

The newsletter of the Chronic Fatigue Syndrome & Fibromyalgia Support Group of Dallas-Fort Worth. Sponsored by:



Volume 3, No. 1, January, 2001

GROWTH HORMONE AND BOVINE GROWTH FACTORS: THE CONSTRUCTION WORKERS AND THE BLUEPRINTS OF THE HUMAN BODY

DR. CHENEY: ADVANCES IN CFIDS TREATMENT

A SPECIAL ISSUE DEVOTED TO INFORMATION FROM A CONVERSATION WITH CFIDS SPECIALIST, PAUL R. CHENEY, MD, PH.D.

Written by our group facilitator, this issue's articles are based on tapes of her October 2000 visit. Dr. Cheney gave permission to share this information, but has not reviewed or edited it. Articles on other topics will be in the next newsletter, and will soon be available on our website. These articles likely apply also to FM patients who experience cognitive difficulties in addition to pain and fatigue, since Dr. Cheney believes they may also have CFS. Dr. Cheney plans to speak in the DFW area in October 2001.

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Dr. Cheney has 16 patients poised to be his most promising study yet. The six-month trial involves growth hormone (GH) injections and five different types of bovine growth factors (bGF). Dr. Cheney believes this may be helpful to phase III patients who are “symptomatically improved but physically limited” and some phase II patients who are treatment-resistant. Per Cheney, “The study is an ambitious but promising attempt to stimulate the body’s innate healing potential to repair damage done to it over years of CFS related pathology.”

An oversimplified explanation is that GH acts as the construction workers and bGFs are the blueprints to repair damage to the brain and organ systems.

WHAT DOES GH DO?

Like construction workers build various buildings, centers and roads, GH acts as workers inside our bodies to stimulate muscle and bone growth, help regulate metabolism, slow the production of fatty tissue, help maintain blood sugar levels for the brain, help regulate all other hormones, and make fat available to the cells as an alternative fuel.

In healthy people, GH levels are near zero most of the time but spike (increase) in response to physical stress. GH works to synthesize protein. As it spikes in response to exercise, the muscles break down and then repair themselves so they are better than before. It’s called training and your body gets stronger. But if you try to train when you have no GH, you induce micro-trauma and your muscles break down instead of becoming stronger.

Associated with stage 4 sleep and sleep quality, GH works during your sleep period with a major spike occurring in the middle of your

“night,” (however that’s defined). They are interdependent. Like the chicken and the egg: no GH—no stage 4 sleep, no stage 4 sleep—no GH.

Dr. Cheney stated, “At 3 a.m. the liver comes up and maximally detoxifies. Isn’t it interesting that the body spikes GH not long before the liver needs it? It primes the liver. If you don’t get the GH priming at midnight, your liver doesn’t work and you become more toxic.”

CFIDS: GH DEFICIENCY SYNDROME

Dr. Cheney first learned about this when reading a Ph.D. thesis by Greta Moorkens published in May 2000. Using the Insulin Tolerance Test (ITT), Moorkens found that CFS patients had, on average, a 50% reduction in GH. Her patients, however, had only been ill an average of 18 months, a relatively short time. Dr. Cheney suspected that patients who have been ill longer might have a more profound deficiency. He also knew he could no longer rely on the standard IGF-1 test to measure GH, since Moorkens’ paper showed it was not a reliable measurement of GH.

To compare two different testing methods, Dr. Cheney used both the ITT and a maximum exercise test—a bicycle stress test. He drew blood from CFIDS patients before the bike test, and again ten and twenty minutes after the test. The ITT was only done on a few patients because it is so hard on them physically. Dr. Cheney believes the bicycle test is safer. Both tests gave the same shocking results in each patient: no growth hormone responses at all, not even a tiny spike.

Dr. Cheney has tested three of our local members using the bike test. Two had no GH response. One had a small spike. Twenty

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minutes after the test she had a level of 5.6 ng/mL. The middle of the normal range is 24; anything under 10 is deficient.

DANGERS OF GH DEFICIENCY

Dr. Cheney explains that if your GH response is zero that means serious trouble. "You lack sufficient control of protein synthesis to respond to exercise, to stage 4 sleep, to the needs of detox, and many other problems."

To make matters worse, if your immune system is TH₂ dominant (as is the case in most CFIDS patients—see next article), the only thing standing between you and cancer, viral infections and intracellular bacteria is RNase L, which you cannot make without GH. It is a very serious problem.

GH DOSING AND FREQUENCY

Six months of experience using GH injections in his patient population have convinced Dr. Cheney that it is one of the most powerful treatments for a CFIDS patient. However, the dose and the frequency of the dose are critical. The standard dose (0.1 to 0.2 cc's three times a week) put Dr. Cheney's patients in bed. In his words, they crashed and burned.

To give that much GH to a seriously deficient patient is a "command directive" for the body to increase protein synthesis, including RNase L. That is very expensive in terms of energy. With no energy to spare, the body must redirect every ounce to protein synthesis. You may be making RNase L but too much of it contributes to the crash.

Dr. Cheney starts patients at 0.005 cc's once every five days. They can advance up to 0.07 cc's, though most do not get beyond 0.02 cc's, given twice a week. More specifics on determining dose will be available soon on our website.

TWO SUCCESSFUL CASES

One very ill patient was sensitive to everything: vitamins, drugs, supplements, food, the environment. He was very pallid from liver dysfunction and his white count was 2. He has had the most dramatic response so far. His liver has come back; his immune system has come back. He is now responding to interventions that have never worked in the past.

Another patient was menopausal and on thyroid medication, estrogen and progesterone.

After starting GH injections, she cut her thyroid medication in half. Her periods resumed and she no longer must take progesterone.

According to Dr. Cheney, GH encodes (gives instructions to) the receptors for all other hormones. If you do not have any GH, none of your other hormones can work properly. Many female CFIDS patients appear menopausal, yet estrogen levels in their saliva and urine are sky high. Estrogen goes right through them because there are no receptor sites with which it may bind.

BALANCE THE IMMUNE SYSTEM FIRST

GH raises immune function, but increases the TH₂ side in particular. Thus, it is important to balance the immune system before beginning GH injections. (See next article.)

GH RISKS

1) Cost

It is costly. But if you are shown to be deficient, insurance will usually pay.

2) Sensitivity

CFIDS patients are sensitive to it, so it is imperative to get the dose and frequency right.

3) Cancer Growth

Growth hormone does not cause cancer, but will increase the growth rate of any undetected cancer. Patients should have routine screening exams. Cheney strongly recommends the AMAS test (Anti-Malignant Antibody Screen). This blood test checks for all forms of cancer. It was based on the well-published discovery by two Harvard professors who found that all cancers express a substance to which the body produces antibodies. Covered by Medicare, the test costs \$135. For more information or a test kit, call 1.800.922.8378.

4) Axis Suppression

(The author believes Dr. Cheney is referring to the HPA axis—hypothalamus, pituitary and adrenal.) Dr. Cheney commented, "If I give GH, will I suppress your own endogenous capacity to make it? If I did that, I commit you to GH forever. But this is not a concern if you have no axis to begin with!"

REPAIRING THE DEFICIENCY

Can the damage that caused the GH deficiency be repaired? Can your hypothalamus and axis be resuscitated? Dr. Cheney believes it's possible. How? He explains that it may happen the same way they cured the Parkinsonian patients featured in the May 22 issue of Newsweek.

Parkinson's Disease involves the death of certain brain cells causing a progressive loss of muscle control. In this revolutionary study, doctors grafted fetal stem cells into nineteen recipients. Sixteen of the grafts "took." Of those, the stem cells repaired the damage to the brain and cured the disease in patients under age 60. In those over 60, the process didn't work. The difference? Growth hormone! For stem cells to work, you must have enough GH.

STEM CELLS

Stem cells are embryonic, undifferentiated cells capable of becoming virtually any cell of the body. According to Cheney, "Stem cell differentiation into a neuron and integration to repair the brain is a highly protein synthesis intensive process. Without GH, the stem cells do not work.

"You might say, 'Dr. Cheney, they used stem cells in this study but you are talking about growth factors, not stem cells.' Well, ten years ago when they started this research, they did not think there were any stem cells in the body, especially at the 60-year mark. But recent research has proven that there are stem cells in the body. All we have to do is turn them on. And growth factors turn them on!"

Cheney explained how scientists have repaired brain injuries in monkeys; it wasn't necessary to give them stem cells. Stem cells were already there just waiting for a message and enough protein synthesis to work. Scientists were able to repair the monkey's brains using bovine growth factors (bGF) to trigger the stem cells.

Following the bGF therapy, the monkeys had plenty of GH. Cheney believes we need to give you GH, then add bovine growth factors. Cheney noted, "If this works, then we repair your hypothalamus, and your axis comes back, your endogenous capacity to make GH comes back, and we get you off GH."

Cheney said, “I don’t like the idea of injecting this patient population with GH for the rest of their lives. I’d rather just give it to you for a short time, while you heal your systems. But I have yet to determine that. Worst case, you’re committed to GH for the duration. Best case, just until such time as we repair the injury that causes the GH deficiency. And if that works, of course, then we have a lot of good things to do in the area of CFIDS. Almost everything else is secondary to these central features.

DOCUMENTING BRAIN REPAIR

“How do we prove we have repaired the brain? One way is functional: give the bicycle test to show that your growth hormone response to exercise, which was deficient initially, comes back after therapy.”

The other way to prove brain repair is to actually measure the injury itself. Cheney sends his patients to Columbia Medical Center in New York for an MRS (Magnetic Resonance Spectroscopy) for this measurement. He recommends it to many of his patients, not just those in this study. This is a good test for disability documentation. The test readout is a horizontal line with periodic spikes of different heights. Each spike represents a particular substance or chemical.

This particular MRS scan is of the hypothalamus and the cerebrospinal fluid in the left ventricle of the brain. Dr. Shungu, a spectroscopy expert and radiology professor, does the test.

Dr. Shungu examines four particular spikes in CFS patients including:

1) Coline

It is involved in the myelin sheath; a decrease indicates Multiple Sclerosis.

2) Creatine Phosphate

It is usually elevated in CFS patients and indicates the increased stored energy of the anaerobic system.

3) NAA

If this is decreased, as is typical in CFIDS, it indicates brain cell death.

4) Lactic Acid

There should be none present; this is what is glaringly elevated in every CFS patient tested. It indicates a high degree of tolerance to the damage to the aerobic system.

Cheney commented, “If the viability spike, NAA, increases after therapy and the lactic acid spike decreases, it means we are repairing the brain.”

HISTORY OF GF USE

GFs were used eighteen years ago at UCLA to repair bones that wouldn’t heal. The first publicized use was in 1982. In Europe, they’ve been used much longer. Cheney noted, “Pope Pius XII received injections on his death bed in 1952 and lived four more years. GFs have been around a long time, but it’s only been in the

last ten years that scientists have begun to discover how they really work.

“You don’t have to use human growth factors. You can use mammalian GF’s. They initiate stem cell differentiation. It becomes whatever is needed and will repair any injury. All you need are growth factors and sufficient growth hormone.

YOUNG PEOPLE WITH CFIDS—90% RECOVERY

“Nine times out of ten, young people with CFIDS recover. Past 20, you’re lucky to see one out of ten recover. Why? Growth hormone. You have to have enough GH to get through it. Young people still get hit, some very hard, but they have so much GH that they can lose 50% and still have enough. Once you reach 20, your GH is half what it was at 15. It drops precipitously after puberty.

“I think this syndrome transforms you into a very low GH state. Once that happens you can’t really repair the damage. You can get through the syndrome, maybe; get through the pathophysiology of the disease, maybe; but then you’re locked in, limited. To repair the damage—the focus of which is the hypothalamus—you need GH. Since GH seems to be the center of aging, essentially the treatment of Phase III CFIDS is going to mimic the treatment of age-related injury.”

Cheney believes that younger people may only need GH, not the bGFs, since they may still have functioning GF. Older patients will certainly need the bGFs. Even if they have some functioning GFs, taking the bGFs should accelerate the healing process.

BOVINE GF

Those in the study will take GH the entire six months. They will begin mesenchyme fetal bGF the second month and continue for the duration. The four remaining bGFs (liver, thymus, adrenal and brain) are taken consecutively for a period of one month each. The study protocol states, “GH is expected to significantly increase the bGFs healing potential as orchestrators of endogenous stem cell migration, differentiation and integration to effect tissue healing. The target tissues for healing in this study are liver, immune system, adrenal gland and especially the hypothalamus.”

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“... AND THE CAVALRY NEVER CAME”

THE TWO MODES OF THE IMMUNE SYSTEM

CFIDS patients are TH₂ activated. This means we overrespond to toxins, allergens, normal bacteria and parasites, and underrespond to viruses, yeast, cancer and intracellular bacteria. Dr. Cheney suggests six products that can help rebalance the immune system.

Dr. Cheney explains that the immune system has two different modes of attack, based on the type of invader. One is TH₁ (T Helper 1). It goes after living organisms that get inside our cells and cause disease—intracellular pathogens. It is also known as cell-mediated immunity.

The other is TH₂ (T Helper 2). It attacks extracellular pathogens—disease-causing (living) organisms found outside the cells in blood and other body fluids. Some call this humoral or antibody-mediated immunity. A healthy immune system is dynamic, able to switch back and forth as needed, quickly eradicating one threat and then resting before responding to the next invader.

Dr. Cheney explained by drawing this diagram. TH₀ are the naive cells of the immune system (the blanks). They are resting, waiting for an invader. When infection occurs, they convert to either TH₁ or TH₂.

When the resting cell is exposed to a virus, cancer, yeast, or intracellular bacteria (like mycoplasma or chlamydia pneumonia), the TH₁ response is initiated. The weapons of the TH₁ system include cytotoxic T cells and Natural Killer (NK) cells.

On the other side of the coin are normal bacteria, parasites, toxins, and allergens. These trigger a predominately TH₂ response. Its weapons include eosinophils (Eos), polymonuclear cells (PMN), and antibody secretin)g cells (Ab).

How does the naive cell know which pathway to take? Interleukin 12 (IL-12), triggered by the things on the left, makes it go down the TH₁ path. Interleukin 10 (IL-10), triggered by things on the right, makes it go down the TH₂ path.

This is where it gets very interesting. Viruses, especially herpes viruses like EBV, CMV and HHV6, make proteins that mimic IL-10.

The virus deceives the immune system into thinking that the threat is coming from the opposite side! So the immune system shifts from the TH₁ mode that attacks viruses, to the

TH₂ mode that does not. The virus increases its chance of survival by diverting the immune system. It is now thought that many, if not most, pathogens have this ability.

Researchers have demonstrated that most CFIDS patients end up stuck in TH₂ mode. This has several consequences. When the TH₂ system activates, it blocks the TH₁ system. This suppresses the TH₁ weapons, particularly NK function. There is also an increase in the TH₂ weapons—the white cells and antibodies. Most notable is increased antibody production. Measuring antibodies to anything a CFIDS patient has ever been exposed to will show them to be elevated.

Cheney notes that other problems ensue. Patient's bodies get into trouble on both sides: they overreact to things on the right side and underreact to those on the left. When they are TH₂ activated, they no longer have the defenses to suppress and keep dormant those things caught long ago. They cannot control them anymore, and the EBV, chlamydia pneumonia, CMV, etc. reactivate. Yeast also begins to appear.

The only defense against being “eaten alive” at this point is RNase L. RNase L cannot kill any of these organisms. (For more information, see *The Three Phases of CFIDS* and other articles in the Cheney section of our website.) It only

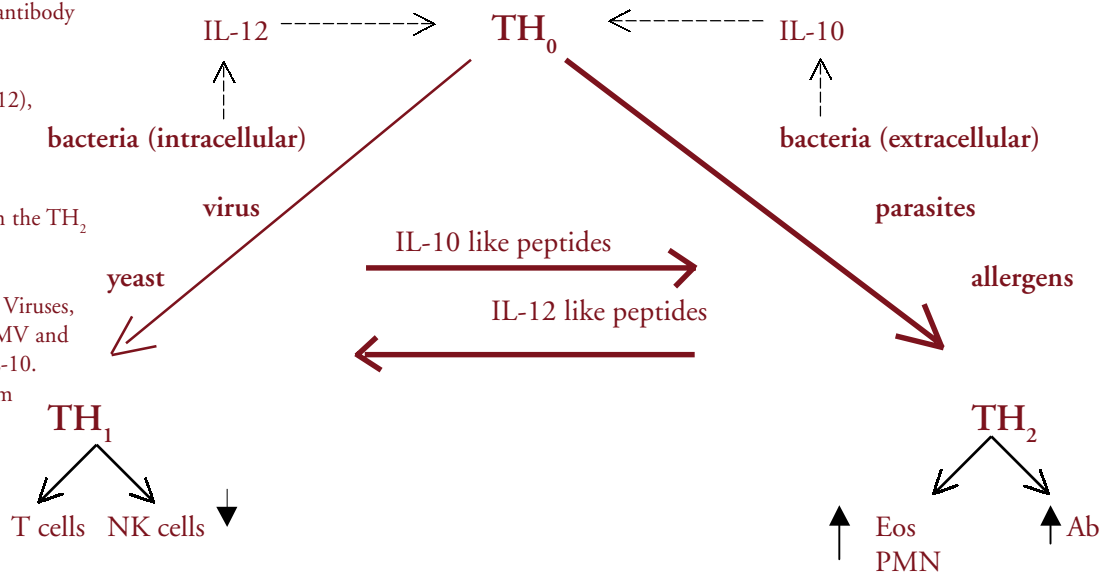
stops them from reproducing. It's a line in the sand saying “No more replication,” and it waits for TH₁ to come and kill them. But TH₁ never comes.

RNase L sits there grinding away, possibly increasing and decreasing its molecular weight as the pathogens activate and reactivate. But they never get wiped out. RNase L waits for the cavalry that never arrives.

While it is valiantly trying to hold the line, it is also chewing up human messenger RNA, inhibiting all the enzymes in the body, disrupting protein synthesis, and generally making patients miserable. As RNase L grinds away, it eventually shifts into an “afterburner” desperation mode—the more powerful and deadly low molecular weight form.

According to Cheney, RNase L is a very good anti-cancer defense. So as long as patients are involved in this scenario, they do not get cancer. However, a lack of GH will wipe out RNase L and we now know there is a profound loss of GH in CFIDS. GH is responsible for protein synthesis, and RNase L is a protein. If GH is lost, patients cannot produce RNase L. That may explain why, as the disease wears on and more injury occurs, we stop seeing high levels of RNase L.

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He believes this is a very scary situation. Patients are TH₂ activated and TH₁ suppressed. The things on the left come out and there is nothing to stop them. There is no TH₁ and eventually, no RNase L.

He also believes that patients must balance the immune system—push it a little more towards TH₁. That way they will lose some of the overreaction on the right and gain some control on the left.

Cheney recommends the following to help shift the immune system from one mode to the other. They are called “right-to-left shifters.” Three are published or near publication.

1) Kutapressin

published, prescription

Kutapressin is an immune modulator and a broad spectrum antiviral. Dr. Cheney has found that it is most effective when the dose is varied. The dose should vary from 1 to 4 cc daily; see the section on Isoprinosine for this theory. Dr. Cheney strongly suspects Ampligen is a right-to-left shifter also. He has said in the past that Kutapressin is rather like a weak form of Ampligen.

2) Isoprinosine

published, prescription

Published for use in CFIDS, this specifically enhances NK function. The abstract is at faseb.org/aai00t/f977.html. Dr. Cheney believes it would also be good against intracellular bacteria since it is a TH₂ - TH₁ shifter. It appears to raise IL-12 and lower IL-10, which turns off TH₂ and turns on TH₁.

It is also called Imunovir and is very nontoxic and safe. It has been approved in Europe and Canada for just about any viral infection for 18 years. It is not approved in the US (for political reasons not safety concerns) but is easy to get from Ireland with a prescription. Contact Newport Pharmaceuticals at 353.1.890.3011, (fax 353.1.890.3016) or email them at newport@indigo.ie.

Week one, take 6 tablets a day, Monday through Friday, and none on the weekend. Week two, take 2 tablets a day, Monday through Friday, and none on the weekend. Repeat this cycle. But do not treat every month. Do two months on and then one month off this routine. This medicine works best when you do not treat regularly. If you treat continuously at the same dose, it stops working. It is an immune modulator, and Dr. Cheney suspects all immuno-modulators are

like this. If taken continuously they stop working. The dose must vary so the immune system never knows what you are going to do.

3) Pine Cone Extract

supplement, pinextra.com

They make a tea from this in Southern Japan and reportedly this extract has significantly reduced cancer rates. It is thought to work at the genetic level in lymphocytes, where it turns IL-12 on. It also shuts down IL-10 at the genetic level which causes a shift towards TH₁. Pine Cone extract seems expensive, but at just 10 drops a day (in the morning) it may be one of the cheapest options. It's name is PineExtra. One ounce is about \$60 but it lasts a long time.

4) Earth Dragon Peptides

supplement, nutricology.com, needs.com

Earth Dragon is round worm peptides. It causes a shift to the left, and is believed to be very similar to IL-12. There has been a huge surge in the use of ED peptides to treat Inflammatory Bowel Disease, specifically Crohn's Disease. One professor at UNC treats all his Crohn's Disease patients with Earth Dragon. It is very nontoxic and safe. This is a good choice for those who want to balance their immune system and also have bowel problems. Earth Dragon is about \$36 for 150 caps. The dose is two a day.

5) Heparin

prescription

Heparin is a TH₂-TH₁ shifter. One advantage for many patients is that it is also an anticoagulant. Dr. Cheney only recommends this if a patient has a coagulopathy. About half his patients do per the ISAC test. (See hemex.com or “Blood-Related Disorders in CFS/FM” in our October 2000 newsletter on the website.)

6) Formula 560 Transfer Factor

to be published, supplement

immunitytoday.com

Formula 560 is an immune modulator. Dr. Cheney likes this product. It reportedly works against HHV6 and Lyme Disease, as well as other problems. It costs about \$585 for the first three months, then the dose drops one-third. It averages out to about \$130 a month for the first six months, and \$65 thereafter.

Which should you use? Pick one and see what it does to your NK function. It's a question of whether it will work and cost. NK levels will rise if there is a shift from TH₂ to TH₁.

Before beginning any of these products it's best to get a baseline on NK function. Then +again after having been on the product for one to three months. Dr. Cheney uses the lab of Mary Ann Fletcher, an NK specialist and colleague of renowned researcher Nancy Klimas, at the University of Miami.

Her lab is no more expensive than top quality commercial labs. You must have a quality lab do this. Don't use just any lab. For test information, phone 305.243.6288 (fax 305.243.4674). The test name is “Natural Killer Cell Function Assay” and costs \$350.

Note: This is not medical advice. See your healthcare provider for medical advice.

WHY KENYANS ALWAYS WIN: INCREASE YOUR OXYGEN INTAKE

a year ago Dr. Cheney was prescribing oxygen (with a partial rebreather mask) to increase oxygen transport from the blood into the cells. The benefits were many, but most people found it expensive and difficult to arrange. Dr. Cheney also discovered that the treatment had one flaw: it didn't address the underlying problem of low 2,3 DPG.

2,3 DPG triggers the release of oxygen from the hemoglobin and allows it to enter our tissues. Without enough 2,3 DPG the oxygen cannot release from the hemoglobin into the cells.

This oxygen deprivation causes the body to switch over to anaerobic metabolism, which produces tissue acidosis, which is painful. If 2,3 DPG levels can be increased, then more oxygen is transported from the blood into the tissues.

What are the benefits of increased oxygen? They include more energy at the cellular level, suppression of yeast and other pathogens, and prevention of the swelling of the brain due to decreased oxygen.

Dr. Cheney says this swelling of the brain is somewhat common and is the connection between Chiari I and CFIDS. He stated, “Chiari I is a compression phenomenon due to

ANTIBIOTIC PROTOCOLS & TH₁/TH₂ IMMUNITY

When asked about antibiotics, Cheney said he isn't against using them. Sometimes they are absolutely necessary. However, he prefers other options whenever possible.

For normal (extracellular) bacterial infections, Cheney really likes the drug Zithromax. Unlike most, this antibiotic ends up concentrated in white cells, which rush to the infection site, where the drug is needed.

Since it goes directly into white cells, the blood level of this antibiotic is only one-tenth of most others. This maximizes the effectiveness of the drug and minimizes the side effects, which include wrecking good gut flora. Most CFIDS patients already have fragile guts. Zithromax is useless against the unusual intracellular bacteria—they don't attract white cells.

Regarding intracellular bacteria like mycoplasma, chlamydia pneumonia and lyme, he's concerned by the pattern he's seen over time. The treatment protocol keeps expanding to longer and longer time periods. In the beginning it was one month, then six weeks, then two months, then six months. Now it's up to two years. He doesn't feel the antibiotic protocols are addressing the real problem.

They keep finding that when they stop the treatment, the "bug" comes back. Cheney believes that many patients treated with these current protocols will find they have to be on

them for life. The side effects don't make this a good option for most patients.

The real underlying problem is that CFIDS patients are TH₁ suppressed, and these bacteria are supposed to be dealt with by TH₁ immune defenses.

Since they are TH₂ activated, they do not have the immune system to fight whenever possible or to keep them dormant. Perhaps that is why these things are a problem for CFIDS patients, but not for otherwise healthy people. Their immune systems can handle them. Ours cannot.

Perhaps even the antibiotic protocols presume the immune system will jump in and do its part. But the cavalry (TH₁) does not come! Cheney said, "That's why they have to keep extending the length of time. You just can't get there with antibiotics. And then you've exposed the gut to the heavy antibiotic usage.

"I believe the appropriate approach is to rebalance the (TH₁/TH₂) problem you have (using one of the six mentioned products), measuring and then remeasuring NK function to see if what you did in fact rebalance it."

Hopefully the body will be more balanced and able to defend itself, particularly with help from one of the whey products that have shown indications of wiping out intracellular bacteria and even viruses.

Oxygen... continued from page 5

lack of sufficient space at the base of the skull, while CFIDS is a compression phenomenon due to anoxic cerebral edema." (Brain swelling due to lack of oxygen.)

Dr. Cheney asked, "Do you know why Kenyans always win the Boston marathon? They live and train at a high altitude. They run like fiends at 12,000 ft. To compensate for the lack of oxygen at higher altitudes, their bodies make a physiological adjustment—raising 2,3 DPG levels so more oxygen is released. Then the Kenyans go to Boston, which is at sea level, and run their race. However, their bodies are still set for high altitude, so they end up with more oxygen transported into their tissues than other runners. They are super-oxygenated."

Dr. Cheney's goal is to trick our bodies into thinking that we live at a higher altitude, thus

raising our 2,3 DPG levels, thereby transporting more oxygen. How? By regulated breath holding.

Inhale through your nose for four seconds, hold your breath for seven seconds, then exhale through tightly pursed lips, creating "back pressure," for eight seconds. Do this eight times, twice a day, everyday. That's all it takes to make your body think it lives in Denver instead of Dallas.

You must do this regularly for it to work, and it takes weeks for the body to adjust the 2,3 DPG levels. But your oxygen transport will get better and better over time. This method is 3,000 years old, and has 30 years of clinical experience behind it. Some believe it is the most powerful way to treat chronic illness. Compared to the rebreather, this is easier, cheaper, more effective, and you cannot overcorrect and get too much O₂.

DRINK GOOKINADE TO INCREASE BLOOD VOLUME

A study by Bell and Streeten established that the average CFIDS patient has only 70% of normal blood volume. To address this, Dr. Cheney recommends drinking one quart of an electrolyte solution daily on an empty stomach. The best one he has found is Gookinade.

Gookinade is rapidly absorbed into the blood stream through the stomach lining because it is isotonic—it matches the chemical concentration of the body's fluids.

When one of our local members asked Dr. Cheney about vitamin IV's, Gookinade came up. While Dr. Cheney thinks the IV's can be very helpful, he told her that if they are inconvenient or expensive, she could get virtually the same benefit from her regular supplements and drinking Gookinade. (This assumes there is no problem assimilating supplements.) Because Gookinade absorbs so rapidly, it acts like an IV.

The glucose concerned some since it's a sugar and sugar feeds yeast. He said that it is not a concern with this product. Gookinade passes directly from the stomach into the blood and never enters the intestinal tract where the yeast flourishes.

Only fluids similar in concentration to the body's are easily absorbed. Water can cause the cells lining the stomach to swell, and slow absorption.

Solutions that are too concentrated can pull water from your body into your digestive tract.

Founded by Bill Gookin, call 800.283.6505 for information. For a Gookinade replacement see virtualhometown.com/dfwcfids/archive/cfs0102.pdf.

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