



Other tests may be suggested depending on the particular circumstances of each case such as allergy testing (vitamins, foods, environmental, etc.), pH titration (to determine level of stomach acidity function), or anything else that is appropriate.

III. Diet and Supplementation: Supervised dietary supplementation is based on test results and supervised dietary counseling. The patient is asked to schedule an hour visit with a view to advise supplementation a minimum of 72 hours (optimal 1-2 weeks) prior to the dental appointment which involves actual removal of amalgam materials.

IV. The Dental Referral: If the patient has not already contacted a dentist, we shall provide a source list of area dentists who provide sequential removal of amalgams, safety procedures with respect to mercury in the dental office (air filtering system, rubber dam, etc.), and replacement with biocompatible materials, etc. All efforts are made to then coordinate the medical care with the dental work that is to be undertaken such as the Dental Amalgam I.V. with EDTA and vitamin C within two hours of each dental appointment for protection against release of mercury vapor during procedures. The I.V. may be administered prior to the amalgam removal with deletion of all vitamin C to avoid the interference known to occur with the anesthetic. After dental amalgam removal procedures, the vitamin C - I.V. or oral vitamin C supplements - may be taken immediately.

V. Office visit follow-up one week after amalgam removal. This may be a phone consultation.

VI. Office visit or phone consultation follow-up two weeks after amalgam removal.

VII. Follow-up blood tests at three weeks include CBC with differential and chemistry profile, along with urine mercury.

VIII. Follow-up blood tests at three months, post-amalgam removal, include CBC with differential, chemistry profile and urine mercury, along with a hair trace mineral analysis.

IX. Follow-up at six months will include a CBC with differential and chemistry profile, as well as urine mercury and hair trace mineral analysis.

All of the aforementioned procedures should be followed to the letter in order to obtain the best results from amalgam removal. Patients have been harmed by neglect of any one of these important phases. Do not take short cuts.

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Sharks, Salmon & Osmotic Therapies

Editor:

In the 1960s, I met Leonell Strong, the geneticist who developed a famous strain of mice that are extremely susceptible to breast cancer. My first research in endocrinology had to do with their estrogen metabolism, and ways to normalize it. Strong (who studied genetics with T.H. Morgan) was interested in the fact that sharks are not susceptible to cancer. As a geneticist, he saw this in relation to their "genetic stability," that is, the fact that they haven't developed beyond an early stage of evolution, and he believed that cancer is a result of genetic instability. He found that injections of an extract of shark's liver prevented mice from developing breast cancer; however, similar extracts from other kinds of liver had similar effects on the mice. Since his mice had too much estrogen, I supposed that their livers were deficient in something needed to eliminate estrogen, since the liver normally is a powerful regulator of estrogen, using a certain system of "detoxifying" enzymes. (As it turns out, the thyroid hormone is the basic regulator of this detoxifying function.)

As I studied estrogen in other situations, two features of its action stood out - it interferes with respiration, and it causes cells to take up water. Its other effects seem to follow from these. In the 1920s, it was found that hypotonicity, an excess of water, stimulates cell division (while hypertonicity inhibits it). Around 1940, Hans Selye found that estrogen's systemic effect mimics the shock phase of the stress reaction. In shock, deficient circulation of blood and thus deficient oxygenation of tissue are the main problem, and Selye considered the adrenal steroids to be crucial in resolving the problem, and creating adaptation to the stress. But the adrenal

steroids can have their own undesirable consequences.

Sharks, besides being primitive and not suffering from cancer, are physiologically unique in another way: their body fluids are osmotically in balance with seawater, making them hypertonic to other animals' body fluids. The mineral content of sharks' blood is not very different from that of other animals. The osmotic difference is made up by a very high concentration of urea (and of trimethyl ammonium). In general, animals that live in water are able to get rid of ammonia easily, because it is very soluble in water, and the excretion of nitrogen as urea and uric acid is considered to have evolved to avoid the toxicity of the large amount of ammonia that would otherwise accumulate in land animals. Therefore, it seems that sharks' urea evolved as a kind of osmotic buffer (rather than as an excretory product), keeping them in osmotic balance with ocean water, without having to deal with internalization of the extremely high (3.3%) sodium content of ocean water.

Another kind of fish, the salmon, which return to fresh water for reproducing, show the other extreme of adaptation to an osmotic problem. After living "isotonically" in the hypertonic ocean environment, keeping their mineral content and osmolarity lower than sea-water's, they suddenly have to readapt to the extremely hypotonic fresh water. The secretion of prolactin and glucocorticoid steroids seems to facilitate this sudden adaptation, but those hormones also seem to produce an explosively rapid kind of aging. I think their condition is similar to the "Cushingoid" symptoms that frequently appear in middle-aged people.

Highly energized cells can resist the osmotic stress of too much water in their environment, and tired cells can't. Removing the stress, by making the surrounding fluid isotonic or slightly hypertonic, can protect the cells' energy level, and give them a rest. Until about 1940, the use of hypertonic solutions in therapy was fairly common. Books still mention the use of urea, USP, as a diuretic to treat brain swelling, but I haven't heard that it is still used this way in the United States. Veterinarians sometimes use hypertonic urea to treat uterine inflammation and infected wounds. Early in this century it was often mentioned as a safe disinfectant and promoter of healing



More Letters

for wounds. It was sometimes used as a powder, and was sprinkled pure onto skin grafts or between bone fragments in repairing fractures. Although it caused some pain, people generally thought it accelerated healing while preventing infection. (Typically, 5 grams of powder would be closed into the wound; milder treatments would probably have been possible, but wartime conditions didn't foster subtlety in medical research.) (Symmers, *Lancet*, December 4, 1915.)

Hypertonic sodium chloride (Clifford White, *Lancet*, October 30, 1915) was also used to treat infected wounds, and its success in treating war wounds led to its use as a vaginal douche in treating various inflammations and infections, including infections associated with child-birth, salpingitis, cellulitis, gonorrhoea, vaginitis, and erosions of the cervix, and in preparing a cancerous cervix for surgery. Irrigation of the abdomen with the saline solution gave good results in acute infections that required abdominal drainage. White used a solution containing 1/2 ounce of sodium chloride and 1/16 ounce of sodium citrate in a pint of water. M. Englaender (*Med. Klin.* January 2, 1916) used intravenous injections of 100 ml. of 2% NaCl to treat a variety of infections and inflammations.

In Russia, Gubin (*Russky Vrach* 14(38)) treated sciatica with two glasses of warm water containing 1.4 teaspoonfuls of NaCl, placed in the rectum; it caused profuse sweating and diuresis.

I have known many people with food allergies (or with lingering cold or flu symptoms) who said that although their abdomens were distended and uncomfortable, they were so thoroughly constipated that no laxatives worked. When their bowels did move, they sometimes described ribbon-shaped feces. Occasionally I saw their X-rays, in which an opaque "meal" showed up as a very thin and intermittent filament. It appeared that the wall of the bowel was enormously swollen. One woman complained that enemas were useless, because when a quart of water was injected, nothing returned from the bowel, though she would have to urinate more than usual. The colon was obviously drinking the water. I suggested that she try a hypertonic glucose and salt enema, with an aspirin added, neutralized by a little soda, and she immediately had good results.

People with less complete obstruction can get the same effect by drinking a hypertonic solution of epsom salts and sodium chloride, with an aspirin. Although this osmotic deflation of inflamed tissue is crude, I think it helps to promote real recovery, by reducing the reactivity of the tissue, and allowing it to recover its normal energy patterns.

In PMS, edema is a common problem, and it used to be thought that edema of the brain was responsible for the irritability or depression or other nervous symptoms, and diuretics such as ammonium compounds and urea were commonly used. (Premenstrual salt cravings are the result of the estrogen-disturbed water balance, and salt-restriction for PMS is as inappropriate as it is for pre-eclampsia or toxemia of pregnancy.) Alkaloids are often active in modifying the water content of physical systems, as well as of cells. The alkaloids that are often used in treating PMS seem to favor improved oxygenation and elimination of edema. I suspect that these drugs, and the natural hormones progesterone and pregnenolone, act in the same direction as hyperosmolarity.

For several years, I have been interested in the biological effects of ammonia, and compounds that are metabolically close to it. There is clear evidence of ammonia's antiviral effect, which stimulated extensive research by drug companies seeking patentable antiviral amines. Most simple substances have regulatory functions in themselves, besides participating in other systems. Besides viral immunity, I think ammonia is involved in regeneration and nerve modulation. Urea, inosine, GABA, the polyamines, and betaine derivatives (e.g., gamma-butyrobetaine) are closely related to ammonia metabolism, and combinations of them will probably have many useful biological effects.

Sodium chloride, glucose, and other substances can be used at high concentrations for their osmotic effects, but they also have chemical and metabolic effects that aren't necessarily desirable. Both osmotic and biochemical effects should be taken into account in a given therapy.

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Homeopathy vs Allopathy

Editor:

We would like to thank Dr. Saul Pilar of Vancouver, B.C. for his thoughtful and informative discussion, "What Healed Sarah?" We appreciate and welcome feedback and discussion stimulated by our articles. There was a great deal of improvement when Sarah was given the remedy, *Calcarea carbonica*, as well as improvement in laboratory values. Indeed, whenever Sarah has relapsed, the remedy once again allows her enough energy to function, enables her to lose weight, stops hair loss and helps her think clearly again. This does not occur until she gets the remedy, which stimulates rapid improvement in her symptoms. Her hypothyroidism has not resolved on its own, but continues to be improved under continued homeopathic treatment, without the need for Synthroid.

We agree that it is important not to attribute success to a treatment, homeopathic or allopathic, when the body would have done the same healing without it. But let's not ignore the effects of a treatment which has produced obvious improvement, subjective and objective, just because some patients have improved without it in the natural course of their healing process.

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