190, 201, 204, 207, 214, 228, 232, and 235.]
4. In relation to Count III, since July 1, 1986, Respondent has practiced dentistry as a partner, agent or employee of or in joint venture with any person who does not hold a license to practice dentistry in Colorado or has practiced dentistry as an employee of or in joint venture with a partnership, association, or corporation other

than as provided in Section 12-35-112, C.R.S., a violation of Section 12-35-118(1)(g), C.R.S. (effective July 1, 1986).

5. In relation to Count IV and specifically patients D.A., G.B., M.B., A.G., H.G., H.S., G.S., and Dr. T.F., Respondent has abandoned his patients by failing to provide reasonably necessary referrals to licensed physicians for consultation or treatment in violation of generally accepted standards of dental practice and in violation of Section 12-35-118(1)(v), C.R.S. (1995).^{38/} [See paragraphs 190(b), 201(b), 204(b), 207(b), 214(c), 228(b), 232(a) and 235(a).]

6. In relation to Count V and specifically patients D.A., G.B., A.G., H.G., H.S., G.S. and Dr. T.F., Respondent has engaged in willful and repeated ordering and performance, without clinical justification, of demonstrably unnecessary laboratory tests or studies; the administration, without clinical justification, of treatment which is demonstrably unnecessary; the failure to perform referrals when failure to do so is not consistent with the standard of care for dentistry; and the ordering or performing without clinical justification of services and treatment which is contrary to recognized standards of the practice of dentistry as interpreted by the Board, in violation of Section 12-35-118(1)(x), C.R.S. (effective July 1, 1989). In relation to M.B., the only treatment rendered after the effective date of Section 12-35-118(1)(x) was the prescription of supplements, which constitutes a violation of this section. [See paragraphs 190(b) and (c), 201(b) and (c), 204(b) and (c), 207(b) and (c), 214(c) and (d), 228(b) and (c), 232(a) and (b) and 235(a) and (b).]

7. In relation to Count VI, the above violations of the Dental Practice Law also constitute violations of Section 12-35-118(1)(h), C.R.S. (effective July 1, 1986).

INITIAL DECISION

Once violations of Section 12-35-118(1), C.R.S., have been established, the Administrative Law Judge must determine what disciplinary sanction, if any, is appropriate. Such sanctions may be suspension of a license for a period of not more than one year; revocation of a license; or reprimand, censure or probation. Section 12-35-118(1), C.R.S. In this matter, the Board's counsel seeks revocation of the Respondent's license. Respondent asserts that no discipline is appropriate.

In his practice of dentistry at the Huggins Center over the years, Respondent has engaged in a pattern and practice of violating the Dental Practice Act. He first engages in deceptive advertising to entice patients to seek dental treatment for their serious medical problems when in fact there is no known link between their teeth and general health or between the treatment offered and any improvement in their health.

The efficacy of this deceptive yet seductive advertising is shown by the thousands of telephone calls coming into the Huggins Center every month.

Respondent instills fear in the public that the mercury in their amalgams is poisoning their bodies. His emotionally-charged publications, laced with scientific references and terminology, are designed to convince the public not only that amalgams are the undiscovered cause of everything from MS to Alzheimer's disease, but that there is a simple cure which offers them an amazing and tantalizing 85% success rate. The Huggins Center holds the key to their improved health.

Respondent offers hope not just to a few. His espoused treatment offers to remedy a host of conditions, including tremors, seizures, MS, ALS, Alzheimer's disease, emotional disturbances, depression, anxiety, unprovoked suicidal thoughts, lupus, scleroderma, rheumatoid arthritis, unexplained heart pains, high and low blood pressure, tachycardia, irregular heartbeat, osteoarthritis, chronic fatigue, "brainfog," digestive problems, and Crohn's disease. The sheer breadth and number of these diseases is staggering. They include a number of life-threatening and debilitating conditions for which medical science offers only symptomatic treatment. When faced with these serious diseases, it is no wonder that patients are willing to grasp at any hope of improvement and turn to Respondent for the miraculous improvements he promises. The debilitating nature of the diseases for which Respondent offers treatment and the desperate straits of a number of his patients, combined with the lack of any scientific basis for the treatments he offers, make Respondent's conduct particularly egregious. Respondent has taken advantage of the hope of his patients for an easy fix to their medical problems and has used this to develop a lucrative business for himself.

The diagnostic techniques and treatments offered by Respondent at the Huggins Center are scientifically unsupported, without clinical justification, and outside the practice of dentistry. The standard protocols which Respondent has developed thus provide care which does not meet generally accepted standards of dental practice and, in many cases, is grossly negligent. Instead of referring patients to physicians who could actually treat their underlying medical diseases and who could make a diagnosis of the mercury toxicity which Respondent suspects, Respondent simply ignores the limits of his qualifications and licensure and proceeds to treat these patients. He subjects patients to a wide array of tests and treatments which have no clinical justification.

In relation to the eight patients at issue here, Respondent used his standard protocols. While all these patients suffered financially due to Respondent's intervention, a number of them also suffered physically or emotionally. Respondent's encouraging D.A. to believe in her son's wish that she sell her wheelchair is so out of proportion to any benefit which could be anticipated that it is cruel. The Huggins

Center treatment caused actual harm to A.G.'s mouth and gums, as well as her appearance, under circumstances when her prognosis was very poor. Far from affording her the hoped-for improvement of her liver cancer, the Huggins Center treatment actually diminished her well-being during the last months of her life. In relation to H.S., the Huggins Center diagnosis of her being very sick, coupled with the disclaimer of any liability if she proceeded without full treatment, caused her to transfer to the significantly more expensive in-office program and to experience emotional upset, which was aggravated when she was later told she had cancer.

Along the way, Respondent has clearly become convinced that his treatments are effective and that it is only the patients unwilling to continue adequate nutritional and other follow-up or those unlucky 15% who will not benefit from his treatment. He is perfectly capable of ignoring the large body of scientific evidence which suggests that his theories in every arena are not credible; citing scientific literature selectively; exaggerating findings or studies which appear to support to his work; referring to the thousands of publications which support him yet being unable to produce those; and asserting that his clinical experience, as biased and unscientific as that may be, is itself the only support he needs. Respondent essentially says "trust me" to the dental profession and the public but provides no reasonable basis upon which he should be trusted.

Given his steadfast and longstanding commitment to his theories in the face of substantial reasoned evidence to the contrary, it is evident that nothing will stop Respondent from practicing the treatments he has developed short of revocation of his license to practice dentistry. Such disciplinary action is also justified by the multiple violations of the Dental Practice Act proven in this matter, especially those involving grossly negligent care.

Accordingly, it is the Initial Decision of the Administrative Law Judge that Respondent's license to practice dentistry in the State of Colorado is revoked.

DONE AND SIGNED

February 29, 1996

Nancy Connick

NANCY CONNICK
Administrative Law Judge

FOOTNOTES

^{1/}
— When Respondent gave sworn testimony in two other cases by means of a deposition, he indicated that he had never been disciplined by the Board. Respondent testified that he had totally forgotten about the 1983 matter and did not consider it to be a disciplinary action, despite the fact that it is clearly styled as one.

^{2/}
— The Huggins Center is the successor to Hal A. Huggins, D.D.S. Professional Corporation, which was incorporated in 1974 to practice dentistry through persons qualified to practice dentistry in Colorado. Respondent also incorporated Body Chem, Inc. in 1979 and merged it with Hal A. Huggins D.D.S. in 1984.

^{3/}
— Dr. Denton is no longer practicing medicine in Colorado. After the Colorado State Board of Medical Examiners filed a complaint against her based on her employment as medical director of the Huggins Center, she agreed voluntarily to relinquish her medical license and not to reapply.

^{4/}
— Throughout this Initial Decision, when the Administrative Law Judge refers to practices of the Huggins Center and treatment offered by it, these references include Respondent's individual practices and treatment, as well as those he has prescribed for use by other Center personnel.

^{5/}
— In his testimony, Respondent attempted to negate any role of the Huggins Center in diagnosing patients as being mercury toxic. At one point he indicated that patients themselves have already established the link between mercury toxicity from their amalgams and their diseases or disorders, so the Huggins Center simply balances their blood chemistries. The overwhelming weight of the evidence, including notations in Center records, establishes that the Huggins Center does indeed diagnose patients as being mercury toxic. Respondent also attempted at hearing to disclaim treating patients' underlying medical problems. He testified that he did not treat these medical problems but that the effects of his treatment were related to the diseases. This is a distinction without a difference, and it is abundantly clear that Respondent in fact treats the medical diseases and disorders of his patients.

^{6/}
— The American Dental Association initially took the position that no mercury vapor was released from amalgams. At that time, the technology to detect the low levels of mercury has not yet been developed.

^{7/}
— This estimate is based on twelve amalgam fillings in the mouth. At this rate it would take about 10,000 years for amalgams to dissolve. In 1991 Olsson and

Bergman demonstrated that previous higher estimates of the amount of mercury vapor released from amalgams had been inflated due to the use of the inaccurate Jerome mercury detector [which measures a greater volume of air than is found in the mouth and magnifies any measurement error by 10,000 times]. Olsson *et al.*, "Daily Dose Calculations from Measurement of Intra-oral Mercury Vapor," *Journal of Dental Research*, 71(2), 414-423, Feb. 1992. This conclusion is in accord with other research as well. Berglund, "Estimation by a 24-hour Study of the Daily Dose of Intra-oral Mercury Vapor Inhaled after Release from Dental Amalgam," *Journal of Dental Research*, 69(10), 1646-1651, Oct. 1990; and Mackert, "Factors Affecting Estimation of Dental Amalgam Mercury Exposure from Measurements of Mercury Vapor Levels in Intra-oral and Expired Air," *Journal of Dental Research*, 66(12), 1775-1780, December 1987 [previous estimate of daily dose of mercury of Vimy and Lorscheider in 1985 overestimated by a factor of 16 times].

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Respondent represents that biochemical tests of patients revealed that urinary excretion of mercury decreases when the barometric pressure drops, that is, that the body retains more mercury in bad weather, but he was unable to produce the data supporting this claim. Respondent was also unable to provide the data for the double-blind tests he allegedly performed on 3,500 patients which showed their purported immune reactivity to amalgam components. Respondent presented this data to an American Dental Association conference in 1984 and agreed to provide the underlying data to attendee Baratz but never did so. Respondent states that he performed an update study on 3,500 patients in 1992 and reached the same results. Respondent's representation that these tests were double-blind is false. Respondent's inability to produce the data from these tests is highly unusual, since the tests were only three years old and involved 3,500 subjects.

Respondent represents that double blind studies measuring oxyhemoglobin, the oxygen-carrying part of the hemoglobin, before and 20 minutes after taking his supplement Jogger Juice showed an average increase of 12% and that some people experienced a 30% increase. He was unable to furnish this data. In his publications, Respondent refers to two studies at the University of Colorado at Colorado Springs but was unable to produce the data to support these assertions. He indicated that the results of these tests were destroyed.

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Respondent claims that the placebo effect cannot account for the improvements experienced by his patients because their body temperature actually increases one to two degrees within 24 hours after treatment. This statement does not take into account the physiological effects of placebo treatment or the individual's temperature variability.

10/

In response to Respondent's request, Haley did a preliminary study comparing Alzheimer brains and non-demented control brains. He found aberrant tubulin (*i.e.*, the most abundant protein in the brain) in the Alzheimer brains. Haley sought to identify the toxic material which caused this aberrant tubulin and concluded that the only heavy metal which mimicked this effect in the control brain was mercury at low concentrations. Haley thus concluded that breathing mercury vapor decreases the ability of the tubulin to interact with nucleotides and inhibits axonal transport. Haley has postulated a mechanism whereby autoimmune diseases such as Alzheimer's disease could develop based on an environmental trigger (*i.e.*, mercury) and a genetic predisposition. According to Haley's theory, when mercury reacts with proteins, it binds irreversibly, inhibiting the interaction of the protein with nucleotides and preventing the nucleotides from producing energy. The injured proteins in the cells exposed to mercury then accumulate and the cells become toxic. Haley believes that this effect on nucleotide-protein interactions causes disease.

Haley also believes that the vapor released from amalgams is converted to toxic mercuric chloride in the body. Haley also conducted preliminary studies in which he added mercury to the cerebral spinal fluid from MS and control patients. Haley concluded that there is a change in nucleotide binding protein for MS patients. Haley further concluded that the addition of mercury decreases the otherwise elevated levels of antibodies in the cerebral spinal fluid of MS patients. This research does not address whether mercury is a cause of MS. In these studies, Respondent provided the cerebral spinal fluid.

11/

Swartzendruber, "Adverse Immunomodulatory Effects of Heavy Metals in Dental Materials," *Int. J. Biosocial Medical Research* 12(2), 133-146, 1990. Respondent's reliance on Swartzendruber is an example of his tendency to exaggerate. In his book, Respondent indicates that Swartzendruber has written "about twenty reference articles . . . that show this relationship [between dental amalgam and multiple sclerosis] to be valid." In fact, Swartzendruber has not written one such article. At the time of the hearing, he was finishing an opinion paper based on his review of literature which hypothesizes a connection between amalgam and MS, but this has not been published and certainly was not published as of 1993, when Respondent's book was published.

12/

In the first part of his study, Swartzendruber stained lymphocytes in the blood to examine the T cell and B cell viability of three subjects. [T cells and B cells are types of lymphocytes, which themselves are a subset of white blood cells, active components of the immune system.] In relation to one subject, Respondent's wife, Swartzendruber noted a drastic reduction in T cell viability after

amalgam placement and a return to normal after removal. In his second part of his study, Swartzendruber incubated the cells from subjects in the presence or absence of mercury, nickel and aluminum. The results obtained were extraordinary: two patients had a toxic reaction to a particular dose of mercury while others had no reaction at the same dose.

13/

The reliability of Swartzendruber's work is undercut by the fact that it is completely dependent upon Respondent, who provided the blood samples tested and made representations about amalgam placement and removal. Swartzendruber had no control over how quickly the blood samples were transported to him. These studies were not blinded. Swartzendruber's results in relation to Respondent's wife are so dramatic that they suggest a technical error such as the drawn blood not being tested in a timely manner. Swartzendruber was unable to refute at hearing the clear implication that these results regarding Respondent's wife were actually obtained some two years prior to the other research. In addition, even if mercury caused an immunological reaction, the dramatic drop from 95% to 35% viability is unreasonable. The journal in which the studies were published is not a recognized journal in immunology and is essentially unavailable in libraries. Swartzendruber's article was rejected by the Journal of Dental Research. Swartzendruber's results represent the germ of possible findings which have not been thoroughly explored. Without being able to repeat the results in a blinded fashion, the results cannot be relied upon.

Although Swartzendruber's overall qualifications and credentials are impressive, his credibility in relation to the issue of dental amalgam is significantly affected by his close association with Respondent both as Respondent's professor/ faculty advisor during his master's degree program and simultaneously as Respondent's laboratory director. Swartzendruber clearly attempted to downplay this connection in his testimony, but as early as 1985, Swartzendruber was a paid participant in seminars sponsored by Respondent which financially benefitted Swartzendruber's research at the University of Colorado. Swartzendruber later arranged for the University to co-sponsor a conference with Respondent; traveled to California with Respondent at Respondent's expense to evaluate the purchase of a microscope; and cooperated with Respondent in obtaining funding to examine the effects of amalgams on bodily chemistries, a project which Swartzendruber will coordinate.

14/

For example, Respondent cites studies where rats drink mercuric chloride or mice are injected with it, which are unrelated to dental amalgams. Respondent cites studies which deal with the loss of T cells in MS patients or show that if amalgam is used in teeth, some mercury can be found in areas adjacent to the tooth. These do not support his theories. Respondent relies on a study which

showed that when amalgams were placed in monkeys and they were then sacrificed, there was mercury in the brain. This study did not, however, show any health effects of that mercury. A separate study by Leszek J. Hahn mixed radioactive mercury with amalgam powder and placed it in the mouths of monkeys. While it concentrated in the kidney, gastrointestinal tract and jaw, mercury did not go to the brain.

Respondent also relies on studies regarding mercury poisoning in farmers exposed to fungicide in handling crops and an Iraqi exposed to grain treated with organic mercury compound, but these are irrelevant to the issue of dental amalgam. C.W. Svare has admitted that his studies, relied on by Respondent, which seek to compare the mercury in the blood and expired air of patients with amalgam fillings with a those of a control group, were based on calculation errors which overestimated the amount of mercury detected. Svare found that the mercury in the blood of college students both with and without amalgams was not significantly different. In addition, none of the subjects had an illness or disease.

^{15/}
— For example, he relies on a study of 20 patients who believed that they were suffering from amalgam-related symptoms for the assertion that these patients suffered significantly more from medical illnesses and had diagnosed chronic craniofacial pain significantly more often. The study concludes, however, that none of the patients' claimed symptoms and signs could be associated with amalgams and that most of the complaints were explainable from the patients' medical disorder and chronic craniofacial pain. Meruman *et al.*, "Patients complaining about amalgam-related symptoms suffer more often from illnesses and chronic craniofacial pain than their controls," *Scand. J. Dent. Res.* 1990, 167-172.

^{16/}
— These animal experiments have produced type 2 and 3 reactions. There are four types of immunological responses wherein the immune system damages the body: 1) IgE classical allergies; 2) autoimmune diseases produced by antibodies to bodily tissues, wherein the antibody is directed against self, 3) immune complex disease where an antigen-antibody complex occurs and lodges in the tissue (but the antibodies are not directed against the tissue), and 4) delayed hypersensitivity similar to poison ivy or contact sensitivity.

Mercury vapor from amalgams could reach the immune system if it is absorbed through the mucosa lining of the cheek or inhaled in the lungs. The mercury reaching lymphocytes does not, however, constitute an immunological reaction. It is possible that persons with significant exposure to mercury such as the occupationally exposed might produce antibodies to mercury but this

✓ does not mean they will contract an autoimmune disease. The presence of antibodies does not cause disease.

171

Siblerud, "A comparison of mental health of MS patients with silver/mercury dental fillings and those with fillings removed," *Psychological Reports*, 70, 1139 - 1151, 1992. Siblerud compared MS patients with mercury dental fillings and those who have had them removed. He administered psychological tests and analyzed them to determine which psychological traits differed significantly between the two groups.

Siblerud's conclusions are unreliable for a number of reasons. First, it is noteworthy that his publication appears in *Psychological Reports*, which is not a recognized authoritative journal. Second, it is not clear that the subjects were blinded to the goals of the study. Subjects could easily have a motivation and pre-select themselves if they believe that amalgam removal benefitted them. Siblerud recruited subjects for one study by a newspaper advertisement which indicates that the research would investigate the relationship between mercury from dental fillings and MS. The subjects so recruited may be biased. This flaw is particularly significant because Siblerud relies on subjective reports of symptoms from these subjects without verification. Siblerud's recruitment of subjects from dentists who have stopped using amalgams is similarly subject to bias.

Third, it is not possible to determine if the subjects actually had MS, how severe the disease was, or whether there were confounding variables such as other illnesses. Fourth, Siblerud's results are not explainable biologically or toxicologically. If the differences found were due to the toxic effect from amalgam, one would expect more global dysfunction, as opposed to specific isolated changes. In addition, the same pathway controls fearfulness and hyperexcitability, for example, yet a change in one is noted with no change in the other.

Fifth, some data are excluded without explanation and it is difficult to analyze the data presented due to the format. Siblerud reflects a lack of knowledge regarding mercury toxicity by indicating that anger is a characteristic symptom of mercury poisoning, as shown by the expression "Mad Hatter." This expression refers not to anger but to insanity. Siblerud's citations are often inaccurate, and at one point he cited his own unpublished Ph.D. thesis which was under investigation. Many of the questions posed to subjects have nothing to do with the signs and symptoms of mercury and could well be attributable to other variables.

→ Sixth, Sibley's credibility is decreased by his dismissal from the Colorado State University graduate program. After being instructed not to represent himself as a student when he was not actively enrolled, Sibley submitted to an academic journal on paper making this claim. *Sibley v. Colorado State Board of Agriculture*, 896 F.Supp. 1506 (D. Colo. 1995).

18/

Respondent cites Heintze's study in both the 1985 and 1993 editions of his book. Although Heintze's study did not change, Respondent indicated in his first book that Heintze proved that mercury *may* methylate in the mouth but then cites it in the 1993 book for the proposition that it does.

19/

Eggleston and Nylander, "Correlation of dental amalgam with mercury in brain tissue," *The Journal of Prosthetic Dentistry* 58, 704-707, Dec. 1987. Eggleston's study is not reliable for a number of reasons. Eggleston does not state the methods used; there is no dental history provided (to determine occupational or other exposure to mercury); this is a retrospective study, which is the least reliable type; there is no quantification of the size of surfaces of amalgam; the journal in which it is published generally does not publish toxicological papers; the control results in patients without amalgams are not given; the study does not account for other conditions which could affect white blood cell count temporarily, such as colds; there is no clinical correlation between the mercury found and any illness; and the results are not predictable based on current immunological knowledge. A specific T cell responds only to a specific antigen, e.g., for mercury or tetanus. If a patient were to be sensitive at the T cell level to mercury and amalgams were placed or removed, the fraction of T cells which react with mercury is so small (perhaps one in a million) that no change would be seen in the total T cell count. The dramatic change in T cells reported by Eggleston (47% to 73%) thus makes no sense and has not been repeated.

20/

The allergic reactions seen on extremely rare occasion can be reproduced by patch testing. They are similar to a poison ivy cutaneous reaction, not the diseases treated by Respondent. The only exception to this is transient bacteremia, the transient event involving a spray of bacteria through the blood stream, which can cause endocarditis (damage the heart valves) to those with a genetic susceptibility to this heart condition.

21/

The Agency for Toxic Substances Disease Registry, which is a part of the Department of Health and Human Services, has issued a toxicological profile on mercury which proposes a minimal risk level ("MRL") for chronic mercury which results in exposure of .28 micrograms per day, below the estimated exposure levels from dental amalgam. The MRL is an extremely conservative and speculative calculation starting with the lowest observable effect level

(which caused tremors to factory workers exposed to mercury for 15.3 years) and then adding a series of safety factors (a factor of ten and then another factor of ten). The MRL assumes complete absorption of mercury, which is fact does not occur. It addresses occupational exposure to mercury, not exposure from dental amalgams.

22/ Eley *et al.*, "The release, absorption and possible health effects of mercury from dental amalgam: a review of recent findings (erratum to the original review published on September 11, 1993)," *British Dental Journal*, 175, 355-362, Nov. 1993.

23/ Mackert, "Dental Amalgam and Mercury," *Journal of the American Dental Association*, 122, 54-61, Aug. 1991.

24/ Herrstrom, et al., "Clinical study of oral galvanism: no evidence of toxic mercury exposure but anxiety disorder an important background factor," *Scandinavian Journal of Dental Research*, 101, 232-237, 1993.

25/ Fung, et al., "Determination of Blood Mercury Concentrations in Alzheimer's Patients," *Clinical Toxicology*, 33(3), 243-247, 1995.

26/ Ahlqwist, et al., "Concentrations of blood, serum and urine components in relation to number of amalgam tooth fillings," results from a population study of women in Gothenburg, Sweden, published in *Community Dentistry and Oral Epidemiology*, 1993.

27/ Chang, et al., "Examination of Blood Levels of Mercurials in Practicing Dentists Using Cold-Vapor Atomic Absorption Spectrometry," *Journal of Analytical Toxicology*, 11, 149-153, July/August 1987.

28/ In 5% of cases, retrograde fillings containing mercury are placed, but these are so rare that they do not comprise the basis for Respondent's theory and treatment.

29/ Price's research is seriously flawed in that it was not well controlled and the teeth implanted into animals were contaminated with other bacteria in the mouth during the extraction process, causing the injection of massive amounts of bacteria into the animals. Although not all bacteria are removed in a root canal, they are cut off from their food supply and die or become dormant. The body tolerates them without adverse effects.

30/ See Davis, et al., "Periapical and intracanal healing following incomplete root fillings in dogs," *Oral Surgery*, 31:662-765, 1971 [unfilled portion of root canal

does not preclude re-establishment of an intact and healthy periodontium]; Baumgartner, *et al.*, "Incidence of bacteremias to endodontic procedures: I. Nonsurgical endodontics," *Journal of Endodontics*, 2:399-402, 1976 [Bacteremias not produced when endodontic manipulations are confined to the root canal]; and Torabinejad, *et al.*, "Quantitation of circulating immune complexes, immunoglobulins G and M, and C3 complement component in patients with large periapical lesions." *Oral Surgery*, 55(2), 186-190, February 1983 [chronic periapical lesions cannot act as a focus to cause systemic disease via immune complexes].

31/ Respondent provided the periodontal ligament used; the specimens were not obtained independently. In addition, the sample size in the studies was too small to draw any conclusions. There were also too many variables to make an accurate assessment of the results, and in one study one-fourth of the teeth were the same as the controls. Haley reported the results of his studies in a letter to Respondent, but he does not indicate how the endodontically-treated teeth were processed or stored or why he chose to look at brain tissue.

32/ Neuralgia-inducing cavitation osteonecrosis ("NICO") is the appropriate term. Jerome Bouquot studied 3,200 cases of NICO and linked cavitations with blood dyscrasia (i.e., decreased blood supply to the bone in susceptible individuals) but found no link to autoimmune disease or neuralgia. Bouquot's research suggests that systemic disease may be a cause of NICO; it does not show the reverse. The cause of NICO has not been established.

33/ In order to claim that patients' amalgams caused immunological reactions shown on positive serum compatibility tests, one must conduct controls to show that amalgams actually caused this effect. For example, one could eliminate all the antibodies/immunoglobulins and see if a reaction occurred. If it did, this would indicate that mercury was not reacting with immunoglobulins. Respondent's use of distilled water as a control is inadequate for immunological test, as distilled water has no protein so does not precipitate proteins out. The experiment could also be controlled by analyzing the serum of persons who had never had amalgams or by repeating the test on patients whose amalgams had been removed.

34/ The fact that the Huggins Laboratory is certified pursuant to the Clinical Laboratory Improvement Act and its Amendments does not indicate that any of the tests performed by the laboratory have any clinical relevance, as this is not a criterion of CLIA inspection.

35/ In D.A.'s records at the Huggins Center, an attempt is made to manufacture reasons for the removal of her amalgams which are unrelated to mercury

toxicity. For example, her records at one point indicate that the reason for the removal is aesthetic and in another that the amalgams were defective. In fact, the only reason for the removal of D.A.'s amalgams was the purported treatment of mercury toxicity and MS.

^{36/}
— Sepsis is a condition whereby bacteria in the urinary tract can gain access to the blood stream. It is life-threatening.

^{37/}
— For ease of reference, this statute, which has been in effect since July 1, 1986 and thus during the entire period of treatment of the eight patients, is cited by its current citation.

^{38/}
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