

Dear Functional Medicine Discussion Group Members:

We had an entertaining Functional Medicine Discussion Group meeting on August 24, 2017 with Dr. Karlis Ullis on Male Sexual Health. If you were not able to attend, here's the video:

<https://youtu.be/H3ViL2QINpE>. We thank Metagenics, once again, for sponsoring the food and the venue, and for having supported our group since we started. Thanks to all our members who participated in the meeting. Our next meeting will be **Thursday, September 28** at 6:30 at the Santa Monica Library at 601 Santa Monica Blvd. and we will have a joint meeting with two speakers, in what I am calling a Functional Medicine Extravaganza! **Functional Medicine Nutritionist Andrea Nakayama** will speak on **The 3 Tiers to Epigenetic Mastery in Practice** and **Dr. Isaac Eliaz** will speak on **Addressing Chronic Inflammation**. Please email me if you will be able to attend and place **Extravaganza RSVP** in the subject line. If you are not already a member, please join our closed Facebook page, Functional Medicine Discussion Group of Santa Monica.

I introduced the topic and I laid out some of the questions that Dr. Ullis planned to address to help us better understand how to work with men to balance their hormones. Dr. Ullis will discuss how to tell from a physical exam how men have low testosterone, aka hypogonadism. Approximately 40% of men in the US have hypogonadism and only 5% of them get treated. Dr. Ullis will also discuss what a proper lab panel should look like to assess men's hormones, which should include total and free testosterone, LH, SHBG, FSH, and estrogen. Dr. Ullis will discuss some of the controversies about testosterone, including whether it raises the risk of cardiovascular disease or of prostate cancer.

I then asked Adam Banning of Metagenics to talk about men's sexual health and nutritional supplements. Adam began by talking about how many men are ending up in a state of metabolic syndrome with visceral adiposity and thinning hair on their heads, as Adam stroked his bald head. Thinning hair often indicates DHT levels being elevated which results from elevated levels of 5 alpha reductase which converts testosterone into DHT and there are supplements that can inhibit 5 alpha reductase. With respect to excess bodyfat, you tend to have higher levels of aromatase, which leads to the conversion of testosterone into estrogen. Some of these men may have similar symptoms as women with estrogen dominance. The use of a product from Metagenics called **Testralin**, which contains phytonutrients that inhibit 5 alpha reductase and aromatase, including green tea, flax lignans, and phytosterols, can be a helpful adjunct for patients taking testosterone replacement. For patients who do not want to take testosterone, taking a supplement known as **HisSynergy**, containing Tribulus, Ashwaganda, and Cowage, which can help with the conversion of progesterone into testosterone. Ashwaganda is an adaptogen that reduces stress levels, which reduces cortisol, which increases the likelihood of progesterone being converted into testosterone rather than into cortisol.

I then introduced **Dr. Karlis Ullis**, who has established himself over the years as an expert in both Sports Medicine and also in **Male Hormonal Health**. My first question to Dr. Ullis was, **"When a man comes into your office, how do you first suspect that he may have hypogonadism, or low testosterone?"** Dr. Ullis said that this is worldwide epidemic of hypogonadism, obesity, and sterility. We have low sperm count, a lot of diabetes, and a lot of fat people who have low testosterone. If someone comes in with a

waist circumference greater than 36 inches, sarcopenia—loss of muscle mass in their arms and legs—**there's only thing you need to do to find out if they have low testosterone: Pull their pants down and if their testicles are small and soft, then you know they have hypogonadism or low testosterone.**

Then you can run a lab test to prove that. The next thing you should do is palpate their breast tissue, looking for gynecomastia and even breast cancer and consider ordering a mammogram.

The number one symptom with hypogonadism is low sexual interest, low sex drive. Number two is fatigue and lack of motivation. I then asked Dr. Ullis about testing for male hormones and which tests he likes to run. I also mentioned that Spectracell offers very reasonably priced hormone testing, with a complete male hormone serum panel for a patient with health insurance, even if the insurance does not pay, for only \$40. Dr. Ullis said that he likes to order the following tests:

1. CBC to get a baseline Hematocrit, since taking testosterone usually results in increased hematocrit due to producing more red blood cells
2. Metabolic panel to look at the liver
3. Estradiol
4. Lipids
5. LH, FSH
6. Prolactin
7. Total testosterone
8. Free testosterone
9. Sex Hormone Binding Globulin, since high SHBG will bind testosterone resulting in low free testosterone
10. Thyroid, since patients with hypothyroid do not make testosterone very well
11. PSA

I then asked Dr. Ullis the following: **“In the US there has been a 17 year decline in testosterone levels in men in the last 20 years. Why do you think that is?”** Dr. Ullis responded that obesity is a major factor. He then mentioned xenoestrogens and endocrine disruptors as major factors for the decline in and an editorial article written by Dr. Shalender Bhasin, one of the nation's foremost andrologists, about the Massachusetts Male Aging Study, “Secular decline in male reproductive function: is manliness threatened?” <https://academic.oup.com/jcem/article-lookup/doi/10.1210/jc.2006-2438> I then mentioned the fact that there are so many estrogenic substances in our environment, such as BPA in plastics, pesticides, sodium laurel sulfate, phthalates, etc. Dr. Ullis explained that you can't avoid these estrogens and most men have measurable levels of BPA. He recommended trying to avoid the endocrine disruptors by eating organic and avoiding using these chemicals as much as possible. Somebody asked about skin care products with nanoparticles such as skin screens with zinc oxide in nanoparticle size that can be problematic? Apparently, if the particles are below a certain size, they can be dangerous. But, of course, zinc oxide is an alternative to chemical sunscreens that are also dangerous to our health.

Dr. Bennett asked what to do about high SHBG levels? Dr. Ullis said you have to look at their liver since this is where SHBG is made and see if they have some chronic infection or even slightly fatty liver due to eating too many carbs. Do a liver detox. Anabolic steroids reduce SHBG levels. Dr. Ullis mentioned that he has some patients using a combination of boron, stinging nettles, and saw palmetto, and they claim to be getting results.

I asked Dr. Ullis, **“For men who choose to use testosterone replacement, which form of testosterone do you like to use?”** He said that in the US the focus has been on gels, which you can put on your arms or under your arm pits or even in your nostrils. Dr. Ullis said that more of his patients are tending to use injections rather than gels or creams and the latest trend with injections is to do it subcutaneously in the abdomen with a thin gauge needle rather than in the side of the thigh. Injecting in the buttocks is now old school. He does not like pellets, since you can't control the levels you are giving and if the level is too high, then you can't do anything about it, since you can't take them out. He does not like AndroGel at all and prefers compounded creams over it. There is a long acting 3 month long injection available.

Dr. Ullis said that the FDA now requires that when prescribing testosterone, you should warn patients that you could have a cardiovascular problem as a result of taking it. This is because of some recent studies that showed that there is some increased risk of heart attack or stroke. Here are two of the studies: <https://www.ncbi.nlm.nih.gov/pubmed/24193080> and <http://journals.plos.org/plosone/article?id=10.1371/journal.pone.0085805> Dr. Ullis discussed the importance of monitoring hematocrit levels to manage the cardiovascular risks, since if hematocrit levels increase, then that increases your risk of heart attack and stroke. This is especially the case with injectables versus gels and creams. He will send these patients to a blood bank to have a therapeutic phlebotomy to lower their hematocrit levels.

Dr. Dalstrom asked if Dr. Ullis uses any natural supplements before putting patients on testosterone? Dr. Ullis said the first thing you need to do is have your patients consider getting off some of the drugs that are reducing their testosterone levels, including opiates, antipsychotics, Tagamet and other H2 inhibitors, spiro lactone, statins, etc. You also have to look at sleep, which is an important factor in producing testosterone. If you sleep only 5 hrs per day for 7 days your testosterone goes way down and your cortisol goes up. Stress management is also important.

Dr. Elkin mentioned that he has seen younger men who have lower levels of testosterone and he has used a combination of Clomid and HCG. Clomifene, aka, Clomid, is a selective estrogen receptor modulator that is used as a fertility drug for women, but in men it leads to increased testosterone via increasing LH levels. Dr. Ullis said that he tends not to use Clomid and HCG together because with Clomid you are trying to increase LH and HCG essentially is LH. Also, some men do not like Clomifene citrate because it is estrogenic in terms of psychology and men complain that they watch a movie and they start crying. The other problem with Clomid is that it raises SHBG and lowers iGF1. But there is in development a SERM that is a transisomer of Clomifene, to be called Androxal, that will have the positive effects of Clomid without the estrogenic effects, but it has yet to be approved.

<http://www.reprosr.com/documents/AUA%2008%20Poster.pdf>

I asked if testosterone increases the risk of prostate cancer, given that men with advanced prostate cancer are given drugs like Lupron to block testosterone levels in the thought that testosterone stimulates the spread of prostate cancer. Dr. Ullis answered that he would like to make one more comment about testosterone and cardiovascular disease before tackling the prostate question. He said last year there was a study in JAMA this year where they gave men 65 years of age and older topical testosterone for one year and they had an increase in coronary artery plaque.

<http://jamanetwork.com/journals/jama/fullarticle/2603929>

Dr. Ullis then explained that for the last 60 years the idea was that testosterone makes prostate cancer spread based on one patient case who was castrated and his prostate cancer stopped metastasizing. In the last few years, Dr. Abraham Morgentaler from Harvard, came up with the saturation theory that you can only give the prostate so much testosterone **and he found that too little testosterone was more associated with prostate cancer risk than too much.** Here is a quote from Dr. Morgentaler and Dr. Connors, “Whereas it had been assumed for decades that increasing serum androgen concentrations would increase PCa growth, it is now appreciated that PCa is exquisitely sensitive to changes in serum androgens at very low concentrations, yet behaves in indifferent fashion with changes in concentration above a saturation point, the concentration of maximal androgen stimulation.” He argues that higher levels of testosterone do not necessarily increase prostate cancer growth. <https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4650486/>

Lauren Cornell then asked about the testosterone and obesity link. Dr. Ullis said that if you have someone with obesity and low testosterone and you treat them with testosterone, they will lose some weight, but they’ll have to do a whole lifestyle program. Dr. Bennett asked which nutritional cofactors and supplements he uses to drive the cholesterol into the mitochondria so they can make hormones? Dr. Bennett said she’s thinking about supplements like pantothenic acid, acetyl CoA, etc. Dr. Ullis said that in order to increase testosterone production, you can supplement with ashwaganda and Tongkat ali, and you can take certain probiotics that change your gut microbiome.

I asked about taking Human Growth Hormone. Dr. Ullis said that the Federal Govt. is very strict about the use of HGH only in certain circumstances. Dr. Ullis is not very positive about HGH to promote longevity since it leads to elevated blood sugar levels. Dr. Elkin mentioned that it also leads to elevated IGF1 levels, which may promote tumor growth.

Dr. Ullis discussed what happens when you have young men who are taking synthetic anabolic steroids in high school to get stronger and who stop and then they have withdrawal symptoms like depression and their parents send them to psychiatrists, who put them on anti-depressants, and teenagers on anti-depressants have a high suicide rate. This is referred to as an androgen withdrawal syndrome and it has to be treated carefully. But Dr. Ullis said it depends upon the person, but his patients who have been taking natural testosterone vs synthetic steroids have an easier time stopping them.

A practitioner asked about what values on testing Dr. Ullis uses to guide when he will prescribe testosterone? Dr. Ullis said that the first thing you should do is determine the type of hypogonadism,

whether primary or secondary, whether your testicles are working to produce testosterone or not. He will often start a patient on HCG every three days for 10 shots and then he will compare their pre and post testosterone levels and if they have gone up from 250 to 750, then their testicles are working fine and all they need is LH, which is HCG. But if their testosterone level is not going up, then they may need lifetime testosterone replacement. You also need to know how well their pituitary is working and you can give them Clomid for 3 weeks and if their LH goes up, then their pituitary is working well. You need to find out where the problem is.

I asked if Dr. Ullis always checks testosterone levels in the morning? He said yes and it is probably best to do 2 samples to confirm low testosterone. He mentioned that Abbie Vie spent about 80 million dollars to advertise Androgel and they were trying to push doctors to prescribe it without even testing or it and there were Low T clinics that were telling men that taking Androgel was a fountain of youth, which isn't true. Dr. Bennett asked if Dr. Ullis ever uses progesterone in men and he said occasionally, though not often, since it is an anti-androgen. He also said that Deca-durabolin, an anabolic steroid, is a nearly identical molecule.

Dr. Gould asked whether taking statins is a problem for lowering testosterone levels. I mentioned that lowering cholesterol levels too low can make it harder for the body to manufacture testosterone and I asked if there is a certain LDL level that he likes his patients not to go below, such as 60 or 70? Dr. Ullis said that sometimes he has patients that have low cholesterol levels and he sometimes uses pregnenolone as a precursor molecule with these patients. Dr. Ullis talked about the new PCSK9 inhibitors that can drive LDL levels down to the 30s and how this may be problematic for testosterone.

Dr. Ullis said that he works with a cardiologist who puts his patients on a vegan diet which is the best to prevent heart disease. We went back and forth on this for a bit with a number of us not so thrilled with the vegan diet, including Dr. Elkin, a cardiologist who finds that most patients on a vegan diet end up consuming too many carbs. We talked about being able to do a full genomic analysis in the future and then tailor the diet to your genetic makeup.

Dr. Bennett asked if Dr. Ullis uses DHEA and he said he does not use it in men, since he said that the data shows that it tends to convert to estrogen in men. He does use it in women and that it works great in them. He starts with a dosage of 5 mg and will go up to 25 mg.

See you September 28 for our Functional Medicine extravaganza, a very special evening education for free!