Dear Functional Medicine Discussion Group Members:

We had an interesting Functional Medicine Discussion Group meeting on July 27, 2017 with Dr. Mike Carragher and Dr. Jill Stocker on Female Hormones. If you were not able to attend, here's the video: https://youtu.be/mh4FihUcf78. 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, August 24** at 6:30 at the Santa Monica Library at 601 Santa Monica Blvd. and **Dr. Karlis Ullis** will lead a discussion on **Male Hormonal Health**. Please email me if you will be able to attend and place **Male Hormones RSVP** in the subject line. I will send out the official invite in the next week. If you are not already a member, please join our closed Facebook page, Functional Medicine Discussion Group of Santa Monica.

I briefly described the history of hormone replacement therapy in the US to set the tone for the discussion. I mentioned that **for more than 60 years women were treated with Premarin (estrogen from horses) or Prempro (equine estrogen plus synthetic progestins) to relieve menopausal symptoms like hot flashes, night sweats, mood swings, and insomnia.** It was also believed that women had a lower risk of heart disease because of estrogen and this was why their risk of heart disease went up equivalent to men after menopause, so **it was also believed that HRT reduced heart disease**. In the 90s there started to be concerns about an increased risk of estrogen related cancers, like breast cancer, but there were no alternatives for hot flashes and vaginal dryness and the other menopausal symptoms, so HRT continued to be prescribed. **Then in 2002 a nuclear bomb exploded on the Hormone Replacement world with the publication of the Women's Health Initiative (WHI) trials, since they showed that HRT significantly elevated a woman's risk of heart attack, stroke, and blood clots, as well as breast cancer.** This was two studies and an observational study that included over 160,000 subjects, which gave the WHI a lot of clout. Since then, there have been quite a few re-analyses of these trials and **one of the flaws of this trial was that women were given HRT after 10 or more years after menopause had started.** When you start HRT during perimenopause or close to the start of menopause, there is less risk. And many Functional Medicine doctors use bioidentical hormones, like Dr. Stocker and Dr. Carragher, which are believed to be safer, though large, randomized trials have yet to be done on bioidenticals and may never done. This may be because, while synthetic hormones can be patented, natural hormones cannot be patented. In 2012, the US Preventative Task Force concluded that the harmful effects of combined estrogen and synthetic progestins are likely to exceed the chronic disease prevention effects. On the other hand, a consensus expert opinion was published by the Endocrine Society stated that when taken during perimenopause or during the initial stage of menopause, hormonal therapy holds significantly less risk that previously published and reduces all-cause mortality. concluded that HRT are not worth that

I then introduced our guest speakers, Dr. Jill Stocker and Dr. Mike Carragher, who both specialize in Age Management Medicine and work together at The Body Well in Hollywood to help us sort out this dilemma about whether we should be prescribing hormone replacement therapy to our patients and how. I asked the first question, **"Do we really know if bioidentical hormones are safe and is it a good idea for a sixty year old woman to have the estrogen levels of a thirty year old?"** Dr. Stocker explained

that she had to live through this history of hormones and when she came out of residency and she had been telling women how great hormones were and this huge study came out showing that hormones were not so great for their health. Then she had to take these women off their hormones and this affected the quality of their lives and it made everyone question the healthcare system and these women did not feel very good. They were left with antidepressants for treating hot flashes and that led to a bunch of bad side effects, including weight gain, which then raises your risk of diabetes, high blood pressure, etc. But then we learned about the different arms of the Women's Health Initiative and what the real truth about it. And this study used equine estrogen rather than natural, human estrogen. Also, it is important that women start hormones closer to the beginning of menopause rather than waiting ten years like they did with many of the women in the WHI trial. **Dr. Stocker said in answer to my question, that yes, it is important to place women on hormones to give them their life back.** And as far as the safety, there actually are a lot of studies on bioidentical studies demonstrating their safety, though not as large as the WHI.

Dr. Carragher said that hormones get such a bad rap and women have been led to fear hormones by the media that they will increase their risk of breast cancer. He feels that if you use the right forms of hormones in women you will decrease their breast cancer and their endometrial cancer risk. Dr. Carragher stated that bioidentical progesterone is apoptotic to cancer cells and decreases breast and endometrial cancer risk. Even with Premarin, the conjugated equine estrogen, which was used in the WHI study, if it were the only form of estrogen available, Dr. Carragher said he would give it to his 78 year old mother because the benefits outweigh the risks. The reason that Premarin increases cardiovascular risk, according to Dr. Carragher, is because it activates matrix metalloproteinase, which is an enzyme that causes plaques to rupture, but this only occurs during the first year of use of women taking oral estrogen, whether it is estradiol or Premarin. But after this first year, there is a significant reduction of risk of cardiovascular disease in women. If you want to be on the safe side of this cardiovascular risk, then prescribe estrogen cream. On the other hand, Dr. Carragher does not believe that these women will get the protective effect that oral estrogen provides against CVD long term, but they will get many of the other benefits or estrogen. **Estrogen replacement builds bone in women and bisphosphonates don't do that. Estrogen activates a protein in the brain that stops the formation of Alzheimer's plaque. Placing a woman on estrogen replacement results in a 50% reduction of Alzheimer's Disease, according to Dr. Carragher.** [I looked to verify this and found that while some but not all studies showed a reduction in risk with estrogen alone, most studies using combine estrogen and progesterone did not show any benefit. https://www.ncbi.nlm.nih.gov/pmc/articles/PMC3058507/]

I then asked Dr. Carragher what is the most effective way to test for hormones? Is it better to do testing with serum, urine, saliva, blood spot, or dried urine? Dr. Carragher said that he likes serum testing because it is backed by the most research. I asked, isn't saliva better for monitoring women taking topical hormones? Dr. Carragher felt that saliva testing was not very accurate.

Dr. Stocker mentioned that we should not neglect the role of testosterone for women, which can really be a game-changer for women. Dr. Elkin then said that he often uses serum testing initially but then will use 24 hour urine for follow-up monitoring which also allows him to look at estrogen metabolism,

looking at the ratio of 2:4:16 hydroxyestrone levels to better assess breast cancer risk. He also said that he finds that even women taking a fair dosage of progesterone may show low levels on serum testing and he has not found saliva testing to be that accurate either.

Another doctor asked about the use of Estradiol vs Estriol and she said that in Canada and Europe they usually Estriol, based on the theory that Estriol is a weaker estrogen and is safer. Dr. Carragher doubts whether Estriol is really safer and says that there is not a lot of research on Estriol and most of the large European studies were done with Estradiol.

I asked if a woman comes into your office with symptoms indicative of estrogen deficiency, before going to hormones, do you use a regimen of diet, lifestyle, and supplements first? Dr. Stocker said that if a woman comes into her feeling lousy due to a lack of estrogen and she throws her a big regimen of nutrition and fitness, she might feel overwhelmed and she won't feel much better right away. Dr. Stocker prefers to start with hormones, so she can get her patient to start feeling better, and then work with her on diet and lifestyle changes, such as incorporating meditation and getting good sleep. She said that if the patient has inflammation in her gut due to poor diet, then she will have leaky gut and she won't absorb her vitamins or her hormones. I then asked about the patient who is in peri-menopause who does not want to do hormones, if Dr. Stocker has a protocol of supplements and lifestyle changes to help her? Dr. Stocker made it pretty clear that she feels that hormones are really the answer and she will attempt to calm the fears of the patient about the dangers of hormones, which are usually about cancer and about gaining weight. Dr. Stocker also said that if her patient does not want to be on estrogen, she can optimize levels of other hormones, such as thyroid. I asked what level of TSH does she feel warrants intervention and what tests does her ideal thyroid panel consist of? Dr. Carragher answered that he will order a TSH, a free T3 and a free T4 and based on that and her symptoms he will prescribe thyroid hormone. I asked if he measures thyroid antibodies (TPO, TGB) or Reverse T3 and he said usually not. Dr. Carragher said that he will often see patients who are on Synthroid and still have hypothyroid symptoms, such as low energy, weight gain, hair loss, depressed mood, which are symptoms that can be attributed to many other conditions. This is because T4, Synthroid, has to be converted to T3 and you may have a lack of the enzyme necessary to convert T4 to T3 or you may have receptor level resistance to T3, similar to insulin resistance, which requires higher levels of thyroid hormone and he said he does not worry about driving TSH levels extremely low. Dr. Stocker also mentioned that adrenal fatigue will result in reduced thyroid receptor sensitivity, which is why she recommends optimizing the adrenals. I asked how she likes to optimize the adrenals and she said she likes them to modify their lifestyle, including sleeping more, doing one less thing instead of one more thing, meditation, and then she will use hydrocortisone if needed. Dr. Elkin mentioned that he will also use hydrocortisone, since the adaptogens can take a long time to work, at a dosage of 10 mg in the morning and 5 mg dosage in the afternoon before 2 so that it doesn't interfere with sleep. I asked if someone has a cortisol curve where it is depressed in the morning and it goes up in the evening, will she use adaptogenic herbs? Dr. Stocker said that she has used ashwaganda and that it works well.

I asked that since there may be an increased risk of heart disease or of breast cancer with taking hormones, are there any particular ways you monitor your patients if there is any evidence of these

conditions or do you use any dietary regimen or particular supplements while on hormones to decrease risk, such as taking indole-3 carbinol or DIM to promote proper estrogen metabolism? Dr. Carragher said no, since there is no increased risk of breast cancer and heart risk is really only with oral estrogen in a high risk patient. If he has a patient who is a heavy smoker, for example, he will put her on estrogen cream. I then pointed out that even if hormones don't increase breast cancer risk, a woman is still at risk of breast cancer. Dr. Stocker said that the supplements that she uses to reduce cancer risk are high dose vitamin D and she has a target of 60-100 ng/mL as an ideal vitamin D level. She said that this can boost growth hormone and IGF levels. If a patient is very low, she will give them 50,000 IU per day for several weeks and then continue with 5000 IU per day. Dr. Carragher said that he usually recommends between 5000 and 10000 per day with vitamin K2. K2 reduces the potential for arterial calcification. The other thing Dr. Stockers said she recommends is a high dosage of turmeric or curcumin, which has been shown to reduce cancer risk, as well as reduces the risk of heart attack, stroke, reduces blood pressure, depression, etc.

One of the doctors mentioned that she was appalled to have spoken to women in their 20s and 30s who were put on testosterone, often in pellet form. Dr. Stocker said that the most recent studies show that the release of testosterone from pellets is not very consistent, so she doesn't use those any more. She mainly uses the testosterone cream, but if she puts a younger woman on testosterone who has young children, she will put her on injectible testosterone. Symptoms that Dr. Stocker will see that can indicate low testosterone include lack of energy, lack of muscle mass, lack of sex drive, reduced ability to have orgasm or reduced intensity of orgasm. Dr. Carragher answered that "I know you are concerned why would you prescribe testosterone in such a young woman?" He shared that concern, but if a woman needs testosterone to feel better, then she needs it. Testosterone levels have been dropping for several decades now and endocrine disruptors may be the causative factor.

A doctor in the audience asked a question about thyroid and what if there are problems with conversion of T4 to T3? **Dr. Carragher mentioned that he used to use Armour Thyroid, but since a large pharmaceutical manufacturer (Actavis) bought Armour manufacturer Forest Labs, many of his patients who were on Armour were no longer feeling as good, so he has switched them over to Naturethroid with better results or he will use compounded T4 with T3.** I asked if there are conversion problems, what about looking at nutrient status, such as looking at iodine, selenium, vitamin D, and zinc, and cleaning up the gut, all things that may enhance conversion. Dr. Carragher said that ideally all that should be done. But functional gut analysis is not just in his wheelhouse of what he does, so he will refer to a Functional Medicine doctor for this. He really focuses on the hormones. Dr. Stocker said that she has done micronutrient testing, esp. for patients who did not want to take thyroid hormone and they would get benefit from iodine, but she just does not do that in her practice now.

Dr. Stocker said that testosterone will often help with vaginal dryness and if it doesn't and women are still having painful intercourse, then she will recommend estradial to be used vaginally. She will balance this with progesterone. She said that the old thinking with progesterone is that it should be only given to a woman with a uterus and if you have had a hysterectomy, then you should not be given progesterone because it is given to protect the endometrial lining to reduce endometrial cancer. But Dr.

Stocker believes in giving progesterone to all women, since it is a hormone that would naturally be in your body if not for menopause, and it improves a woman's mood, decreases anxiety, improves sleep, it can help with hot flashes and night sweats, it can help with fibrocystic breast disease, and uterine fibroids. I asked if she cycles the progesterone, such as two weeks per month, and she said that she does not. Dr. Stocker said that women are meant to have all of these hormones and not just 14 days per month. She also said that she likes to use oral rather than topical progesterone. **Dr. Carragher said he starts most women on 100-200 mg of oral progesterone, but he may go up to 600 mg per day and he said it is virtually impossible to overdose on progesterone and it is mildly euphoric.** [getting high on progesterone!] He also said he likes to dose the estrogen in the morning and the progesterone at bed time. Dr. Stocker said that for women who are still having their periods, when they get that drop in their progesterone before they get their period during the PMS stage, she may will have them take a higher dose during that week of the month. Also for women who no longer have their cycle but still get phantom periods and get that time of the month when they get bloated and moody and she will prescribe a higher dosage of progesterone during that week of the month as well. Dr. Carragher also said that he prescribes progesterone to decrease risk of breast and ovarian cancer.

A practitioner asked what Dr. Carragher will do when he has a patient with elevated testosterone levels, such as with PCOS, and if he will use a nutritional approach with them. He said that these women have insulin resistance, which leads to increased aldosterone production and a decrease in Sex Hormone Binding Globulin, which leads to an increase in free testosterone. He recommends putting these women on Metformin, Progesterone, optimize their thyroid, and Spirolactone. Dr. Elkin mentioned that these women will benefit from a ketogenic diet. An acupuncturist in the room mentioned that berberine is comparable to Metformin. I mentioned that there are a series of nutrients, including cinnamon and chromium that can help to control blood sugar. Carragher said that he is in love with Metformin as an anti-ageing medication. Dr. Carragher said that oral estrogen is one of the few treatments that has been shown to reverse coronary plaque, along with testosterone and human growth hormone. He also mentioned that topical estrogen has been shown in studies to prevent and even reverse the progression of Alzheimer's Disease.

As knowledgeable as Dr. Carragher and Dr. Stocker are with hormones, some practitioners in the room were a little frustrated that there was not a lot of discussion of the nutritional approaches for these conditions, rather than just using medications and hormones. And many of us Functional Medicine practitioners would rather not using medications until dietary and lifestyle approaches have failed. But I am grateful that Dr. Carragher and Dr. Stocker shared their perspective and expertise on balancing female hormones. Dr. Stocker and Dr. Carragher can be reached at The Body Well in Hollywood, California at 323-874-9355 or http://thebodyw.wwwls8.a2hosted.com/ **See you August 24 for an interesting discussion of Male Hormones with the eclectic, Dr. Karlis Ullis.** He is incredibly well educated about male hormones and he will discuss some of the controversies about whether or not testosterone is associated with an increased risk of cardiovascular disease or an increased risk of prostate cancer. **After these two meetings you should know everything you could want to know about male and female hormones!**