On Thyroid, Liver, and Toxicity

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Currently, about one half of Dr. Gordon's patients have CFS/FM. He does a lot of work with hormones, which he believes is a key issue in chronic pain, especially if you have had chronic pain for a long time.

By way of explaining why so many doctors have problems dealing successfully (or tactfully) with CFS/FM, Dr. Gordon says it is because of the way they were trained and the way the majority of doctors today practice medicine. There were taught the *disease-based model*, which works wonderfully well if you have a specific well-documented illness or injury. "Conventional medicine is easy - after my third year, I rarely had to look anything up," said Dr. Gordon, of his years spend practicing conventional and emergency room medicine. "High blood pressure, broken leg, pneumonia – despite the individual differences presented by each patient, each case was pretty much the same, medically. CFS/FM, on the other hand, is an unending challenge. We can give one of you something and it works wonderfully, but we give it to another one of you at 1/4 the dose, you're sick for a week!" CFS/FM, he says, is a smorgasbord of a variety of different illnesses.

Conventional, disease-based medicine makes a major erroneous assumption: that we are all clones of one another who all have the same needs (i.e., nutritional requirements), who all function in the same way (i.e., digesting and absorbing nutrients), and who all react the same way to the same stimulus (drug, treatment, chemical exposure, etc.).

But we aren't. "People are dynamic organisms and we are all different," says Gordon.

Forty years ago, Roger J. Williams, Ph.D., the biochemist who discovered folic acid, wrote a book, *Biochemical Individuality: The Basis for the Genetotrophic Concept*, which goes in depth into these differences and why it is critical to proper nutrition and wellness to not make the assumption that we are all the same. In his research, he used armadillo quadruplets. Despite the fact that each quad was genetically identical to the other three from the same litter, he found that they had different nutritional requirements, etc. for optimal growth and development.

"Conventional medicine," says Dr. Gordon, "only cares about what kills you, not about what is optimal for you."

Thyroid

The TSH (thyroid stimulating hormone) has become the "gold standard" of thyroid function. When most doctors do a "thyroid test" they measure your TSH and decide, based on the test result, whether you have a thyroid problem or not. It doesn't seem to matter if you are exhibiting all of the classic signs of hypothyroidism, since the test says you're thyroid is normal, then you're normal, period. The fact that your hair is falling out, you have headaches, weight gain, brittle nails, abnormal fatigue, etc., is irrelevant since the test is normal.

Some doctors may go a step further and look at your free T4 – but not the free T3. To further complicate matters, the actual test procedures most labs use to test total T4 and T3 are essentially antiquated; there is new technology that can test the free hormone levels much more accurately.

In addition, without also testing the free T3, the doctor has no way of knowing if your body is properly converting the T4 it makes into T3. Just because the TSH level is normal doesn't mean it is present in your system in sufficient amounts, and just because your free T4 level is good doesn't mean your body is converting it like it should. "If you are exhibiting signs of low thyroid, your free T3 will be low despite your TSH being 'normal'," says Dr. Gordon. "The TSH only shows what is going on in your hypothalmus, not in your liver or elsewhere in your body."

Treating thyroid deficiency isn't always as easy as it seems when looking at disease-model medicine. In most people, their bodies convert the T4 they take into T3 just fine. For the others, we may need to give them T4 *and* T3, or just T3, to see if we can fix the problem in the liver that is preventing their body from being able to do the conversion of endogenous T4 into T3.

Brian Wilson, MD, of the eponymous Wilson's Syndrome (not to be confused with Wilson's disease), says that in times of stress, our bodies make *reverse T3*. In a healthy, properly functioning body, once the stressor ends, the body stops making the reverse T3 and normal T4 conversion to T3 continues. If the body continues making reverse T3, however, symptoms of low thyroid set in, such as low body temperatures, etc.

Dr. Gordon's observation on conventional medicine:

"The body is very complex; doctors don't want it to be. The disease model we were taught does not allow for complexity, for biochemical individuality.

"To further hamper creating medicine, in the past 30 years, especially the last 10 years, the accountant-model has taken over. In a double blind placebo study, if a small percentage of the test group shows enormous improvement, the statistician/accountant model throws the result out as 'chance" instead of looking to see why it works. They dismiss what they see as aberrant or "coincidental" results, instead of addressing that group of subjects to find out why they responded in that way."

Liver Tests / Great Smokies Laboratory

The Great Smokies Laboratory was started by a naturopath and a pathologist who were working with doctors in New York on testing and treatment for parasites. They started working with Jeffrey Bland, MD, the former directory of Linus Pauling's lab, in looking at how the liver works.

When you go to the doctor and they order liver function tests (LFT, which are also part of some standardized chemistry panels, such as the Chem 20), they test the ALT (alanine aminotransferase) and AST (aspartate transaminase), formerly called SGOT. While these tests are effective when the liver cells are dying or when a disease process, such as hepatitis, is present, they are unable to test the liver's detoxification ability.

Detoxification has been a sort of dirty word in the medical profession, where the idea that toxins (other than acute poisoning) affect the body – its organs, glands, and ability to function – has been dismissed as a sort of old wives tale or old-fashioned. The idea that the gut and its ability to function, or not function, may have something to do with how you feel has been dismissed in disease-based medicine if the cluster of reported symptoms don't match an existing disease model. The disease-based model ignores the fact that all chemicals that enter the body – through the mouth, respiratory tract, and skin – have to be rendered inert by the liver. In addition, the liver has to deal with all of the hormones produced by our bodies. If the liver is impaired in any of this

detoxification pathways, it cannot detoxify everything to bloodstream carries to it. If the liver is overwhelmed by environmental estrogen, for example, it is going to be unable to adequately deal with the estrogen made by the body, and anything else that uses the same pathways.

On the other hand, alternative or complementary medicine acknowledges that the gut has a great deal to do with how we feel and may in fact play a significant role in how our bodies are able to function. Alternative/Complementary medicine, then, looks at ways to identify what is wrong and then to help or fix the problem.

Detoxification Profiles

The Great Smokies *Detoxification Profile* is their basic test to assess the body's capacity to carry out specific aspects of detoxification and free radical damage, based on samples of saliva and urine collected through the 24 hour period of the test. These functional assessments provide a comprehensive profile of the body's detoxification capacity and potential susceptibility to oxidative damage by measuring the clearance of aspirin, Tylenol and caffeine in two salivary specimens and an overnight urine collection specimen, a sample of which is then submitted for the actual testing. (At present, there are no substitutes for those patients who are unable to tolerate caffeine, aspirin or acetaminophen.)

There are two phases to the liver's function, cleverly called Phase I and Phase II. Conventional medicine spends its time in Phase I, the Cytochrome P450 system, which is the first step in metabolizing a lot of drugs.

We all have different variations on this C-P450 system which is why people don't always react the same when given the same drug. Eventually, labs will be able to test your blood and tell which drug will work best for you. For now, one way we have to test how well your C-P450 works is by looking at how well it handles certain substances, in this case, the GS Detoxification Profile which tells us how your liver metabolizes caffeine. If your C-P450 system is running very high, it is a good indication that you have an ongoing toxic situation in your life which is affecting the toxic loads your liver is trying to deal with. If the C-P450 system is running is very low, you either live in a wonderful place or your thyroid (or some other things) isn't working very well.

In Phase II, there are several detoxification pathways at work, including sulfur, glutathione (environmental toxins), glucaranidation (hormones), and glycination (hormones, environmental toxins). Tylenol and aspirin are metabolized in these pathways. By challenging these pathways by taking aspirin and acetaminophen as part of the GS Detoxification Profile test, we will know what pathways are affected and so can fine-tune which supplements or drugs you need to take to improve your liver function. As an example, perfume sensitivity can be affected by glutathione pathway dysfunction, but there may also be an allergic component to the sensitivity reactions. So, while boosting the glutathione won't necessarily eradicate the sensitivity, it will help your liver better detoxify perfumes when you are exposed to them. Since your body will be better able to deal with the exposure, the stress on your immune system may be reduced enough to lessen the severity of your reactions to perfume exposures.

Given how expensive many supplements and nutriceuticals are, it makes more sense to find out which ones your body needs – what it will take to reduce the loads your liver can't handle or improve the pathway functioning – rather than taking a shot-gun approach by taking everything…or giving it all up as all too complicated and taking nothing.

A note for Tylenol users: Tylenol uses up glutathione. If you take Tylenol, you should also take N-Acetyl-Cystine (NAC).

Elemental Testing

Great Smokies, Doctors Data, and some other labs can test hair and urine to look the accumulations of metals such as mercury. Dr. Gordon finds that the results of hair analyses are generally too inconclusive to determine the best course of treatment when it comes to mercury toxicity, finding that the provocative urine test gives far better information in this instance. So, rather than order a hair analysis and then a provocative urine test, he goes right to the provocative urine test.

The provocation for mercury is an initial injection of DMPS, administered intravenously, after the bladder has been voided. Urine is then collected in the kit supplied by the lab (Dr. Gordon uses Doctors Data for this test) for the next 6 hours, an aliquot of which is then sent to their lab for processing. The DMPS mobilizes any metals stored in the body's organs and tissue, moving some of the stored metals out into the blood stream where they are then bound and excreted during urination. By looking at the level of the various metals tested for in this challenge, the practitioner can determine the extent of the metal in the body, and how best to treat it (through further DMPS I.V.s, oral medication, binding supplements such as garlic, chlorella or spirulina, or a combination or progression of all three modalities).

Mercury Toxicity

Mercury is a problem in our lives – an airborne pollutant, it is also found in the soil and in water, especially in areas around and downstream from present and former gold and mercury mining operations, making parts of California, including Sonoma and Mendocino Counties, a mercury hazard. Mercury, in the form of thimerosal, has been used as a preservative in vaccines (including flu vaccines). Although the FDA has previously ordered a phase-out of this and other forms of mercury preservatives in vaccines, it has been slow going, and companies have until Spring 2001 to comply.

The reason why amalgam fillings are a problem is that when you properly chew hot food, molecules of the mercury in the amalgam are separated from their base, where they are then swallowed or inhaled as you eat and take breaths while eating. Mercury is found in fluorescent lights, electrical switches and thermometers (including thermostats), in fish, vehicle exhaust, cosmetics, contact lens solution, topical antibiotics and antiseptics, and more. One of the things mercury does is to decrease glutathione, so while mercury levels are high in the body, additional glutathione should be taken to help offset the body's impaired ability to produce its own.

The body will get rid of mercury over time, we just don't know how long. One patient had his amalgams removed 12 years ago and he still tests moderately high in mercury. Others who have had amalgam fillings for decades show no sign of even moderate mercury toxicity, which gets us back to the concept of *biochemical individuality*: some bodies can handle extremely high levels of toxic substances, while others begin to show signs of acute symptoms at a fraction of the supposedly "safe" exposure levels. When testing for "acceptable exposure, public health officials test the people working in highly toxic industries. Since, due to their biochemical individuality, they are able to cope with the high level and so are still working there, they are deemed "healthy" and the levels they are exposed to are deemed "safe." The public health officials don't test those who quit due to ill health after a couple of months, nor the surrounding community who are sick at a fraction of the exposure faced daily and cumulatively by the "healthy" employees.

On whether amalgams should be removed or not, Dr. Gordon says, “If you had all or the majority of your amalgams put in when you were a child and were healthy till you were 40-50, then, while it’s a good idea to get them out, it may not be the top priority, as there are other things to do first.” If you decide to have your dentist remove your amalgams, insist that a dental dam be used, which will prevent the volatile mercury from being respired and particulate mercury from being swallowed (the finer the particulates, the more easily they are absorbed in the gastrointestinal tract). To further prevent respiration, by you, the dentist and his or her assistant, they should be using a drill which has a suction tube attached which will suck up the volatiles and particulates and remove them from the environment. In addition, ask to be connected to an oxygen tank so that you can breath a higher concentration of oxygen during the procedure, which will help reduce immune stress.

Pain

“For pain,” Dr. Gordon says, “I like the narcotics - long acting drugs, not short acting things like Vicodan. But you need to find out the pain source and see what can be corrected or stabilized and then see if they still need the pain medication. If they do, fine, but if not, then that's just a few less things they will need to take and spend their money on.”

Doctors were trained in the emergency room that “anyone asking for drugs is a *baaad* person. [But] if you want to believe people are drug seekers, then you will find what [you think] you see,” Gordon said. “If you don't believe that everyone asking for medication to alleviate severe pain is a drug-seeking addict, then you may see ‘drug-seeking’ individuals occasionally but not nearly as often as you see people whose quality of life is greatly improved by the drugs.

Pain management isn’t just a matter of prescribing powerful drugs. “You try to figure out all the pieces and see what works to makes them feel better,” Gordon says. With CFS/FM, what works for some patients doesn’t work for others, or works at different doses.

He added a caution for those taking Tylenol: Not only does it use up glutathione, requiring NAC supplementation (glutathione is mostly broken down in the intestine before it gets to the liver; taking NAC gets more to the liver where it is needed for detoxification), but for most people, 4 grams of acetaminophen is toxic. If you are taking that much or more each day, you should be investigating alternative pain or headache medications.

Web Links

Eric Gordon, MD
www.ericgordonmd.com

Biochemical Individuality
www.ericgordonmd.com > Reading

Common Sources of Ethylmercury
www.ericgordonmd.com > Medical Information

Great Smokies Diagnostic Laboratory

www.gsdl.com