



## A MONTHLY NEWSLETTER FOR OUR HIGHLY VALUED CENEGENICS PATIENTS.



### TESTOSTERONE & TOTAL MORTALITY

In a previous newsletter, we briefly discussed the fact that low testosterone is associated with an increase in total mortality. Now we present additional evidence and studies supporting this. In recap, evidence clearly indicates that men with declining testosterone levels are at greater risk for a number of chronic diseases and have an increased risk of death as a result. The study funded by the National Institute on Aging and the American Heart Association was published in the 2007 *Journal of Clinical Endocrinology and Metabolism*: "Androgen Deficiency and All-Cause Mortality in Older Men: The Ranch Bernardo Study."

This study showed that men older than 50 with androgen deficiency are at a greater risk for all-cause mortality than their peers with age-appropriate testosterone levels.

The population-based study of community dwelling "healthy older" males followed 794 men with an average age of 72 years at baseline. These men were followed for up to 20 years, though the average follow-up time was 11.8 years. During that time, 538 deaths occurred. Men whose testosterone levels were in the lowest quartile were 40% more likely to die than those with higher levels. This was true even after adjusting for multiple factors including age, body fat, cholesterol, diabetes and cardiovascular issues.

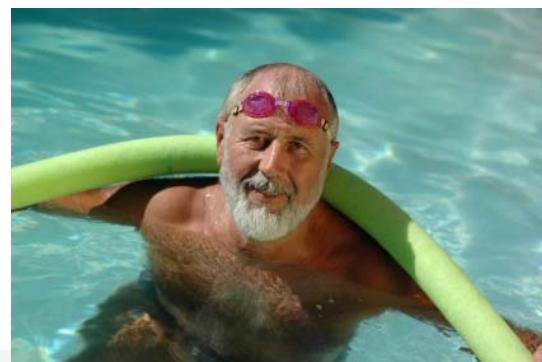
Another study published in the *Archives of Internal Medicine* in 2006, followed 858 men for over 4 years on average. Included in this study were men over 40. Testosterone levels were obtained on at least two occasions; based upon these values, the men were classified as having low, equivocal or normal testosterone. After adjusting for age and other medical illnesses, the men in the low testosterone group had a 14.8% higher death rate than those with normal levels.

**But the story is far more complicated than that.** Rarely does an isolated deficiency occur. As early as a male's mid-30s, a number of hormonal values begin to decline. A study published in 2007 called "Aging in the Chianti Area" identified men and grouped them according to significant (lowest quartile) hormonal values. They then grouped men by the number of deficiencies they possessed. The other hormones that were analyzed included DHEA-S, active growth hormone (IGF-1) and, of course, available testosterone. With time, the greater the number of deficiencies, the higher the death rate over the next six years. Men with all three hormonal deficiencies have a significant increase in death rates.

Several other studies also support this assertion. One of these studies has even observed an inverse relationship between testosterone and cancer, i.e. as testosterone decreases the cancer rate increases.

Specifically, on the subject of cancer, a recent analysis of 18 studies looking at the relationship between male sex hormones and prostate cancer risk was published. The *Journal of the National Cancer Institute* in February of this year looked at studies from 1988 to 2007, which included over 3,800 men. They measured various male hormonal parameters and compared the highest to lowest groups for cancer risk. The conclusion was that serum concentrations of sex hormones were not associated with increased risk for prostate cancer.

It must be clarified, however, that men on testosterone replacement therapy require careful long-term follow up. As part of our ongoing commitment to safety and excellence, CeneGenics monitors a number of laboratory values on a regular basis, including close observation of free and total testosterone, dihydrotestosterone and estradiol (the metabolic byproducts of testosterone) and PSA, among others. This is the cornerstone of CeneGenics' philosophy of providing proactive, rather than reactive, care for our patients.



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From her teens onward, board-certified psychiatrist Dr. Julia Binford struggled with devastating joint pain, becoming one of the five million Americans suffering with fibromyalgia. She hurt all over most of the time, barely able to practice medicine or take care of her family. She even had to take a two-year sabbatical from her practice when her condition worsened.

Like others with her condition, she made the rounds of doctors over the years, searching for a therapy to regain her life. Instead she was met with the usual status quo approaches that did little. After years of pain, she heard about a different approach and decided to give it her last-ditch effort—and it paid off. Not only did those therapies transform her health, but they also led the way to a new medical career.

### What is Fibromyalgia?

Per the CDC, characterizing the disorder are widespread pain, abnormal pain processing, sleep disturbance, fatigue and psychological distress. Additional symptoms include . . .

- Morning stiffness
- Tingling or numbness in hands/feet
- Headaches, including migraines
- Irritable bowel syndrome
- Problems with thinking/memory (“fibro fog”)
- Painful menstrual periods/other pain syndromes
- Strong reaction to things others don’t find painful (abnormal pain perception processing)

Its causes and/or risk factors are unknown, but disease onset is associated with . . .

- Stressful or traumatic events, such as car accidents, post traumatic stress disorder (PTSD)
- Repetitive injuries
- Illness (e.g. viral infections)
- Certain diseases (i.e., SLE, RA, chronic fatigue syndrome)
- Genetic predisposition<sup>1,2</sup>

1. Arnold LM, Hudson JI, Hess EV, Ware AE, Fritz DA, Auchenbach MB, Starck LO, Keck PE. Family study of fibromyalgia. *Arthritis Rheum* 2004;50(3):944-952.

2. Neumann L, Buskila D. Epidemiology of fibromyalgia. *Curr Pain Headache Rep* 2003;7(5):362-368.

### Dr. Julia Binford’s story . . .

Dr. Binford always had a passion for medicine and helping others become well—especially the severely or chronically ill. She earned her bachelor’s degree in chemistry from LeTourneau University in Longview, Texas, then a master’s degree in biochemical nutrition from Texas A&M University. In 1992, Dr. Binford received her medical degree from the University of Texas Southwestern Medical Center in Dallas.

While completing a residency in psychiatry at Indiana University Medical Center, she received the William P. Fisher, MD award for excellence in clinical and academic performance and was selected to be in *Who’s Who in American Colleges and Universities*.

Throughout her career, she put her dedicated efforts to work as a staff psychiatrist, assistant clinical professor of psychiatry, clinical standards coordinator and private practitioner, often dealing with severely challenged bipolar or schizophrenic patients.

### All the while, this compassionate, skilled physician continued to battle with her own chronic illness.

*I first developed multiple joint inflammation and pain at 16. Back then, the doctors didn’t understand rheumatology, so my fibromyalgia wasn’t diagnosed and I had to somehow try to live with the condition.*

*It would flare up at different times, including in medical school. I couldn’t dissect because my hands and wrists became so painful. All through medical school, my lab partners had to do that for me while I directed. Over time, my condition started to worsen.*

*Then about seven years ago, after having two of my children, I was in pain most of the time. It could be any joint that hurt—in my hands, wrists, knees, hips, feet, ankles or jaw. Even the joint between my collarbone and sternum would flare up.*

*However, during each pregnancy, I had a respite from the pain. I thought it might be an immune system, hormonal change—or both. Since aerobic exercise has been shown to reduce some of the symptoms, I made a point to exercise quite regularly . . . even throughout my pregnancy, up to delivery.*

*But just before the birth of my fourth (and last) child, I was actually in fear of becoming disabled. I was a psychiatrist and, by the afternoon, I could hardly walk from my desk down the hall to get patients .*

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## CDC's Fibromyalgia Facts

- Fibromyalgia affected an estimated 5 million adults in 2005.
- Prevalence is much higher among women than men (3.4% versus 0.5%)<sup>1</sup> with a 7:1 ratio of women to men.
- Children also can have the disorder.
- Most people are diagnosed during middle age; prevalence increases with age.
- Adults with fibromyalgia are 3.4 times more likely to have major depression than peers without fibromyalgia.<sup>1</sup>
- Fibromyalgia patients scoring perceived "present quality of life" averaged a score of 4.8 (1 = low to 10 = highest).<sup>2</sup>
- Fibromyalgia patients scored lowest on 7 of 8 subscales (except role-emotional) of the SF-36 compared to patients with other chronic diseases.<sup>3, 4</sup>

1. Lawrence RC, Felson DT, Helmick CG, et al. Estimates of the prevalence of arthritis and other rheumatic conditions in the United States. Part II. *Arthritis Rheum* 2008;58(1):26–35.

2. Bernard AI, Prince A, Edsall P. Quality of life issues for fibromyalgia patients. *Arthritis Care Res* 2000;13(1):42–50.

3. Picavet HSJ, Hoeymans N. Health related quality of life in multiple musculoskeletal diseases: SF-36 and EQ-5D in the DMC3 study. *Ann Rheum Dis* 2004;63:723–729.

4. Schlenk EA, Aelen JA, Dunbar-Jacob J, et al. Health-related quality of life in chronic disorders: A comparison across studies using the MOS SF-36. *Qual Life Res* 1998;7(1):57–65.

*Dr. Binford story continued*

*I was worried about needing some sort of crutch—but wondered how I would use a crutch if my hands ached and were weak.*

*I visited a rheumatologist, but got the same speech about having a “fibromyalgia-chronic fatigue” picture. And I was told, yet again, there wasn’t anything concrete that could be done, except exercise and realize that as my estrogen levels decline, the pain would escalate. I did receive a packet of steroids in case I got up one morning and couldn’t drive.*

*It seemed as if I was deteriorating daily. After the birth of my last child, I retired from psychiatry and exercised even more . . . but seemed to be getting worse day by day. My 14-year-old son had to change the baby’s diapers in the evening because I couldn’t use my hands. I had to pick up the baby with the upper part of my arms—and I couldn’t climb the stairs sometimes. My husband, a heart surgeon, was already talking to his partner about what he was going to do if I became disabled.*

**Meanwhile, her husband had been investigating various practice options for his career and learned about the Cenegenics® Medical Institute. The more he read about their protocols and patient outcomes, the more he thought it a good idea for his wife to go in for a consultation.**

*Their intensive evaluation process revealed some striking facts. I may have been exercising and seemingly “fit” . . . but my blood work showed just how ill I was. The first red flag was that my body was “extremely hypothyroid.” Being so thin and exercising so much, it never occurred to anyone before, including myself, to check my thyroid.*

*I followed recommendations from my Cenegenics medical team, which included low-glycemic nutrition to reduce inflammation, more effective exercise to build up my strength, nutraceuticals (especially antioxidant and joint formulations) and a combination of different hormone optimization protocols to correct deficiencies discovered during my evaluation.*

*Giving up carbs was hard for me because I never had to watch my weight—and was the queen of carbs, eating a large piece of chocolate cake for lunch, a big bowl of ice cream with dinner, etc. But the low-glycemic diet has made a difference. I’ll have a Mardi Gras day sometimes . . . but around Christmas I gave myself a few Mardi Gras days. I felt the difference because my condition flared up.*

*Besides helping with strength, the exercise program improved my body composition. I’m the same weight, but my body is totally different. I think I had a significant amount of fat and was losing muscle before—my weight may have been low and appearance slender, but my body composition wasn’t as healthy.*

## Transformed living . . .

*Having dealt with this chronic pain most of my life, I honestly didn’t expect to do that well with any program. But the change in my health is unbelievable. I think it’s remarkable that it is not just one aspect of the Cenegenics program that is making the difference in my life.*

*I’ve gone from worrying about becoming disabled to actually feeling better than I did in my 20s! When you’re in constant pain, it takes its toll—using a certain amount of energy just to function and, ultimately, becoming irritable and depressed. Now my mental outlook has improved considerably because I’m not in pain all the time any more and can actually play with my children, enjoy every day and begin a new medical career.*

**True to her calling, Dr. Binford has redirected her passion to help others into a new medical specialty: age management medicine. She became trained and certified in the field and is opening a private practice in this month as a Cenegenics affiliate physician.**

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## **The Women's Corner**

This month's focus is on the role of progesterone—in the premenopausal and postmenopausal female.

In order to best understand the following discussion, we first need to review the normal female menstrual cycle. Let's consider a "normal" 28-day menstrual cycle. During the typical cycle, the first 14 days consists of increasing estrogen levels as a result of the ovaries responding to chemical signals from the brain (FSH). This FSH signal, or Follicle Stimulating Hormone, eventually causes the development of a dominant follicle and ovum (egg). The estrogen produced stimulates and builds the lining of the uterus in preparation for the fertilized ovum.

During midcycle, the ovary receives yet another signal from the brain (Leutinizing Hormone or LH) and ovulation occurs. The ovary produces progesterone, during the second half of the cycle, to

mature the uterine lining to maintain a pregnancy. If a pregnancy exists, progesterone levels continue to be elevated. If there is no fertilized egg present, the progesterone and estrogen levels fall 14 days after ovulation (or day 28 of the cycle). This "withdrawal" of hormones is what precipitates a menstrual period. It is the regular rhythmic balance of these two hormones that controls menstrual cycles. Most menstrual disorders are a result of imbalances in these hormones and processes. For example, as women age and approach menopause (become perimenopausal), they frequently do not ovulate. Without ovulation, the ovaries do not produce progesterone. This leads to unopposed estrogen stimulation of the uterine lining and heavy irregular bleeding, which is not at all unusual in women as they age. Knowing the "normal" pattern and the effects of these two hormones can assist you and your Cenegenics physician in determining what is most likely occurring and the best way to treat your symptoms.

***The effects of progesterone on your system.*** First, we must make a distinction between natural progesterone and the synthetic forms of progestins. The synthetic forms have been widely prescribed by the general medical community for many years now. Studies have indicated that the synthetic forms may actually have detrimental effects on heart and breast tissue. They've been noted to cause fluid retention and an irritable mood.

In contrast, natural progesterone exerts a calming effect on the brain; it is a natural anti-anxiety agent, best taken at bedtime. Studies have shown it may actually inhibit breast cancer cell growth. It is a natural diuretic and may have protective effects on heart function as well. Additional studies need to be performed; however, the early evidence demonstrates just the opposite effects from the natural as opposed to the synthetic forms.

In the premenopausal woman, dominance of estrogen and an imbalance of progesterone may cause PMS or, as it is now, called Premenstrual Dysphoric Disorder or PMDD. This PMDD consists of a symptom complex, which may include breast tenderness, bloating and mood disturbances i.e. irritability, depression and/or anxiety. Many women respond to the addition of a low dose of progesterone during the second half of their cycles.

In the menopausal female with an intact uterus, it is absolutely essential to balance estrogen with progesterone. Without the progesterone component, the uterine lining would overgrow and potentially cause heavy bleeding or theoretically a uterine cancer from unchecked overgrowth. By adding the progesterone component, it matures the lining and prevents this from occurring.

Controversy still exists as to whether menopausal women should receive "cyclical" or "continuous" therapy. In cyclical therapy, estrogen is given during the first half of the month and progesterone is **added** to the estrogen during the second half of the cycle. The proponents of "cyclical" regimens believe that since it mimics a woman's own natural cycle, it is the safer and more natural option. Many women on the cyclical regimen continue to have menstrual periods.

Another option for menopausal females is a continuous regimen. In this type of replacement, both estrogen and progesterone are taken throughout the entire month with no breaks. The progesterone dose is lower than that of the cyclical regimen; however, because it is taken on a regular basis, it prevents the buildup or overgrowth of the uterus and still provides protection against uterine cancer. On a continuous regimen, normally menstrual periods cease.

In women who have had a hysterectomy, traditionally progesterone was not given. It was generally believed that since the purpose of progesterone was to prevent the buildup of the uterine lining, the removal of the uterus meant it was no longer necessary.

We now know that progesterone receptors exist on other organs and exert powerful effects. We have mentioned the benefits on the brain, as well as potentially the heart and breast, but we haven't mentioned that progesterone is also an important player in maintaining bone density in women.

The type of replacement therapy you choose is between you and your physician. It is the balance of hormones and more importantly your personal response to your regimen that will provide maximal benefits in terms of both symptomatic relief and improved overall health. We will continue to monitor the literature and update you in these newsletters as additional evidence mounts and studies are published on the benefits of optimal replacement.

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