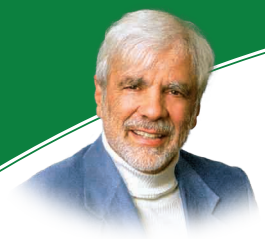

Jonathan V. Wright MD
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macular degernation stuff starts on pg5 -sean

Don't Go Deaf, Blind, or Lose Your Mind!

Increase Your Chances of Preserving Your Hearing, Vision, and Clear Thinking for Much Longer

IN THIS ISSUE

Unfortunately, varying degrees of failing hearing, vision, and mental function are considered to be "normal" with advancing age. But as everyone knows, "normal" is not always the same as optimal; perhaps it's an extreme example, but is "normal" to be dead!

The last time that information about preserving hearing, vision, and mental function was presented all in one article was in 2008 in a previous newsletter. That was almost ten years ago, so there will be a some new information on these topics here and there, but as you've read in *Green Medicine Newsletter* before, what has worked safely for humans in the past is very, very likely to work for humans in the present and in the future, especially when treatment actually is based on understanding—completely or partially—what the cause of the problem or problems may be.

"Age-related" hearing loss can often be reversed with an adrenal hormone

Nature and Creation are remarkably conservative in many ways. Even though mice and humans are obviously very different, much of the internal biochemistry of both species is either the same or very similar. That's one reason why mice are so often used in pioneering research that is later found to be applicable in humans.

Dennis Trune, Ph.D., of Oregon Health Sciences University, pioneered this research about aldosterone (an adrenal hormone found in any living species which has adrenal glands) and hearing loss. He found that aldosterone can often reverse hearing loss in mice. After Dr. Trune reported about his results in mice, many individuals with hearing loss (most of them older than 50) have had their aldosterone levels tested at Tahoma Clinic. A significant percentage are found to have low or "low normal" aldosterone levels. But after taking bio-identical aldosterone in "physiologic" quantities—amounts that would normally be present in adult human bodies—approximately half of these individuals have regained a significant proportion of their "lost" hearing.

When aldosterone helps restore hearing, improvement usually occurs within the first two to three months. A few have literally heard improvement within just two to three weeks. Aldosterone therapy is sometimes capable of restoring a significant degree of hearing even years after the hearing loss

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OUR PURPOSE

Green Medicine Newsletter is dedicated to helping you keep yourself and your family healthy by the safest and most effective means possible. Every month, you'll get information about diet, vitamins, minerals, herbs, natural hormones, natural energies, and other substances and techniques to prevent and heal illness, while prolonging your healthy life span.

A graduate of Harvard University and the University of Michigan Medical School (1969), Dr. Jonathan V. Wright has been practicing natural and nutritional medicine since 1973 at the Tahoma Clinic, now in Tukwila, Washington. Based on enormous volumes of library and clinical research, along with tens of thousands of clinical consultations, he is exceptionally well qualified to bring you a unique blending of the most up-to-date information and the best and still most effective natural therapies developed by preceding generations.

In 1992, Dr. Wright was among the original founders of the American Preventive Medical Association—now known as the Alliance for Natural Health USA—which was created to defend integrative doctors from relentless and coordinated attacks from the conventional medical establishment and the government agencies that protect them. Now one of the leading voices in natural health policy, the Alliance for Natural Health USA continues this mission by organizing half a million grassroots activists to protect access to natural, preventive medicine.

Dr. Wright is proud to empower consumers to exercise their inalienable rights to choose their own healthcare, and to warn the public of continual, pervasive attempts from both government and private organizations to restrict them.

MOVING? MISSED AN ISSUE?

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initially occurred. So far, the longest interval we've witnessed happened to an 87-year-old man who'd lost significant hearing at age 74, thirteen years before. Aldosterone helped him to hear significantly better again!

In 2004, when the very first individual was prescribed aldosterone at Tahoma Clinic, there have been no adverse effects reported, very likely because the use of bio-identical, physiologic-dose (no less and no more than usually found in adult human bodies) aldosterone restores levels to those that have been present in human bodies for as long as there have been human bodies!

Mostly, this treatment has been used by individuals with both hearing loss and low or low-normal aldosterone levels, but there was one individual—an M.D.—who decided to try this approach for his hearing loss even though his aldosterone levels were quite normal. His hearing did improve! However, unless you too are an M.D., D.O., or N.D. who can prescribe bio-identical aldosterone and order lab tests for sodium and potassium (sodium and potassium regulation are two of aldosterone's major responsibilities), please don't take aldosterone, bio-identical or not, if your measured levels are median or above.

Measuring and monitoring aldosterone

Many labs use blood tests to measure aldosterone levels, but measuring aldosterone, as part of an over-all steroid analysis done from a 24-hour urine collection is definitely preferable. The 24-hour urine collection test measures *all* the aldosterone output in a 24-hour period; since aldosterone and other steroid hormones are secreted into the bloodstream in "pulses," a blood test at just one "point in time" isn't as accurate.

Also, the 24-hour urine collection measures the "hormone context" in which aldosterone is found, including measurements of cortisol, cortisone, and "downstream metabolites" of cortisol and cortisone. Putting these measurements together allows your physician to assess your adrenal strength and weakness.

Prevent or successfully treat three major causes of blindness—glaucoma, cataract, and macular degeneration—without any patent medicines or surgery

GLAUCOMA

Two effective glaucoma treatments, which were reported in 1937 and 2017, seem quite different, but are possibly related. In 1937, Emanuel Josephson, M.D., (a New York City-based ophthalmologist), published a book titled *Glaucoma and its Medical Treatment with Cortin*. Dr. Josephson reported many cases of individuals whose glaucoma and high intra-ocular pressure improved and often became normal again after treatment with "Cortin". Cortin was the 1930s name for entirely natural, injectable extracts from animal adrenal cortex—the outer part of the adrenal glands where cortisol, cortisone, DHEA, aldosterone, and all other natural adrenal steroid molecules are in a natural balance with each other. (In later decades, Cortin was renamed Adrenal Cortical Extract, or "ACE").

Dr. Josephson reported some very dramatic improvements. Some glaucoma patients' intra-ocular pressure dropped more than 20 points to normal range. Dr. Josephson explanation was that Cortin produced such impressive

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results because many cases of glaucoma don't actually originate in the eye, but are instead an ocular symptom of weak adrenal glands. Dr. Josephson wrote: "the signs, symptoms, and chemical changes of a large majority of cases of simple glaucoma are identical with those of insufficiency of the adrenal cortex". (Translation: the large majority of individuals suffering from glaucoma have weak adrenal glands.)

Sometimes ACE helped alleviate high intra-ocular pressure in people who hadn't responded to "miotics" (patent medicines used for glaucoma) or surgery on the eyeball to help reduce intraocular pressure. Over all, over 50% of glaucoma sufferers treated with Cortin by Dr. Josephson had either complete normalization or very significant lowering of intraocular pressure

When Dr. Josephson was using Cortin for his patients in the 1930s and 40s, it was sold by major patent medication companies, including Parke-Davis. Although patent medicine companies couldn't patent the actual extracts (since they were 100% natural) they could patent—and make suitably large profits from—the extraction process.

Unfortunately, in the late 1940s and early 1950s, patent medicine companies discovered ways to make totally unnatural but very powerful (and of course patentable and much more profitable) versions of cortisone and cortisol, such as "Prednisone", "Decadron", "Kenalog", and many others. Even though these space-alien versions of natural adrenal steroid hormones have an incredible list of adverse effects when used in human bodies—including diabetes, osteoporosis, high blood pressure, cataracts, and stomach ulcers—the patent medicine industry was so successful in blurring the lines between them and bio-identical cortisone and cortisol (which *never* have these sorts of adverse effects when used in "physiologic" quantities) that they've become the "go-to" choice for nearly all mainstream physicians. (A more recent example of this type of "blurring the lines" is the deliberate inability of *los federales* at the FDA, conventional medicine, and patent medicine companies to distinguish between Premarin, other patentable pseudo-estrogens and bio-identical estrogens.

Even worse, *los federales* used this line-blurring to outlaw Cortin/ACE in the 1970s. They claimed that it should be banned because, unlike the patentable, not at all bio-identical versions of adrenal hormones, ACE was "unapproved," and therefore potentially "dangerous", even though it had been sold and in use for decades with not one adverse effect reported. In an accompanying illogical leap of *los federales* "logic," after terming ACE "dangerous," they also stated it was "ineffective."

But before *los federales* declared safe and demonstrably helpful ACE illegal, several Tahoma Clinic patients had success in normalizing their glaucoma with ACE, with decreases in intra-ocular pressure from well above 20 (normal is under 20) to below 20 following a series of intravenous injections of ACE. (To be certain of this, all intra-ocular pressure measurements were done by the patients' own eye doctors, not by me.) Many other physicians practicing natural medicine had seen similar results and we all protested to the FDA. Unfortunately, *los federales* care more about "approval" (and quite possibly the fees involved in "approval") than about documented health improvement by safe natural means. Unfortunately, the public didn't know or about or get involved in this protest, so effective, side-effect-free glaucoma treatment with ACE remains illegal today.

Individuals with glaucoma can sometimes improve and even normalize their own intra-ocular pressure by using more general techniques to improve their own adrenal function. (Improving one's own adrenal function takes considerably more time than using ACE injections, but is good for the entire body.) The very best place to start is with diet, eliminating all refined sugar and refined carbs, "eating organic" as much as possible and affordable and—if blood pressure is lower than average—using more sodium chloride salt (Celtic, Himalayan, and others)—and making sure to avoid "low salt" diets which actually put more stress on already weak adrenal glands. Supplements help boost adrenal function, including particularly the sodium ascorbate form of vitamin C, pantothenic acid, chromium, vitamins A and E, ashwaganda and ginseng. Another relatively subtle but powerful technique for strengthening weak adrenal glands is "cell therapy" using fetal animal adrenal cells with other related fetal animal endocrine cells, a topic too long to cover in this article.

As you've likely guessed, adrenal-strengthening treatment is most likely to be successful in treating glaucoma in individuals who actually have weak adrenal function. Symptoms of weak adrenal function include lower-than-average blood pressure (especially if the "top"—systolic—number is consistently below 110), dizzy spells when standing up rapidly, and being easily tired, especially after exercise. Being underweight for your particular height and difficulty gaining weight are also common with weak adrenal function, but are not always present. If you have any or all of these symptoms, check with a physician skilled and knowledgeable in natural and nutritional medicine, as well as in bio-identical hormone replacement. (The best laboratory test to evaluate adrenal strength is the 24-hour urine test for natural adrenal steroids.)

In February 2017, researchers reported[2] that niacinamide (one form of vitamin B3) prevented 93% of "glaucoma-prone" mice from actually developing glaucoma. They reported that weak mitochon-

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drial function (mitochondria are the "energy engines" present in every living cell) in retinal cells preceded glaucoma. Giving the mice niacinamide re-energized mitochondrial function, strengthened retinal function, and prevented glaucoma. Although this research hasn't been replicated yet in humans, it's very likely that the cause of glaucoma in humans is the same niacinamide-correctable mitochondrial malfunction reported to occur in mice by these researchers.

So what's the possible relationship of niacinamide to adrenal cortical extract (ACE)? ACE contains all of the hormones found in animal (and human) adrenal glands, including cortisol and cortisone. Adequate quantities of niacinamide help to maintain the normal "balance" of cortisol and cortisone in adrenal glands and in adrenal cortical extract!

As nearly everyone knows, niacinamide is a supplement and "do-it-yourself" remedy available in all natural food stores, compounding pharmacies, and the Tahoma Clinic Dispensary (www.tahomadispensary.com). Please see Green Medicine Newsletter for September 2016 for details about safe use of niacinamide.

Clearing up or stopping cataract progression, naturally

N-ACETYLCARNOSINE

Many of us (with the apparent exception of nearly all ophthalmologists) are aware of N-acetylcarnosine eyedrops, sold "over the counter" as "Can-C" eye drops in natural food stores, compounding pharmacies, and the Tahoma Clinic Dispensary. In our "free country", neither the manufacturer or sellers of "Can-C" eyedrops are "allowed" by *los federales* to tell you what these eye drops can do, or about any of the research that supports what every physician recommending them has observed: early cataracts can sometimes be made to disappear with regular daily use!

When early cataracts don't disappear, they frequently stop progressing further for as long as the "Can-C" is continued. Daily "Can-C" use can also stop the progression of many "medium" cataracts, or even make them become somewhat smaller. Larger and "time for surgery" cataracts usually don't respond. Here's some of the early research about which the manufacturers and sellers of "Can-C" are prohibited from telling you (not kidding!) despite the 1st Amendment to the Constitution of these United States. In a 2002 research study[3] researchers enrolled 49 individuals suffering with cataracts. Twenty-six of the research volunteers used 1% N-acetylcarnosine eyedrops twice daily, 13 research volunteers used placebo eyedrops twice daily, and the other 10 individuals got no eyedrops at all. The research team checked all the participants every two months for the first six months of the trial, then at six-month intervals for the next two years.

During these evaluations, they did tests for glare and visual acuity. They also took measurements of the participants' cataracts by stereocinematographic slit-images and retro-illumination examination of the lens. Digital analysis of lens images displayed light scattering and absorbing centres in two- and three-dimensional scales. (No, I'm not an ophthalmologist and don't know how to do or interpret these tests, or even what they are, but it's important to mention them for those who are capable, and in case you show this part to your own eye doctor!)

After six months, 90% of the eyes treated with N-acetylcarnosine-showed improvement ranging from 7% to 100% in visual acuity, and 88.9% showed a 27 to 100% improvement in sensitivity to glare. The technical studies noted above found fewer areas of posterior subcapsular lens opacity and 41.5% of treated eyes had improvement in the visual image seen. The researchers wrote that the degree of change in visual image between the N-acetylcarnosine group and the two control groups (placebo and no treatment) was statistically very significant.

Making these results even more impressive is that the improvements were sustained over the entire two-year study period—no one in the N-acetylcarnosine eyedrop group had any worsening of vision! The "control groups" showed significant worsening after both six and twenty-four months. All the patients taking the N-acetylcarnosine eyedrops tolerated them well, and there were no reports of side effects in the eyes or anywhere else in the body.

In 2004 a member of the same research group published another randomized, double-blind, placebo-controlled study[4] which compared the effects of 1% N-acetylcarnosine eyedrops to the effects of a placebo on glare sensitivity in sixty-five older drivers of automobiles with cataracts in one or both eyes and seventy-two older drivers who had no cataracts. After four months, the older drivers in the placebo group reported a gradual worsening of glare sensitivity, with minimal changes in visual acuity. But the N-acetylcarnosine group reported a statistically significant improvement in glare sensitivity and visual acuity over those same four months. As in the prior research, the N-acetylcarnosine eyedrops were well tolerated in

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almost all patients, and there were no reports of adverse effects.

"Hachimi-jio-gan", "Clinical Nutrients for the Eyes"

Another option for treating cataracts is a combination of Chinese botanicals called "Hachimi-jio-gan," or Ba-wei-wan. This treatment has been used for centuries in China to treat cataracts, and even has a bit of clinical evidence to support it. In a human study of early cataracts conducted in Japan[5], Hachimi-jio-gan was associated with lessening of cataracts in 60% of the volunteers. In the USA, Hachimi-jio-gan is available as "Clinical Nutrients for the Eyes", which is available from natural food stores, compounding pharmacies, and the Tahoma Clinic Dispensary.

Vitamin A

Decades ago, a very honest ophthalmologist with a sense of humor wrote a letter-to-the-Editor of a medical journal "complaining" that his cataract surgery income went down by over two-thirds after he started recommending vitamin A to all his patients with any degree of cataract. I recommend 50,000 IU of vitamin A (not beta-carotene) for anyone who wants to prevent or treat cataracts. In fact, the only people who shouldn't use this amount are very small children (who don't get cataracts anyway) and women who are or plan to be pregnant (who also aren't likely to have cataracts).

Other ways to help prevent cataract

One of the most important things is to eliminate all sources of refined sugar and refined carbohydrates! Researchers have found that part of the cause of cataract is the lens of the eye trying to "help" the body lower high blood sugar by "packing it away" within the lens, forming a cataract! (This explains why individuals with type 2 diabetes have a much greater incidence of cataracts than people with normal blood sugar levels.) While not eating sugar and refined carbohydrates is better for everyone's health, it's especially important for cataract prevention if you have diabetes—type 2 or type 1—in your family. Eliminating all sources of the milk sugar lactose (milk, ice cream, cottage cheese, and many soft cheeses) reduces risk of cataract, too.

In addition to eliminating refined sugar and carbohydrates, you may also want to consider using some cataract-preventing nutrients (other than just vitamin A) as part of your daily supplement regimen. Vitamin C, quercitin, zinc, bilberry, carotenoids, and riboflavin (Vitamin B_2) have all been associated with cataract risk reduction. One study reported that people with higher serum vitamin E levels had 50% less risk of developing cataracts than people with lower levels. (If supplementing with vitamin E, remember to use mixed tocopherols, not just alpha-tocopherol.)

Patent medicines can increase cataract risk! Patent medicine "cortisone" (actually pseudo-cortisone) preparations prescribed to suppress symptoms of asthma, severe allergies, rheumatoid arthritis, and other more severe inflammatory conditions always increase cataract risk. If you're using prescription patent-medicine "cortisone," check with a physician skilled and knowledgeable in nutritional and natural medicine for effective (and not cataract-inducing alternatives.

Macular degeneration ("dry")

For the few who don't know this, there are two health problems named "macular degeneration". The very most common (~90%) is illogically termed "dry". In this type, the macular area of the retina slowly deteriorates, much like an old barn that hasn't been maintained or repaired for decades. The least common (~10%) is illogically termed "wet", but in actuality involves the growth of vision-impairing new blood vessels across the macular area of the retina. The two types are "illogically" named "wet" and "dry" because in reality, the macula of the eye is always wet! But back to treatment of 90% of macular degeneration... the "dry" type.

Just as Dr. Josephson found that many cases of glaucoma don't originate in the eye, but elsewhere in the body, in the 1980s I discovered that many—if not most—cases of "dry" macular occur because the eyes aren't being adequately nourished! No kidding! Even if we're eating the best possible, "nutrient-dense" all-organic food diet, if we're not adequately digesting and/or assimilating nutrients, our eyes will deteriorate, just like the old barn that hasn't been maintained or repaired for years! If you've been told you're starting to develop "dry" macular degeneration, please have your digestion and assimilation of nutrients checked by a physician skilled and knowledgeable in natural medicine.

Correcting digestive and/or absorptive problems and rebuilding body stores of nutrients takes time. If "dry" macular degeneration has already started, it's definitely wisest to start—as soon as possible—a series of intravenous nutrient infusions! (A report[6] on an early version of intravenous treatment for "dry" macular degeneration was published in 1990.) Intravenous nutrient infusions get 100% of the nutrients into the body tissues right away, which "jump starts" the healing process of the already-deteriorating macula.

For many more details about the Tahoma Clinic Macular ReGeneration program, see the December issue of *Green Medicine Newsletter*. Since it was begun in the 1980s, this frequently improved program has stopped the deterioration or (much more often) improved vision in over 70% of those treated at Tahoma Clinic for "dry" macular degeneration.

Nutrients useful to help prevent and treat "dry" macular degeneration include

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lutein and zeaxanthin, which are found in highest concentrations in spinach, collard greens, and other deep green leafy vegetables. Other important nutrients include zinc (found in oysters, fish and other animal protein), selenium (two to four Brazil nuts a day are an excellent source), riboflavin (found in brewer's yeast, almonds, mushrooms, wheat bran, and dark green leafy vegetables), taurine (found in organ meats, fish, and other animal protein), and quercitin (good sources include onions, apples, kale, cherries, grapes, red cabbage, and green beans). Bilberry and ginkgo are two of the best vision-supporting herbs. But if you already have "dry" macular degeneration, remember that intravenous infusions help the healing to start the very most quickly! I also encourage everyone with "dry" macular degeneration to consider using *Ocudyne II* capsules (formulated by my colleague Alan R. Gaby M.D. and me), which contain all the nutrients noted above

Alzheimer's and Other Cognitive Decline: Prevention

According to "health authorities", Alzheimer's disease and other cognitive decline is becoming epidemic. There are non-Alzheimer's forms of cognitive, too, including "multi-infarct" dementia, which is thought to be caused by a series of small strokes, and "mild cognitive decline", which likely has many causes that have yet to be identified.

The best way to combat any and all of these cognitive problems is to prevent them from occurring in the first place. Here we are again: an excellent diet (which is being well-digested and well-absorbed) is truly the most important aspect of preventing most—if not all—health problems, including cognitive decline. More and more research is being reported linking blood sugar problems (such as diabetes) and potential blood sugar problems (such as metabolic syndrome and insulin resistance) with a higher risk of Alzheimer's disease. So, eliminate the sugar and refined carbohydrates! Make sure to eat adequate protein and if you can, opt for organic, free-range meat and poultry. The essential fatty acid ratio in meat from grass and other natural substance eating animals is anti-inflammatory, while the essential fatty acid ratio found in grain-fed animal protein actually promotes inflammation, and inflammation is also being implicated more and more as raising the risk of Alzheimer's and other cognitive malfunction.

Along these same lines, one of the best "brain foods" you can eat is fish. (Low-mercury fish, that is.) Not only are the omega-3 fatty acids in fish anti-inflammatory, but they're also essential components of the membranes of every brain cell we have. And since our bodies can't make them on their own, it's critical to get enough omega-3s and other essential fatty acids from supplements (like cod liver oil) and foods (like free-range meat and fish).

Obviously protein is just a start; eat several non-starchy vegetables (and some fruit) of various colors every day, too. "Eat organic" as much as possible. Since organically raised foods have significantly more minerals and vitamins than "commercially" grown varieties, and have a much lower risk of being contaminated with pesticides, herbicides, and miscellaneous non-food chemical additives.

We're all "fat-heads"

Literally! Our brains are made up mostly of fats! For many of us, there aren't enough of the right fats and oils in our diets to maximize brain health, so supplementation may be important especially if we're "older". Three fat/oil supplements to consider are phospatidyl choline, phospatidyl serine, and (here we are again) fish oil.

Androgens and Estrogens are important for healthy brains at any adult age

So many men are seen at Tahoma Clinic who have the idea that testosterone is mostly for sexual function. But testosterone's most important job is maintaining cognitive function! C'mon guys: the sex part is important, no doubt, but who cares about sex if you can't remember who you're with or what you did with her?

Unfortunately, thanks to this misunderstanding word hasn't gotten around that—just like estrogen replacement for women—bio-identical testosterone replacement for men is extremely important for significantly reducing the risk of Alzheimer's disease and cognitive decline. Since this article is long enough already, here's a "highlights list":

- Higher serum estrogen levels in women in their 60s correlate with a lower incidence of Alzheimer's in those same women decades later. (And the reverse is true too: Lower estrogens equal higher incidence of Alzheimer's in later years.)

- The 15-year Princeton men's study reported that men with higher serum free testosterone in 1983 had less risk of Alzheimer's disease in 1998. (Once again, the reverse was also true: Lower serum free testosterone

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corresponded with higher risk of Alzheimer's.)

- Researchers observing neurons directly found substantially less accumulation of beta-amyloid, neurofibrillary tangle, tau protein, and other "neuronal garbage" associated with Alzheimer's when those neurons were exposed to "physiologic quantities" of either estrogen or testosterone (depending on whether the neuron was from a woman or a man).

- In numerous controlled experiments, elderly men without Alzheimer's disease do better on tests of cognitive function when given testosterone than men given placebo.

- Testosterone for men and estrogen (that's real, bio-identical estrogen) for women is very protective for the entire cardiovascular system, including the blood supply to the brain. (Remember that cognitive decline due to repeated small strokes?)

In sum, one of the most important things for preventing cognitive decline is bio-identical hormone replacement when it's appropriate for you. Just make sure to be working with a physician who is skilled and knowledgeable in all aspects of this therapy. If you're not sure if your doctor is, one way to find out is to ask the physician's office whether they do routine monitoring of therapy with the 24-hour urine steroid determination. This test is the very best way to check not only the levels of the bio-identical hormones being replaced but also their metabolization (the natural transformation of the starting hormones into pro- and anti-carcinogenic metabolites). Blood and/or saliva testing just doesn't cut it when it comes to bio-identical hormone replacement therapy. And yes, I'm aware of the "modern trend" to use the "dried urine" test, but have not found it as accurate and helpful as the 24-hour urine collection test.

Lithium!

No matter what neurotoxin your brain is exposed to, lithium protects against it. Not only that, but lithium actually promotes the growth of new brain cells, even in individuals past age 50.

Yes, high-dose prescription lithium can be toxic, but low quantities like the ones used for boosting cognitive function and protecting brain cells (20 milligrams daily and under) are not associated with toxicity. In over 40 of practice years, only two or three individuals have told me they developed a slight tremor from low-dose lithium, which went away when the lithium was discontinued. Conversely, many more have reported improvement in benign tremors with the use of low dose lithium.

Even though risk of toxicity from low-dose lithium is very small, always work with a physician skilled and knowledgeable in nutritional and natural medicine if you decide to supplement with lithium. And to be on the extra-cautious side, always use essential fatty acids ("omega-3" and "omega-6") when using even low-quantity lithium supplements. Essential fatty acids in sufficient quantities are a primary treatment for toxicity caused by high-dose prescription lithium[7], so using them in conjunction with low-dose treatment helps avoid that possibility altogether.

Taurine

In our brains, taurine (an amino acid) has been found to stimulate growth and proliferation of neural stem cells, the precursor cells that "morph" into nerve cells. One study[8] reported: "Taurine... increased the number of human neural precursor cell in culture.... The taurine-induced increase ranged from 57 to 188% in the 3 [fetal] brains examined. Taurine significantly enhanced the percentage of neurons formed from human neuronal precursor cells...with increases ranging from 172 to 480% over controls without taurine. Taurine also increased the cell number and neuronal generation in cultures of [an] immortalized human cell line. These results suggest that taurine has a positive influence on human neuronal precursor cell growth and neuronal formation."

Working with aging mice, researchers reported[9]: "We found that taurine increased cell proliferation in the dentate gyrus [an area of the brain involved in memory formation] through the activation of quiescent [inactive] stem cells, resulting in increased number of stem cells and...neural progenitors. Taurine had a direct effect on stem/progenitor cells proliferation.... Furthermore, taurine increased the survival of newborn neurons, resulting in a net increase in adult neurogenesis. Together, these results show that taurine increases several steps of adult neurogenesis and supports a beneficial role of taurine on hippocampal neurogenesis in the context of brain aging."

If you think you've read this about taurine before, you're probably right! It was previously printed in the September 2017 issue of *Green Medicine Newsletter* as part of a description of "ReMind", a product I've recently formulated for brain health.

Other nutrients stimulating new brain cell formation

As this article is overly long already, we'll just make a list here: "Aromatic turmerone" (found in turmeric, especially high in turmeric oils), curcumin (also found in turmeric), ginkgo, flavonoids, folate, resveratrol, theanine (found in green tea), blueberries, the "retinoic acid" form of vitamin A (for this one, work with a physician skilled and knowledgeable in nutritional medicine, as an overdose can

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suppress new neuron formation), the omega-3 fatty acid "DHA", and (possibly of more interest to men) Icariin, the "active ingredient" in "horny goat weed".

Conversely, some things have been reported to depress new neuron formation: excess retinoic acid (as noted above), zinc deficiency, low levels of vitamin D, high levels of fructose, excess homocysteine, chronic alcohol use, and (ooops!) caffeine[10]! Also, Centella Asiatica and Oxytocin have been reported help regenerate peripheral nerves, as have injections of Human Chorionic Gonadotrophin (HCG).

The End of Alzheimer's: Dr. Dale Bredesen

Although most readers are very likely aware of Dr. Bredesen (who previously published research reporting reversal of nine of ten cases of Alzheimer's disease) and his enormous contributions to the science of preventing and reversing Alzheimer' disease, just in case you don't have his book *The End of Alzheimer's*, please add it to your list of "must have" books. ●

ENDNOTES

1 Josephson, Emanuel M. Glaucoma and it's Medical Treatment with Cortin, page 23. Chedney Press, New York, 1937.

2 Williams PA, Harder JM, et al. *Vitamin B3 modulates mitochondrial vulnerability and prevents glaucoma in aged mice.* Science 2017;355:756-760

3 Babizhayev MA, et al. *"Efficacy of N-acetylcarnosine in the treatment of cataracts,"* Drugs R D 2002; 3(2): 87-103

4 Babizhayev MA. *"Rejuvenation of visual functions in older adult drivers and drivers with cataract during a short-term administration of N-acetylcarnosine lubricant eye drops,"* Rejuvenation Res 2004; 7(3): 186-198

5 Fujihara K. *Treatment of Cataract with Ba-wei-wan.* J Soc Orient Med Japan 1974;24:465-479

6 Wright JV. *Improvement of vision in macular degeneration associated with intravenous zinc and selenium therapy: two cases.* J Nutr Med 1990;1:133-138

7 At Tahoma Clinic, lithium-toxic "bi-polar" individuals who feared stopping lithium treatment because of return of bi-polar symptoms have eliminated the toxic effects of lithium (without reducing lithium dosage) with one tablespoonful of fish oil and one tablespoonful of flaxseed oil daily, accompanied by 800 IU of mixed tocopherols daily. Always work with a physician skilled and knowledgeable in natural medicine if thinking of using this treatment for actual lithium toxicity.

8 Lyman WD et al. *Taurine enhances the growth of neural precursors derived from fetal human brain and promotes neuronal specification.* Devel Neurosci 2013

9 Gebara E et al. *Taurine increases hippocampal neurogenesis in aging mice.* Stem Cell Res 2015

10 Wentz CT, Magavi SS. *Caffeine alters proliferation of neuronal precursors in the adult hippocampus.* Neuropharmacology 2009;56:994–1000.

About Dr. Jonathan V. Wright

Dr. Wright established Tahoma Clinic in 1973 in Washington State to offer nutritional and other natural therapies for common health conditions instead of patent medications.

A long-time researcher, author, speaker, and clinician, he has educated hysicians in his techniques since 1983. Dubbed the "Father of Bio-Identical Hormones" by his peers, Dr. Wright was the first physician in the United States to prescribe comprehensive hormone replacement therapy (in the early 1980s) with hormones identical to those found in nature. This therapy (shortened to "BHRT") is now used nationwide by millions.

Also an author, he has written 13 books (with two texts achieving best-selling status), numerous medical articles, monthly magazine columns from 1976 to 2000, and since 1994 has written a popular monthly newsletter on natural health topics.