

1 **Science Based Nutrition Inc.****Male and female hormones
and how to fix them****Presenter: Van D Merkle DC, DCBCN, DABCI**2 **Dr. Stephen J. Hill**3 **Dr. Renee Hahn**4 **Dr. Robert Bearden**5 **Dr. Jason Jumper**6 **Dr. Mark Farthing**7 **A Gentleman with Low Testosterone
*A 68 year old patient of Dr. Andrew Dyer***

▶ Recently, we had a man age 68 come in with low testosterone. His medical doctor measured his testosterone levels to be at 158. After visiting Take 2 Healthcare he was placed on a special plan and after only two weeks his testosterone has nearly doubled to 301, with 480 being the goal.

▶ UPDATE: (11/16/2018) Total T is 501. !!!!!!! (7 months total)

▶ not one occurrence of a "cold sore," which used to occur at approximately monthly frequency, no cold, flu, or any illness,

▶

▶ The patient is now reporting his sleep quality and duration have improved, an increase in libido, stamina and performance, and recently set a personal best during a rowing workout! He also reports that his nails, hair and beard are all growing faster than they did before coming to Take 2 Healthcare!

▶

8 **62y/o male:
PSA drops quickly in one month!!**

▶ 6'0"; 182 lbs.

▶ 1-8-2020: PSA of 8.70

▶ 2-14-2020: PSA dropped to 3.00

▶ Case of Dr. Van Merkle

9 **OFF Bio Identical Hormones
Patient was utilizing Saliva Testing Since 10-2009 to no benefit.**

Monday, January 10, 2011 11:52 AM 2 weeks on her SBN Program

Since leaving your office on the 29th of Dec 2010, I have gone off of the hormones cold turkey. This includes Progesterone cream and a vaginal Estriol troche for vaginal dryness. Here is what I have found since stopping them by day #6 (Jan.4th)

▶ I am not waking up anxious, I slept better and I didn't feel sickly.

▶ On day 7 (Jan.5th) my energy was better and my mood was fantastic.

- ▶ My husband says he notices a huge improvement in my mood and I laugh a lot more. Things that used to bother me or scare me so to speak I handle much better. I seem more relaxed and I am happier.
 - ▶ I told my husband that it feels as if I had been poisoned by the bio-identicals and I feel more clean inside or something, hard to explain.
 - ▶ I feel like my body aches and pains have improved also since stopping them.
 - ▶ The one thing that has not improved is the vaginal dryness... but IT's only been 10 days!!!
- Thank you for your help,
Jane

10 **OFF Bio-Identical Hormones continued**

Dear Jane MXXXX,

As a follow-up to your report on 1-21-11 we would really like to know how you are doing.

How are you feeling? XX much better a little better no change worse

If you are better, what is better? XX energy XX sleep XX digestion

Observations: My Urinary Tract Infections are gone. They had seemed constant.

My tongue inflammation that I had had since July is gone. It had also been constant.

My digestion is good and I have been able to eat some things that I was previously having trouble with. For example: apples, pears, peas, and tomato based things.

I feel more confident to try things that I had not been brave enough to try for years due to allergies. I do not feel sick anymore.

I am also not waking in the night anymore and unable to go back to sleep. If I do get up, I go right back to sleep!!!! That has been wonderful!

11 **The Benefits of a Proper Supplement Program** ***From 55 year old female patient of Dr. Natalie Yahle***

▶ This woman had primary complaints of depression for seven years, stating she was highly stressed out, and was experiencing night sweats since 1997. She had attempted Lexapro for depression for two years which didn't seem to help so the patient quit taking it. Before she came in, she had quit all of her current supplements that she had put herself on for 4 weeks. Her comprehensive blood test was ran along with a hormone panel and a hair tissue mineral analysis to determine the toxic elements she was being exposed to.

After she was placed on the proper program of supplements according to her individualized testing results, we saw improvements in liver function, kidney function, and thyroid function in the blood. Although there were no critical findings when she was first tested, the many values that were low had all added up; contributing to all of her symptoms.

Her 3 week follow up is as follows: Her hot flashes are gone and her night sweats are gone too! She is having 2-4 bowel movements per day, her toe fungus is gone; she has lost weight, her headaches are gone and her grey hairs are darkening again.

▶

12 **SBN Consultation Tips:**

- ▶ Conditions will show in the blood, long before symptoms develop.
- ▶ The earlier a problem is found, the better results you will have.
- ▶ Even serious problems sometimes have simple safe solutions.
- ▶ Take 2 weeks or 2 months to try a safe simple natural solution.

13

14 **SBN Hormone Panel: DHEA**

- ▶ Dehydroepiandrosterone (DHEA) is a natural steroid hormone precursor produced from cholesterol mostly by the adrenal glands, gonads and adipose tissue.
- ▶ DHEA is the precursor of androstenedione, which can produce the androgen testosterone and the estrogens estrone and estradiol. Regular exercise and calorie restrictions are known to increase DHEA production in the body.
- ▶ High levels of the chemical DHEA in the body of a person bring specific effects, as this chemical is a hormone precursor similar in many respects to the other male and female hormones normally found in the body - it displays specific side effects that are connected to its hormonal action.
- ▶ Elevated levels of DHEA in the body can for example, lead to the virilization of the female body - the development of masculine features. It may induce the formation of acne on the skin, it can cause greasy skin, it can lead to the development of facial hair and hair loss in women, it may greatly enhance the rate of perspiration, and it can also lead to the development of a deeper voice in women and cause a gain in weight.
- ▶

15 **SBN Hormone Panel: DHEA cont.**

- ▶ Similarly, elevated levels of DHEA in men can lead to the opposite effect, inducing the develop of more prominent breasts - in a condition known as gynecomastia, it may cause tenderness in the breasts, it may lead to a rise in the blood pressure, it can result in testicular wasting, or make the man more aggressive in behavior.
- ▶ Men may in addition suffer from other types of hormone related side effects of DHEA, they may develop resistance to insulin, the blood sugar levels may be raised, and the patients may suffer from changed cholesterol levels as well as changed thyroid hormone levels in the blood, the supplement may also completely change the functioning of the adrenal glands.
- ▶ DHEA supplements must be used with great care by patients already suffering from diabetes or hyperglycemia, people affected by high cholesterol levels, all kinds of disorders of the thyroid, or any type of other endocrine associated hormonal abnormalities must also use the supplement with caution.
- ▶

16 **SBN Hormone Panel: DHEA cont.**

- ▶ Supplements of DHEA, if used, could theoretically speaking, increase the risk of developing certain types of cancers, including ovarian and breast cancer in women and prostate cancer in men.
- ▶ Supplements of DHEA might also be contributing to tamoxifen resistance in breast tissues of women affected by breast cancer.
- ▶ DHEA supplements have also been linked to other side effects when used for a long period of time, these symptoms can include psychological agitation and delusions, the development of sleep disorders including insomnia, extreme nervousness and mental irritability, a psychosis or manic state of mind.
- ▶ Excessive supplementation with DHEA, leading to elevated levels of the chemical in the body has been associated with the condition known as Cushing's syndrome. If the condition develops in a person unexpectedly, excessive supplementation of DHEA supplements is most likely to blame.
- ▶ The addition of DHEA can convert into the necessary testosterone for women, as the body needs, but men generally do not get much conversion of DHEA to testosterone. In fact, men tend to get more estrogen conversion from DHEA, if they use too much (over 50 mg. of DHEA per day).
- ▶ Herbs like avena sativa, maca and Horny Goat Weed may completely restore the free and total

testosterone to normal levels in many cases.

- ▶ Regular exercise and calorie restrictions are known to increase DHEA production in the body.
- ▶
- ▶

17 **SBN Hormone Panel: Estradiol (E2)**

- ▶ The Estradiol (E2) is the second form of the estrogen hormone and it is the most important form of estrogen found in the body.
- ▶ Estradiol is the predominant sex hormone present in females; however, it is present in males, albeit at lower levels.
- ▶ Estradiol has not only a critical impact on reproductive and sexual functioning, but also affects other organs including the bones.
- ▶ Fat structure and skin composition are modified by estradiol.
- ▶ Lower-than-normal levels may indicate low estrogen production related to rapid weight loss or low body fat and other conditions including previous use of hormones.
- ▶ The main considerations would be thyroid, xenoestrogens and mineral deficiencies.
- ▶

18 **SBN Hormone Panel: Estrogen (male)**

- ▶ ALERT: As of 9-2022 the male Estrogen changed from 40-115 to 56-213 pm/ml.
- ▶ The Estrogen (male) is produced in small amounts by the testes and adrenals.
- ▶ There may be some dysfunction at these areas and also with the liver.
- ▶ Major causes of excess estrogen in men include environmental estrogens like antibiotics, herbicides, pesticides and hormones used on livestock and produce.
- ▶ Medications including Propecia, body building supplements including DHEA and hormone and cancer therapy, prolonged intense stress increases demand for cortisol, which is made from progesterone can contribute to elevated Estrogen.
- ▶ Excess estrogen dominance symptoms that men can experience include weight gain, bloating, mood swings, irritability, headaches, fatigue, depression and hypoglycemia.
- ▶ Estrogen dominance is known to contribute to cancer of prostate and the breast.
- ▶ It may seem paradoxical, but men are not immune to breast cancer.
- ▶

19 **SBN Hormone Panel: Follicle-Stimulating Hormone (FSH)**

- ▶ The Follicle-Stimulating Hormone (FSH) is produced by the pituitary.
- ▶ This test may be useful in infertility. FSH levels vary over the course of the menstrual cycle with peaks at the time of ovulation.
- ▶ It is also increased in primary hypogonadism commonly known as menopause, gonadal failure, and alcoholism.
- ▶ High plasma follicle stimulating hormone (FSH) is an early indication of ovarian aging.
- ▶ Certain medications can also elevate FSH levels.
- ▶ FSH and LH are pituitary products, typically tested together, useful to distinguish primary gonadal failure from secondary causes.
- ▶ In men, FSH stimulates testicular growth and enhances and sustains the maturing sperm cell.
- ▶ A low level of FSH in men is likely to adversely affect fertility.
- ▶

20 **SBN Hormone Panel: Free Androgen Index**

- ▶ The Free Androgen Index test.
- ▶ In most men and women, >50% of total circulating testosterone is bound to sex hormone-binding globulin (SHBG), and most of the rest is bound to albumin.
- ▶ The free androgen index can be used to estimate physiologically active testosterone.
- ▶ This index is calculated as the ratio of total testosterone divided by SHBG (both expressed in the same units) and multiplied by 100 to yield numerical results comparable in free testosterone concentration.

21 **SBN Hormone Panel**

- ▶ Luteinizing Hormone (LH) in both males and females is essential for reproduction.
- ▶ LH levels are normally low during childhood and, in women, high after menopause.
- ▶ In females, LH varies widely over the course of the female cycle. LH triggers ovulation, releasing the egg and prepares the uterus for implantation. The action of LH on the ovary stimulates androgen and other hormonal precursors for estradiol production.
- ▶ Female
 - ▶ Follicular Clinical 1.90--12.5
 - ▶ Midcycle 8.7--76.3
 - ▶ Luteal 0.5--16.9
 - ▶ Pregnant 0.0--1.5
 - ▶ Postmenopausal 15.9--54.0
 - ▶ Contraceptives 0.7--5.6

▶

22 **SBN Hormone Panel: Luteinizing Hormone (LH)**

- ▶ Luteinizing Hormone (LH) in both males and females is essential for reproduction.
- ▶ LH levels are normally low during childhood and, in women, high after menopause.
- ▶ In males, LH acts upon the testis and is responsible for the production of testosterone, which stimulates spermatogenesis and other endocrine activity.
- ▶ Persistent High LH levels indicate the normal restricting feedback from the gonad is absent increasing production of both LH and FSH in the pituitary gland. While this is typical in the menopause, it is abnormal in the reproductive years. The most common causes of persistent high LH levels are:
 - ▶ 1. Premature menopause
 - ▶ 2. Polycystic Ovary Syndrome
 - ▶ 3. Testicular failure

▶

23 **SBN Hormone Panel: Progesterone**

- ▶ For females, Progesterone levels need to be correlated with the female cycle, pregnancy or menopause.
- ▶ For men, Progesterone is a potent inhibitor of 5-alpha-reductase, which reduces the conversion rate of testosterone to dihydrotestosterone (DHT).
- ▶ It is thought that adding progesterone helps to prevent testosterone from changing into DHT.
- ▶ DHT may lead to enlargement of the prostate and cause or contribute to baldness in men and women.



24 **SBN Testing Supplies**

- 1 SBN Panel blood test
 - \$161.30 each
- Buy 5 SBN Panels
 - \$130.30 each...total \$651.500
- Buy 10 SBN Panels
 - \$116.30 each...total \$1163.00
- Buy 20 SBN Panels
 - \$100.10 each...total \$2002.00
- 1 Doctor's Data Hair Analysis test
 - \$75.00 each
- 1 Stool Kit
 - \$6.00
- UA Strips (Quant. 100)
 - \$36.00

25 **SBN Baseline Testing**

*Tests listed below in red are included in SBN Baseline Testing. All pricing is subject to change

Male

- Blood Testing: SBN Panel, Male Hormone Panel, Male Cancer Panel, Advanced Coronary Panel, T3 Free
- Other Testing: Doctor's Data Hair Test, Stool Test, , UA, UTEC Pre & Post
- SBN Member Cost: ~\$1,200.00
- What Dr. Merkle charges patient: ~\$2,300.00
-

Female

- Blood Testing: SBN Panel, Female Hormone Panel, Female Cancer Panel, Advanced Coronary Panel, T3 Free
- Other Testing: Doctor's Data Hair Test, Stool Test, UA, UTEC Pre & Post
- SBN Member Cost: ~\$1,300.00
- What Dr. Merkle charges patient: ~\$2,400.00
-

26 **SBN Baseline Testing**

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Male

- ▶ Blood Testing: SBN Panel, Male Hormone Panel, Male Cancer Panel, Advanced Coronary Panel, T3 Free
- ▶ Other Testing: Doctor's Data Hair Test, Stool Test, , UA, UTEC Pre & Post
- ▶ SBN Member Cost: ~\$1,200.00
- ▶ What Dr. Merkle charges patient: ~\$2,300.00



Female

- ▶ Blood Testing: SBN Panel, Female Hormone Panel, Female Cancer Panel, Advanced Coronary Panel, T3 Free
- ▶ Other Testing: Doctor's Data Hair Test, Stool Test, UA, UTEC Pre & Post
- ▶ SBN Member Cost: ~\$1,300.00
- ▶ What Dr. Merkle charges patient: ~\$2,400.00



27 **SBN Hormone Panel: Prolactin**

- ▶ The Prolactin Level is usually the first test done for work-up of galactorrhea (inappropriate lactation).
- ▶ It is a pituitary function test useful in the detection of prolactin secreting pituitary tumors such as microadenomas and macroadenomas with or without galactorrhea and with or without structural evidence of sellar enlargement.
- ▶ This value may be increased in patients on estrogens, blood pressure lowering and antidepressants, haloperidol, methyldopa and in patients with hypothyroidism. Verapamil has also been reported to have induced hyperprolactinemia and galactorrhea.
- ▶ Normal prolactin level does not rule out pituitary tumor.
- ▶ Prolactin secretion is episodic and is influenced by stress and by low glucose levels.
- ▶ TSH levels done along with Prolactin levels are recommended to rule out primary hypothyroidism. Prolactin secretion is also inhibited by levodopa, dopamine and thyroid hormones.
- ▶ Persistent elevations of plasma prolactin levels may be observed with and after withdrawal from chronic cocaine abuse and maybe indicative of neural derangement.
- ▶ In men, one of the primary cause of elevated prolactin is use of body building steroids and/or hair growth formulas such as Propecia, which are estrogen promoters and will or can increase prolactin.



28 **SBN Hormone Panel: Total Testosterone**

- ▶ The Testosterone Total Serum is the principal androgen in men but also plays a role in female health as well. The production of testosterone by the male testes is stimulated by luteinizing hormone, LH, which is produced by the pituitary. LH secretion is, in turn, inhibited through a negative feedback loop by increased concentrations of testosterone and its metabolites.
- ▶ Diminished testosterone production is one of many potential causes of infertility in males. Low testosterone concentrations can be caused by testicular failure (primary hypogonadism) or inadequate stimulation by pituitary gonadotropins (secondary hypogonadism).
- ▶ Since men with hypogonadism often have high SHBG levels, the measurement of free or bioavailable testosterone has been recommended when total testosterone levels are normal in men with symptoms of androgen deficiency.
- ▶ Many women with slowly progressive androgenic symptoms are diagnosed as having polycystic ovarian syndrome or PCOS. PCOS affects approximately 6% of women of reproductive age. Women with this complex syndrome experience symptoms of androgen excess associated with menstrual abnormalities and infertility. Chronic anovulation (no periods) experienced by patients with PCOS increases their risk of developing endometrial cancer. Women with PCOS are often overweight, although this is not always the case and are likely to suffer from insulin resistance putting them at increased risk for developing type 2 diabetes mellitus. Obesity and insulin

resistance can also raise the risk of cardiovascular disease in women with PCOS and give them a significantly increased risk for myocardial infarction.



29 **SBN Hormone Panel: Free Testosterone**

- ▶ Free testosterone is the concentration of unbound testosterone in serum.¹
- ▶ The majority (approximately 60% to 90%) of serum total testosterone is associated with sex hormone binding globulin (SHBG); this fraction is tightly bound and biologically unavailable to its target tissues. The remaining bioavailable testosterone is mostly bound to albumin, with only a small fraction (approximately 0.5% to 2%) circulating in the free form.^{1,2}
- ▶ Free testosterone is the form of testosterone that can diffuse into the tissues and act on receptors and is considered the active fraction by many physicians.^{1,3,4} Free testosterone assessment is recommended as a primary or secondary measure of androgen activity in men^{2,5-11} and women.¹²⁻¹⁶

30 **SBN Hormone Panel: Free Testosterone**

- ▶ The primary screening test for the diagnosis of hypoandrogenism in men is the measurement of total testosterone in serum in a morning sample.^{2,5-11}
- ▶ Determination of free testosterone can be of value in men with borderline total testosterone because alterations in SHBG levels can markedly affect the concentration of biologically available free testosterone.^{2,17-20}
- ▶ Factors and conditions that tend to increase SHBG concentrations in men include aging, hyperthyroidism, estrogens, HIV disease, anticonvulsant therapy, and liver disease.²



31 **SBN Hormone Panel: MOST IMPORTANT FOR MEN SHBG (Sex Hormone Binding Globulin)**

- ▶ The SHBG (Sex Hormone Binding Globulin) is produced by the liver, circulates in the bloodstream and binds to sex hormones.
- ▶ Once bound to SHBG, the sex hormone is no longer available for the cells to use, commonly called reduced bioavailability.
- ▶ However, the bound hormone is still part of the 'total level' of a sex hormone.
- ▶ SHBG often increases with age in men and women, which results in symptoms of low testosterone due to the fact that the testosterone is bound up leading to reduced muscle mass, low bone density, increased bone fractures, reduced libido, ED, mood changes, depression and sleep disturbances.



32 **SBN Hormone Panel: SHBG (Sex Hormone Binding Globulin) cont.**

- ▶ With older age, a decline in total testosterone is associated with an increase in SHBG.
- ▶ Studies have shown that omitting all animal-based proteins and going to a vegetarian diet might actually increase SHBG levels.
- ▶ To lower SHBG levels, a diet of less fat and more protein is preferred. Dietary fat can lower total testosterone whereas excess protein does not have the same impact.
- ▶ Minimal use of alcohol, caffeine and sugar is encouraged.
- ▶ Nutrients that might be of benefit include zinc, magnesium, vitamin D, boron and possibly DIM Diindolylmethane.
- ▶ Serious over-training has been shown to increase SHBG.



33 **Summary for hormones and sex- mostly men**

- ▶ Be healthy: get SBN tested, blood, hair, urine and UTEC.; treat accordingly
- ▶ Avoid caffeine, alcohol, smoking, sugar, low carb- eat healthy
- ▶ Moderate exercise- not extreme: combine aerobic and weight training
- ▶ Take DIM
- ▶ Avoid soy, lavender and other estrogens
- ▶ High protein
- ▶ Les fats, especially dairy, vegetable oils, fried fats
- ▶ Sleep is critical- 8 hours: uninterrupted- reduce noise, lights, EMF
- ▶ Plenty of water.-
- ▶ Having sex promotes more sex and improves function
- ▶ Avoid depression and stress
- ▶ A willing partner and romance are important if not critical

34 **Florida Chiropractic Physician Association**

**Male and female hormones
and how to fix them**

Presenter: Van D Merkle DC, DCBCN, DABCI

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