Iodine – The Universal & Holistic Super Mineral

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Recently Dr. Mercola surprisingly stated that the highest amount of daily iodine intake should be no more than 400 micrograms. This is only slightly higher than the FDA recommendation, which is 150 to 290 micrograms daily, dependent upon age, gender and life cycle. However, it is dramatically less than some of the leading iodine medical experts suggest, as closer to, at least, 12 to 18 milligrams daily, approximately 45 times higher. Why this discrepancy? And how can Dr. Mercola, who is often so correct in his understanding, in my opinion, miss the mark exponentially?

Historically, as early as 1911, people normally took between 300,000 – 900,000 micrograms daily without incident. This is over 2,000 times more than Dr. Mercola's recommendation. How is it that now only 1/5,000th of this dose is now considered safe? In 1948 there was a poorly performed and, since then, never replicated study alleging what is known as the Wolff-Chaikoff effect. The Wolff-Chaikoff effect suggested that theoretically hypothyroidism could occur as a result of excess iodine. This study indicated a decreased dosage to 2 milligrams daily would be safer. (This is still an amount 5 times higher than what Dr. Mercola is recommending.) [1] Although the 1948 Wolff–Chaikoff study suggested that a temporary inhibition of thyroid hormone synthesis may happen, no clinical symptoms of hypothyroidism have ever been noted with higher doses according to Dr. Mark Sircus in his book on iodine - *Iodine: Bringing back the Universal Medicine*.[2] Dr. Sircus, a world expert on iodine, feels that people may safely take 10–200 milligrams daily without clinically adverse effects. Even the Food and Nutritional Board at the Institute of Medicine has set the tolerable upper limit of 1,100 micrograms of iodine daily (3 times higher than Dr. Mercola's recommendation).[3] [4] [5] Other researchers have used between 3,000-6,000 micrograms/day to prevent goiter (14 times higher than Dr. Mercola's recommendation).[6]

By looking at the overall holistic iodine story, we can create a fuller, more accurate understanding of this discussion. Iodine is found in every single one of our body's hundred trillion cells. Without adequate iodine levels life is impossible. Iodine is the universal health nutrient and brings health on many levels.

It is interesting to note, when addressing the question of safe dosage, that higher iodine levels have been used in studies since the early 1900's. For example, in 1917 through 1922, Dr. David Marine proved that iodine reversed goiter in a study in which 2,000 schoolgirls were given an equivalent of 18.6 milligrams daily (18,600 micrograms) for 2 ½ years with a dramatic success rate. This study was the reason the U.S. began to iodize salt. Sadly today less than 20-25% of salt is iodized anymore. And with the unfounded "no salt-low salt" scare from the 1984 NHANES study, even

fewer are receiving iodine from iodized salt, which only has about 10% bioavailability anyway.

In 2003 Dr. Zhang showed that potassium iodide reversed lung cancer tumors in mice. The total amount administered was 100 milligrams (100,000 micrograms) daily for 20 days, and this is approximately 50 times more than Wolff – Chaikoff recommended in 1948 and 250 times more than Dr. Mercola's recommendation. The study lasted for 60 days: 34 days to grow 5 mm tumors, and 26 days for the lung cancer tumors to significantly decrease.[7]

In 1993, Dr. Ghent administered to 1,368 patients 5 milligrams, or 5,000 micrograms, daily (12.5 times more than Dr. Mercola's recommendation) with no evidence of the Wolf-Chaikoff theoretical problem of hypothyroidism. This is almost 12 times more than Dr. Mercola's recommendations. This was done by Dr. Ghent, who, at this dosage, reversed fibrocystic breast disease with great rates of healing. Iodine deficiency is not only associated with fibrocystic breast disease, but also higher rates of breast cancer.

In a most significant study called the Iodine Project, done from 1997 through 2005, Dr. Guy Abraham, Dr. David Brownstein, and Dr. Jorge Flechas followed 4,000 patients and administered 12.5 to 100 milligrams daily, with 100 milligrams administered to diabetics primarily, because low thyroid function is also associated with Type 2 diabetes. They had positive results with only three adverse reactions out of 4,000 people (possibly allergic reactions to the binding agents, excipients, fillers, preservatives and/or synthetics commonly found in tablets, capsules and even liquids as opposed to the bioavailable form of iodine itself). This research group theorized that because in Japan the average intake was 13.8 milligrams, and Japan had significantly less breast and prostate cancer and better health and longevity than in the US, that higher doses of iodine could be safely used. In this 7-year study, they observed reversed fibrocystic breast disease, decreased insulin requirements in diabetics, significantly less need for medication for hypothyroidism, resolution for fibromyalgia, and also resolution of migraine headaches. In the study by Dr. Abraham, et al, the iodine ranges were somewhere between 12.5 and 100 milligrams (100,000 micrograms) daily and were considered safe dosages. This is exponentially greater than Dr. Mercola's recommendation.

From a worldwide perspective, the current level of iodine deficiency is pandemic. Over one fifth of the global population (1.5 billion people) is living on iodine deficient soils and are subject to significant iodine deficiency. According to the WHO, 72% of the global population is iodine deficient. According to the more recent Dr. Abraham, et al, study cited, 96% of the U.S. population is iodine deficient. This is a significant problem with significant consequences, as iodine deficiency is among the top two causes of mental retardation. Associated with this increased iodine deficiency is a 690% increase in cretinism, mental retardation, and ADHD in the last several decades.

From a larger physiological perspective, it is important to realize that the thyroid is only one gland of many glands and tissues that needs iodine. Other glands/organs/systems with high iodine uptake are the breasts, ovaries, cervix, blood, lymph, bones, gastric mucosal, salivary, adrenal, prostate, colon, thymus, lungs, bladder, kidney, and skin. In perspective, the thyroid holds 50 milligrams of iodine, the breasts hold 200 milligrams, the skin holds 400 milligrams of iodine, and the whole body holds 2000 milligrams, and possibly much more. Iodine is found and used in every hormonal receptor in the body.

There are so many important functions of iodine that it is hard to put them into proper order of importance. The implications of iodine sufficiency go far beyond the levels necessary to avoid cretinism, brain damage, and goiter; and based on the previous cited studies, it is possible that the FDA's recommended dosage may not even give the minimal protection.

These important iodine functions include:

1) Iodine helps synthesize thyroid hormones and prevents both hypo- and hyperthyroidism.

There is little awareness of the importance of iodine in the synthesis of thyroid hormones, particularly T3 and T4. This is because in 1949 physicians stopped using tinctures of iodine, and in 1973 physicians stopped using the basal body temperature, which still remains the gold standard test for diagnosing hypothyroidism (97.6 - 98.2 is normal). In addition, hardly any physicians use the iodine loading test to determine iodine deficiency. Furthermore, this is the area where people are concerned with the suppression of thyroid function. Thyroid hormones control metabolism, temperature, heart rate, glucose consumption, and even blood lipids.[8] [9] [10] Iodine also helps to regulate cortisol. It improves immune function.[11] [12]

2) Iodine sufficiency reverses hypo- and hyperthyroidism.

Obesity or emaciation (hypothyroidism and hyperthyroidism, respectively) both may be caused by thyroid issues, which iodine may treat, prevent and even reverse. The early 1900s study conducted by Dr. Marine proved reversal of goiter, a condition associated with both hypo- and hyperthyroidism. Fibromyalgia is another problem stemming from iodine deficiency, as is chronic fatigue.

From a systemic holistic perspective, adequate iodine is crucial for our health. It is the universal health mineral. Its role goes far beyond the less than 400 micrograms used to prevent cretinism and goiter. Its many important roles also give us a clue as to the seriousness of the 50% increase in iodine deficiency in the last 30 years, including the 96% of Americans who are presently iodine deficient. This is why today, more than ever before, there is a real need to supplement with iodine with holistically adequate levels.

More recent "bogus" scares about iodine use have made things even worse for iodine sufficiency. When the Wolff-Chaikoff unsubstantiated and unreplicated theoretical data resurfaced in 1969, it created a media scare without substance, and people began removing iodine from bakery bread (1 slice used to supply 100 micrograms of iodine) and replaced it with bromine, which, as previously stated, is one of the top twelve most harmful toxins and carcinogens on the planet. Bromine forces iodine from the system by competitive inhibition. Additionally, the serious I-131 exposure from Chernobyl and Fukushima, the radiation from medical procedures, and the ethylene dibromide from chemtrails all force iodine out of the body. Perchlorate from rocket fuel and fluoridated and chloridated water also force iodine out of the system, with a single perchlorate displacing 100 iodine atoms compared to a 1:1 ratio of simple chlorine displacement of iodine.[13] These toxic halogen pollutants have increased over time, and iodine deficiency has become more seriously pronounced in today's population. Iodine, when activated in its bioavailable form (atomic singlet iodine: I-), is used first to detoxify the system; so there is not enough iodine initially, especially with low doses, to support the thyroid hormone function, unless adequate iodine is added into the system. One can see there are a number of modern stresses contributing to this widespread iodine depletion.

There is a suggestion about the possibility of excess iodine, which is that there may be a transient (26-40 hours) hypothyroidism as described by Dr. Brownstein in his book *Iodine: Why You Need It. Why You Can't Live Without It*.[14] However, a one to two-day transient decrease in thyroid function is physiologically irrelevant in view of the bigger holistic picture. There is also an increase in TSH (thyroid stimulating hormone) with increased iodine, which may last up to six months. This is not a sign of hypothyroidism. This is related to the fact that the whole body is deficient in iodine, and TSH stimulates the production of sodium-iodide-symporter (NIS). Without adequate NIS, iodine cannot enter the cells and be utilized. NIS is a carrier system into all the cells, and when this system becomes deficient, the whole body becomes deficient. The key practical reality is that the people who increase their iodine intake do not have signs of hypothyroidism (such as fatigue, hair loss, headaches, weight gain, and dry skin), and they maintain normal T3 and T4 levels. Deficiency of iodine may also contribute to low stomach acid and decreased ability to absorb B12 and calcium.

If one is only diagnosing hypothyroidism based on TSH scores (as most allopaths do), one may become confused. Clinically if one looks at these previously mentioned factors, it is clear that TSH levels may rise as high as 5 to 30 units per liter, but, again, that should not be confused with actual hypothyroidism. There are subtle things that can be mistaken for hypothyroidism, such as a healing crisis mistaken for a problem with iodine. Drs. Abraham and Brownstein in their work with 4,000 people were only able to identify 3 of 4,000 people who had a negative allergic response to the iodine. People do not become allergic to iodine per se. According to Dr. Flechas, people "allegedly" allergic to iodine such as the protein-

bound iodine found in seafood are more likely allergic to the toxic seafood rather than to the iodine itself. The same is so for iodine supplements such as molecule-, compound-, or complex-bound iodine in which people are more likely allergic to the binding agents, excipients, fillers, preservatives and/or synthetics commonly found in tablets, capsules, and even liquids instead of iodine's bioavailable form. Such reactions are even less likely with singlet or unbound iodine. Actually, iodine can help eliminate food allergies according to Dr. Derry (p. 15 from *Breast Cancer and Iodine*, by David M. Derry, MD, PhD, copyright 2001).

3) Iodine supports apoptosis.

From a broader perspective, one of iodine's major functions, in conjunction with oxygen, is to support the process of apoptosis (programmed cell death of unhealthy cells), to protect against cancer and facilitate youthing. This is particularly relevant in preventing cancer and aging. Iodine is essential for apoptosis. For example, adequate iodine plays a role in protecting against stomach cancer. (People living in iodine deficient areas of the world have higher rates of stomach cancer.[15]) This makes the point that not only the thyroid gland but also breast tissue and the digestive tract are high in iodine.[16] It is no accident that iodine sufficiency is associated with lower rates of cancer in these high iodine tissues.

4) Iodine activates hormone receptors and helps prevent certain forms of cancer.

For the activation of hormone receptors (as are present in all the body's cells), the optimum intake of iodine is two orders of magnitude greater than that necessary to prevent goiter. According to Dr. David Derry from Canada, there are active thyroid hormone sites in all the mitochondria, and when there is enough iodine to activate the thyroid, we increase ATP production in all cells as well. This is important because cancer cells have 200-300 mitochondria per cell, whereas healthy cells have 3,000-5,000 mitochondria per cell, yielding significantly more energy and protection from cancer. According to Dr. Brownstein, the primary reason for mitochondrial failure is iodine deficiency. The primary cause of cancer, from an energetic perspective, is mitochondrial failure. It is clear that the prevention of cancer, particularly cancer of the breasts, thyroid, ovaries, stomach, and esophagus, is increased with iodine sufficiency.[17] Iodine serves to prevent lipid peroxidation, especially in breast cancer. Deficiencies of iodine also increase the incidences of breast cancer.[18] [19] [20] [21] [22] In a study of 60 cancer patients given an iodine test, all were found to be seriously deficient in bodily stores of iodine and many had excessive bromine. Women with iodine deficiency have been found to have three times greater incidence of breast cancer. High intake of iodine is associated with a lower risk of breast cancer. In the treatment of prostate and breast cancer, it is reported in Dr. Sircus' book that Dr. Brownstein uses between 200 and 300 milligrams of iodine daily, with higher doses for more serious and difficult diseases. In perspective, this seemingly "high" dose is still far lower than what the

11th edition of the 1910-1911 Encyclopedia Britannica cites as the "usual" doses of 300-900 milligrams (300,000 to 900,000 micrograms!) of iodine daily.

5) Iodine protects ATP function and enhances ATP production.

Another important aspect of iodine is its ability to protect ATP (the biological units of energy). Sufficient iodine in all tissues and cells helps to produce a healthy 36 ATP's through the Krebs cycle, which has profound implications for all levels of function including brain function. When we are low in iodine, we tend to move into glycolosis, which only produces 2 ATP's, bypassing the normal Krebs cycle, and so bypassing the mitochondria altogether. This significantly lower ATP production (18 times less!) greatly contributes to low vital life force and disease.

6) Iodine prevents fibrocystic breast disease.

In both women and laboratory animal studies, there is a relationship between low iodine and increased fibrocystic breast disease. Fibrocystic breast disease has shown significant improvement with the intake of 3-6 milligrams of iodine daily, with 65% having improvement.[23]

7) Iodine decreases insulin needs in diabetics.

Dr. Brownstein's work found that iodine helps decrease insulin needs in diabetics when they use 50-100 milligrams (50,000 to 100,000 micrograms!) daily.

8) Iodine helps support protein synthesis.

Iodine is essential in thyroid hormone synthesis. If deficient, protein synthesis is disturbed. Thyroid hormone has two effects: increased protein synthesis and increased oxygen consumption. Thyroid hormones are essential for life as they activate key biochemical reactions including protein synthesis, enzymatic activities, and function of target organs such as development of brain, heart, muscles, pituitary, and kidneys. Therefore iodine is important in the development of the fetus. Thyroid hormone regulates mitochondrial protein synthesis. Iodine deficiency causes hormone dysfunction in all bodily hormones.[24] [25] This coincides with the 1954 Drs. Eartly and LeBlond study in *Endocrinology* showing all pituitary functions are mediated by T4 suggesting the thyroid and not the pituitary is the true master gland.

9) Iodine deficiency is a global health threat.

Iodine deficiency, in the general population, yields 1-10% cretinism, 5-30% brain damage, and 30-70% loss of energy. In this holistic context, iodine deficiency is a major threat to global health. Iodine deficiency has increased fourfold in the last 40 years and is considered the most common and yet preventable cause of brain damage throughout the world. Low thyroid symptoms include puffy skin, hoarse

voice, sparse and course hair, impaired mental function, dry and scaly skin, weight gain, slow physical functioning, and slow mental functioning. If a pregnant woman is deficient, the growth and development of the fetus is at risk of increased rates of mental retardation, dyslexia, ADHD, hyperactivity, short stature, decreased child survival, miscarriages, still births, and apathetic children with lowered capacity for movement and speech. Those with the highest and lowest TSH also have increased Alzheimer's disease. There are 59 diseases associated with a dysfunctional thyroid and 52 million people in the U.S. with thyroid disease, which may be a gross underestimation because it is not based on the gold standard of underarm temperature. Another fact in the total population picture is that estimates show that more people have died from iodine deficiency than died in both World Wars. This clearly illustrates the importance of iodine for brain development and overall health. Iodine deficiency also increases risk of death from thyroid and breast cancer. In studies before Fukushima, Japanese women had about 1/3 the breast cancer rate as American women and had 50 times greater iodine intake than American women. Dietary iodine has been proven to reduce the size of both benign and malignant breast tumors.[26] [27] [28] About 5 milligrams daily with no toxic effect has been found to be effective in the treatment.[29] [30] [31]

10) Iodine destroys pathogens, molds, fungi, parasites, and malaria.

Another major iodine role to consider—as we necessarily near the end of antibiotic use with the evolution of resistant microorganisms, hospital superbugs, and powerful new strains of tuberculosis and malaria—is iodine's power as a negatively charged substance to destroy all pathogens, molds, fungi, and parasites, including malaria. Iodine can be used both to effectively treat and prevent malaria. It is the most powerful antibiotic we have, and while it is not patentable, it can help save the world from all these uncontrolled resistant infections. It is also said to be effective in treating tuberculosis. This effect was mentioned as early as June 1st, 1905 in the NY Times. As more antibiotic resistant bacteria emerge, iodine may become the "new" lifesaver on many levels.

11) Iodine supports immune function.

Iodine plays a role in the physiology of inflammatory responses. This is important in the immune system. Iodine increases the movement of granulocytes into areas of inflammation and improves the phagocytosis of bacteria by granulocytes and the ability of granulocytes to kill bacteria. Since all disease is associated with inflammatory response, iodine becomes key for youthing the body.

12) Iodine eliminates toxic halogens from the body (including radioactive I-131).

Another major health protection role iodine plays is to increase the release of toxic halogens (fluorine, bromine, and chlorine) from the cellular systems. These toxic halogens negatively impact all our organs including thyroid function. With the

first dose of iodine given, we have a 78% increase of bromine discharge. Bromine is recognized as one of the top twelve most harmful toxins on earth. (Bromine is a known carcinogen, which is outlawed in China, Europe, and much of the world except in the U.S.) Bromine is found in most bakery goods in the U.S. It is also found in pesticide-laden produce, mattresses, cell phones, fire retardants, and hot tubs. We also see a 50% increased discharge of chlorine when iodine is taken. Iodine also chelates mercury, lead, and cadmium. I would hypothesize that bioavailable, active iodine chelates all positive charged toxins, such as pesticides and herbicides, in general because of its negative charge (I-). Due to its chelating powers I suggest one start taking iodine at a slower rate because of this detox effect. It is important to start with a low dose and build up, while checking the urine for discharged toxins. These healing detox symptoms should not be confused with iodine toxicity. This is roughly equivalent to focusing on the healing crisis that sometimes emerges when one transitions into live foods or fasting and to blame the diet or the fasts rather than treating the healing crisis as a healthy detox activated by the live foods or fast. To stop iodine supplementation in both these scenarios is premature and derails the healing process. It is important to look beyond any healing crisis to the wellness that awaits on the other side of this detoxification.

Flouride is one of the toxic halogens associated with cancer and known to accumulate in the thyroid and the pineal gland. Fluoride is forced out by iodine sufficiency or saturation. The pineal gland is important for producing serotonin and melatonin. Flouride is said to calcify the pineal gland. Iodine, because of its similar outer electron shell, in higher saturation levels, can bombard and push the fluoride out of the thyroid and pineal as well as other tissues. The pineal gland is one area, like the thyroid, where fluoride is highly concentrated. In the pineal gland, fluoride interferes with the secretion of melatonin. As the iodine flushes out the fluoride it enhances the function of the pineal gland. When fluoride is pushed out of the thyroid and pineal gland, there is an increase in melatonin and sexual maturation, better calcium metabolism, better thyroid function, post-menopausal function, and less cancer and fibrocystic breast disease.

One of the most critical toxic health issues we have today is the exposure of radioactive I-131 from Fukushima. We still have continued and increasing exposure from Fukushima, and unlike Chernobyl, Fukushima has not been sealed off. When the thyroid, as well as the whole body, is filled with healthy iodine (I-127), again, because of I-127's similar outer electron shell, in higher saturation levels, it can provide significant protection of vulnerable receptor sites from uptake of radioactive I-131 and also push out radioactive I-131. This is known as competitive inhibition. This explains why Chernobyl survivors that took iodine, even some who took it after the nuclear fallout, did escape thyroid cancer. The point is that most allopaths do not understand that I-127 may actually displace I-131. Some clinical examples suggest that I-127 can indeed displace radioactive I-131.

Iodine, as previously expressed, kills viruses, bacteria, and fungi, and forces the halogens and other toxins out of the system. When toxins are released and

parasites, bacteria, viruses, and protozoans are killed, one may have a Herxheimer reaction, which may lead to a healing crisis. We may also have a healing crisis reaction from these toxins leaving the system. However, I should point out that while no one has ever died from iodine overdose or allergic reaction, each year 103,000 people die from properly prescribed allopathic drugs. The allopathic community's iodine phobia is ironic in this light.

13) Iodine regulates estrogen production in the ovaries.

Healthy iodine levels also seem to be important in regulating estrogen balance. The three main estrogens (estrone (E1), estradiol (E2), and estriol (E3)) come into balance with iodine sufficiency. Iodine has been shown to bring a healthy balance between these hormones in both men and women. The ovaries, testes, and adrenals all produce estrogen. According to Dr. Brownstein, iodine governs estrogen production by the ovaries. It is interesting to note that estrogen and progesterone compete for the same receptor site and that infertility and miscarriage are both associated with estrogen dominance and progesterone deficiency, underneath which lies iodine deficiency. The World Health Organization has related iodine deficiency to decreased fertility and increased perinatal and infant death.[32] According to the International Council for the Control of Iodine Deficiency (ICCID), "noticeable iodine deficiency disorders are problem pregnancies that result in miscarriages, stillbirths, and low birth weight infants who have lower rates of survival."[33] Besides solving problems with the reproductive organs, iodine seems to be key in solving so many of today's diseases related to estrogen dominance.

14) Iodine is anti-mucolytic (meaning it reduces mucus catarrh).

Iodine helps decrease mucus catarrh in both the intestines and the sinus. Iodine effectively cleanses and detoxifies lymph, as lymph is a carrier of iodine. Most Americans are laden with parasites, bacteria, viruses, and toxins in their lymph because they are iodine deficient. Dr. Mercola cites the lymph carries up to 100 times the parasites and toxins as carried in the blood. The lymph is the "vacuum cleaner" of the blood, and the "vacuum bag" is full in today's world. So one can see why a healing crisis (a Herxheimer's reaction) after iodine intake may occur today more rapidly than back in the early 1900's, before the mass pollution of toxic halogens. In terms of treating excess mucus and chronic lung diseases, doses of iodine up to six times higher than the FDA recommendations have been safely administered for months. Iodine sufficiency helps to remedy this lung issue. At the turn of the Twentieth Century, gram amounts of iodine were used for chronic lung disease.

15) Iodine neutralizes hydroxyl ions and hydrates the cells.

Iodine helps to eliminate oxidative stress because it neutralizes hydroxyl ions (one of the most potent free radicals); so it has a particular antioxidant effect. According to Dr. Donald Miller, MD, hydroxyl ions never have a chance to form when

iodine is present with active oxygen; rather, H2O is created.[34] This is particularly positive considering most disease is related to chronic dehydration. According to Dr. Brownstein, iodine is a more powerful antioxidant than Vitamin C, Vitamin E and phosphatidyl choline. According to Sebastiano Venturi (in *Evolution of Dietary Antioxidants – The Role of Iodine*), iodine is an important antioxidant that has antitumor and antisclerotic activity. When iodine is used as a supplement, antioxidant activity increases and immune system function increases.

16) Iodine makes us smarter.

As previously mentioned, iodine helps with mental functioning. Low iodine is associated with low IQ's with a difference of up to 13.5 points as cited in the Bleichrodt study of 1994 in children. However, iodine deficiency is also associated with mental functioning in adults, because iodine not only chelates lead, but, according to Dr. Jorge Flechas, iodine prevents lead from lodging in the body in the first place. This occurs if enough iodine is supplemented, as discussed above, in order to push out fluoride, a culprit responsible for lead accumulation in the body. Low thyroid function decreases brain circulation, which slows intellectual function. Dr. Steven Langer in the book *Solved: The Riddle of Illness*, points out that low thyroid function is associated with cognitive impairment, memory loss, depression, slowness of mind, anxiety, suicidal tendencies, and a variety of psychiatric disorders. Bleichrodt, in 1994, did a meta-analysis looking at 17 studies showing iodine sufficiency increases IQ by 13.5 points in children.[35] High levels of iodine are found in the brain, especially with the parts associated with Parkinson's disease, such as the substantia nigra. In terms of the brain, Dr. S. Cunnane suggests that iodine is the primary brain-selective nutrient in human brain evolution. Iodine deficiency is the main cause of decreased intellect. Additional research has shown that parasites in the gut eat up a great deal of serotonin, 95% of which is produced in the intestines. When parasites are destroyed with iodine, there is an increase in serotonin, which is excellent for mental functioning.

17) Iodine prevents heart disease.

The thyroid regulates heart rate. Dr. Broda Barnes, the father of the pro-thyroid awareness movement, demonstrated in research with 1,000 people that the use of thyroid glandular (high in iodine) showed there was an extremely significant reversal and prevention of heart disease outperforming on so many levels results of the Framingham Study that cardiologists tend to reference today. Hypothyroidism leads to heart disease. The treatment of using thyroid glandular (again, high in iodine) actually prevents heart disease and points to the importance of iodine itself in preventing heart disease. Associated with this scientific understanding is that all fats deplete the total body load of iodine, according to Dr. Derry. We also know that hypo- and hyperthyroidism creates low-density lipoproteins (LDH) and increases total cholesterol and raises risk of atherosclerosis.[36] [37] [38] Hypothyroidism, which is a result of low iodine, weakens the heart muscle causing cardiac arrhythmia.[39] [40] [41] Iodine deficiency has indeed been associated with increased cardiovascular disease.

This results in decreased myocardial contractility and increased peripheral vascular resistance as well as disorders in lipid metabolism.

18) Iodine is needed with the use of cordless phones, cell phones and now smart meters to prevent hypothyroidism.

A recent study published in the International Journal of Radiation Biology, Vol. 86, No. 12, December 2010, pp.1106-1116, shows that pulsed 900MHz radiation, a frequency range emitted by cordless phones, cell phones, and now the new "smart" meters being quickly deployed throughout the world by utility companies, induces hypothyroidism. Hypothyroid is also considered a precursor to, and a common condition also associated with, cancer, diabetes, and heart disease, which are all major killers today.

19) Iodine supports pregnancy (as the fetus undergoes more apoptosis than any other developmental stage).

As mentioned, iodine supports apoptosis; hence, pregnant women need more iodine because the fetus goes through more apoptosis than any other life phase. Even the FDA suggests 47% more iodine for pregnant women and 93% more for lactating women. This explains the horrendous infant mortality rate/birth defects documented in Chernobyl and what is now beginning in Fukushima due to global spreading of the manmade I-131 radioactive isotope of iodine rapidly displacing the I-127 stable isotope of iodine. Infant mortality rates increased 900% in Boston, Massachusetts three months after Chernobyl. Likewise, Joseph Mangano of the Radiation and Public Health Project had an article published in International Journal of Health Services in December of 2011, in which the 48% infant mortality rate in Philadelphia, Pennsylvania was based on gathered U.S. Centers for Disease Control data ten weeks after Fukushima.[42]

20) High doses of iodine may be used to reverse certain diseases.

At 6 grams daily (which is 6 million micrograms/day or 6,000 milligrams/day!), a much higher dose, iodine has been used to cure syphilis, skin lesions, and chronic lung disease. In perspective, microgram levels prevent and cure cretinism and goiter, milligram levels help prevent and cure many things as already stated such as cancer, fibrocystic breast disease, and Alzheimer's, and gram levels have been used to treat syphilis, skin lesions, and chronic lung disease.

21) High doses of iodine may be used for wounds, bedsores, inflammatory and traumatic pain, and restoration of hair growth when applied topically.

Iodine has also been used in gram amounts for wound care, bedsores and pain. Iodine has many other uses, including relieving headaches and even restoring hair growth. The science of trichology has known for decades the importance of

applying iodine to the scalp to restore proper follicle function and hair growth. Iodine is also used to eliminate toenail fungus.

22) Iodine helps in the diminishing of tissue scarring, cheloid formations, and Dupuytren's and Peyronie's contractures, which are hyper-scarring conditions.

23)Iodine supports spiritual development.

I first wrote extensively about the chakra system in 1986 in my book *Spiritual Nutrition and the Rainbow Diet.* The chakra system is a subtle energy system that has been described for thousands of years in spiritual traditions. In Sanskrit, the word *chakra* means "wheel". In the Bible, St. John refers to these centers as the "seven seals on the back of the Book of Life." In early Christianity they were often referred to as the "seven churches". The Kabbalists refer to these centers as "the seven centers in the soul of man."

The chakra system has been described by Western clairvoyants and Eastern yogis for centuries. In the late 1960's and early '70's, Dr. Hiroshi Motoyama, Director of the Institute for Religion and Psychology, a yoga expert and a scientist considered by many to be one of the leading researchers in the area of chakras, has done some important work documenting the physical reality of chakras.[43] More recently, medical doctors and other researchers have begun to explore the existence and function of the chakras, such as the research done by Professor Emeritus Valerie Hunt at UCLA.[44] Hunt was a professor of Physiological Science from 1948-1981 at UCLA, and is presently the director of the Bioenergy Fields Laboratory. In 1973, the physician W. Brugh Joy discovered these energy centers spontaneously. He found that when he held his hands over certain areas of a patient's body, there were areas of increased heat energy. Mapping these areas, he realized that they were approximately the same as the yoga descriptions of the chakra locations.[45] Lawrence Bagley, M.D., in the 1984 issue of the American Journal of Acupuncture, describes how by using the Nogier pulse he was able to determine the location, size, shape, and rotational direction of the chakra system. My own experience with detecting the physical existence of the chakra system began in 1976 when I was exploring the possible relationship between a person's mental state and the chakra system.[46] Based on the limited research, and my personal research as well, it is reasonable to hypothesize the existence of a chakra system as both a subtle psycho-physical system linked to the neuro-endocrine complexes in their prospective locations in the body, as well as subtle psycho-spiritual centers of consciousness.

Iodine energizes the thyroid gland (associated with the 5th chakra), which I believe to be a spiritual-energetic bridge between the heart (associated with the 4th chakra) and the pineal and pituitary glands (associated with the 6th and 7th chakras). In this spiritual way it can be considered the master gland rather than the pituitary as the 1954 Drs. Eartly's and LeBlond's study found in the physical way.[47] The thyroid in this context is a metaphorical bridge between the heavens (higher chakras) and the earth (lower chakras). Adequate iodine is the critical nutrient that

activates and sustains this physical and energetic chakra bridge. It is needed for the chakra system to be optimally functional.

What then is a reasonable and safe dose in a holistic context?

In 1911, 900 milligrams (900,000 micrograms!) daily were considered usual and safe doses. In 1950 the Japanese had 100 times more iodine in their diet than Americans. In 2001 they had 202 times more iodine than Americans and were using up to 13.8 milligrams daily as opposed to the average U.S. intake of 425 micrograms daily. Unfortunately there has been no real study, ever, about what is the optimal safe dosage of iodine. But, again, no one has ever died from iodine overdose or allergic reactions. It is safe to suggest that at least the guidelines given by Drs. Abraham and Brownstein for the use of 12-50 milligrams of iodine daily, for overall iodine sufficiency and wellbeing, and up to 100 milligrams/day for diabetics is reasonable. My prudent suggestion is that as we follow these ideas, it is important to move forward carefully as we treat this pandemic level of 72% iodine deficiency in the world and a shocking 96% deficiency in Americans, affecting the minds of billions of people. I strongly recommend that people reevaluate the amounts of iodine people consume. I recommend that children under 6 years of age take half the adult dose, children 0-2 years take ¼ the adult dose, pregnant women take 47% more than the adult dose (current FDA ratio), and lactating women take 93% more than the adult dose (current FDA ratio), as iodine is very important for brain development, from a holistic perspective. In the larger humanitarian context the risk to benefit ratio of these recommended doses is extremely safe for healing the planetary population and ourselves.

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