

TODAY'S ROAD MAP TO TESTOSTERONE THERAPY

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Dr. Nikravan: Good morning, everyone. Welcome. Bambi approached me in the clinic and asked, "Do you mind talking to group regarding testosterone?" I said, "No; that's no problem; of course." I do a lot of speaking engagements, and I like it because I think it's fun. I always like educating. Let me tell you a little about my background. I am originally from Dallas, Texas. I did a lot of my training in different parts of the country and some parts of the world. Eventually I wound up in Southern California. I finished my Fellowship at UCLA.

One topic that is really not talked about a lot, and I want to bring to you, is male hormones. What are the roles of male hormones, and what do they really help us with; and how do they affect females; and how do they affect the inter-marriage relationships and the vitality of a couple together. It is very, very important.

Hypogonadism is a common problem. You know how women go through menopause? They lose their hormones; they don't have the ability to make enough estrogen; they have hot flashes; they get weak; they have a lack of energy; they just get moody because they have lost their hormone balance. And they have every right, because there is a big hormone imbalance. A very similar thing happens to men, but it is really not talked about; and it is really not focused on a lot. But it can happen in different age categories. Sometimes you can get it at age 40, 50 or 60. So, if I came into the clinic, and I was age 70 to 79 years of age, what percentage of patients would have this problem? I can tell you that up to 50 percent on average, men age 70 plus have this problem. So, one out of two patients who walk into my clinic have this problem. So, it is a very common problem. Let me tell you what the situation is. We're living healthier and better lives. We are not dying from heart disease as much; we're not dying from congestive heart failure as much; we're not dying from kidney problems. So we're keeping our patients alive much longer. But this is typically a disease of the elderly. As you get older you probably got this problem. But the issue now is this disease is not very well recognized,

because we're dealing with a lot of acute problems; like your doctor, we dealing with all the important problems that you can die from in 5 seconds. – being the heart, being the lungs. So, if you have no diseases, no one is going to ask you about it. Men, typically, are not very forward saying to their doctor, "Doctor, I just don't feel right." Women will tell you everything when they come to the clinic. So, men are of a different character. I'll tell you, as a physician who sees quite a few patients a day, men are very hard to give you their complaints. As physicians, I can tell you that when I was going through my training as a medicine resident, we're really not trained to ask these questions. So, you'll find that your doctors, your internists are typically going to do a very good job taking care of your acute problems; but they are going to do a poor job of asking these questions. I was one of them myself.

When I through specialty training I learned to ask questions differently. I learned to ask appropriate questions. If you don't tell your doctor about this, he is not going to ask it, unless he has been to one of our talks; unless there is a personal interest, or is a family member; unless he is very, very good and will ask these questions. The problem is that we just don't ask – we're so busy; we're so inundated with high-volume complicated cases that we don't ask about that little thing in the corner. But that little thing in the corner plays a huge role in how men feel. It plays a huge role in how women feel in that relationship; because I'll tell you why. Now, here's a challenge. Very few people get diagnosed. Less than 5 percent get diagnosed; and of the ones that get diagnosed some don't even get treated. You first have to identify it; then you have to diagnose it; and then you have to treat it. That's where the challenge comes in this case.

What are the common causes of hypogonadism? The common cause of hypogonadism is either men testes fail to produce testosterone – because testosterone comes from men's testes - or if men have a disease in the pituitary. The pituitary is a small gland the size of a little pea in the brain that secretes two very important hormones – a hormone called luteinizing hormone, and follicular stimulating hormone. You either have a disease upstairs in the brain that does not send the right signal to the testes, or the testes is not functioning, So you have to have a perfectly functioning brain signal, and you have to have a perfectly functioning factory – being your testes. They have to be working normally to get the right amount of testosterone. The common examples of Klinefelter's Syndrome: we diagnose testicular failure two ways; you either have a failing of the testes or at the brain. And this is the official diagnosis that goes through my head. This is an example: The headquarters of GM is in Detroit. The main factory is all over the country – there are many different factories, but mainly they are in Detroit. So if something happens to the headquarters of GM in Detroit, what do you think happens to the factories? The factories go down. What happens when the factories go down? The headquarters can't

do anything. They have to work on fixing the factory. So there are two communication centers. It is the same thing: The factory is down here, and the brain is right here. The communication signals have to be aligned. If anything happens to the factory, this won't work. If anything happens to the communication master center, this won't work. They have to be aligned. It is very, very important.

If you had trauma to your testes as a child; if you had mumps – any kind of infection to your testes, a trauma from an injury back in college to your factory, or if you are dealing with aging, you also can deal with this too. Cases of HIV have problems in both sides. But the biggest common thing that I want to focus on at this point is aging. It's a very, very important concept.

Testosterone is a very, very, very, very important hormone for men. If we did not have testosterone, we would not have gone into puberty. We wouldn't need to shave; we wouldn't develop muscle mass; we wouldn't buy nice cars and soup them up and race our friends; we wouldn't get into brawls and fights; and for sure we would not be able to give you a child. So, I am just listing the important things in life, and we wouldn't have an ego either.

Now, the most important thing testosterone does is:

1. Helps the skin to be moist. It helps the oil secretion of the skin to be very nice and moist. So you have to adequate amounts of testosterone for the skin to be nice and moist.

2. It helps the liver to make important hormones and proteins, so your body is filled with them, so they can carry different minerals, electrolytes, and different signals around the body for them to function. Without it we can't function. One very important hormone is albumen – a protein that binds the many different things in the body, many different hormones in the body – specifically calcium, and carries things around like a vehicle. We have to have it.

3. How about bone? They have done studies, and patients with very poor testosterone as a child wind up getting extensive osteoporosis. So it is very, very important. Men who have low testosterone wind up getting weaker bones – that's a big one. You don't want weaker bones, because when we get older, your balance and your gait become a little wobbly, because you need muscle mass, unless you focus hard on working on your core strength and your muscle activity. The most important thing – if you fall - and we all fall from time to time - and you fall on your head or a crucial part of your body, your risk of fracture goes up. You fracture your hip, your leg, and you have to go to the hospital. After that you have to have surgery, maybe get a clot in your leg which travels to your lung, and that's the end of us. So you don't want a fracture.

4. What about male sexual organs? When you were in your mother's womb in the first trimester of pregnancy, testosterone determines if you are going to be a male or female. You are going to know if you are going to be a male or female because of the chromosome aligning of the X and Y

chromosomes - how they come together. But you even know in the body if you have an adequate amount of testosterone what kind of genitalia will develop. During your third trimester of pregnancy, the size of testes and the size of the penis vary at that point. So, it is very important. That is why we say that women who are pregnant should be completely staying away from exposure to testosterone, because it would change their unborn child's characteristics of the genitalia. It is very important.

5. Brain. Testosterone has two very important functions. One is sexual function for men - getting good erections, good energy, good libido, having a desire to have a relationship. Next is mood. Men who have low testosterone have poor mood. Men who have low testosterone are more depressed. I believe this therapy is two-fold. You either get it for sexual function, or for a quality of life. It is very important.

6. The next most important thing is muscle mass. Men who have more testosterone have more muscle mass; men who have less testosterone have a lot less muscle mass and more fat mass. Why do you think body builders abuse testosterone? Because testosterone in high doses, leads to muscle mass. You can get buff like this – absolutely. They use grown hormone testosterone, but that's not what I want to tell you about. If you don't have adequate amounts, it will be very hard for you to gain muscle mass; it will be easy to gain fat mass – you get fatter and have less muscle. You get weaker and get more wobbly. These are things that happen as you get older with less testosterone.

7. What about kidneys? A lot of patients are walking around in the clinics with low border-line blood count, called anemia. Testosterone stimulates the bone marrow and the kidney to make red blood cells. So, if you are walking around diagnosed with anemia, and have never been checked for testosterone, have your doctor check for testosterone, because if your testosterone level is a bit low, you can get anemia. Anemia is the ability of red blood cells to carry oxygen in the body to the vital organs. The red blood cell is the vehicle that the oxygen sits on and travels all the way through the body and dumps off oxygen in all important organs. So, if you have less vehicle – red blood cells – you are going to have a lot less oxygen going to the vital organs. That's why patients are more tired. It is very important.

Again, what are the common causes of low testosterone? As we said: number one is aging. In aging you get a dual defect: You get a pituitary dysfunction at the command center and of the testes. Erectile dysfunction: Patients who have erectile dysfunction, if you study at least thirty to forty percent of them have low testosterone. So it is very, very important.

What about type 2 diabetes? Thirty to 35 percent of patients who have type 2 diabetes have this problem. So, if you have diabetes, it may not be a bad idea to have your doctor check for this.

As you get older the risk increases 20 percent based on the consensus of the World Health Organization. Twenty percent of patients with low testosterone are at the age of fifty. So if you are fifty, you have a 20 percent chance of having low testosterone. If you are 80 you have a 50 percent chance. So do the math – if you are 60, you have 30 percent chance. So it goes up as you get older.

Osteoporosis – if a male comes into the clinic with poor bone mass and osteoporosis, one of the differential diagnoses as a physician is to look at the testosterone count, to see what the testosterone level is.

You have a patient who is depressed, chronically depressed, just not feeling in the mood, not really liking it, not really enjoying anything, is on different types of depressant medicines and is not getting good benefit. We should check his testosterone levels to see what they are, if there is no other problem. If the testosterone is low it would not be a bad indication to treat that patient to see if their mood will improve. Again, the more weight material around your central abdominal, being obesity, the higher risk of low testosterone. The leaner you are, the better you are. The more weight you have, the less testosterone you will have - any patient that deals with a chronic disease, such as COPD, kidney disease, cancer, HIV, AIDS – any kind of chronic disease. Chronic diseases put so much stress on the pituitary; at the command center, they cut off the signal for you to make testosterone. It is very, very important. Alcohol abuse – if you drink alcohol moderately to severely it is a very bad thing. It will damage your testes mainly – it's a poison for testes.

How do you make the diagnosis? It is very, very straight forward. You go to a clinic. You tell your doctor about it. Your doctor is going to ask you to come back at 8 o'clock in the morning the next day, and he will give you a simple blood test. He will ask for a thing called Total Testosterone at 8 o'clock in the morning. Why 8 o'clock in the morning? It is not a fasting test. You guys remember getting up at 6 or 5 in the morning and had an erection – male erections in the morning? You had erections in the morning because your testosterone is at its highest level at about 6 to 8 in the morning. So I tell my patients to come into the clinic between 8 – no later than 10 for a testosterone check. If your testosterone level is less than 300, we're going to have some discussion. If your testosterone is between 300 and 350, we need to think about it. But if it is over 350 or 400, most likely you don't have this problem.

As physicians in the clinic, we deal with all kinds of problems. If I don't poke and probe and ask questions, this is going to walk right by because you guys are going to do a very poor job complaining to me – you're not going to complain much. The fact that you aren't going to complain about it, I'm not going to dig it out unless I go to you and say, "How is your sexual life?" "Well, it's good." Because the wife is right there – but the wife is like, "Tell him, tell him." Or, "It's okay. I'm

getting kind of old – no big deal.” When I ask, “How often do you have sexual intercourse?” he’ll say, “Oh, about once every six months, or once every two months.” That’s not healthy. A man who has sex less than once a month, that is not healthy. A healthy sexual relationship for a man even at any age is once every two weeks – that’s the least. Once a week – once every two weeks is healthy. But then that depends upon the partner, if they are ill or not. The best key I ask is this: “Can you obtain erection during sexual intercourse?” Then you go, “I don’t know. I think so. I don’t really have it. It’s been a long time.” But then I ask, “Why?” It is very important to ask a follow-up why question.

The next most important question I ask is, “If you come into the clinic, and you see a fine, attractive woman walk by, what does that make you feel?” “Oh, I don’t look at her.” I say, “I just want to know, because if a guy sees a female younger or older who is attractive, he should appreciate her beauty, and say, ‘wow, she is an attractive lady.’” And it should end right there. But if a guy says, “Aw, it’s not a big deal,” that’s a red flag. When men do not appreciate the beauty of a female, because of the way she is dressed, the way she fixes her hair, and really appreciate that, that’s a sign of lack of interest and low testosterone.

The three biggest clues that I have – as I said, I’m not really concerned about mainly only sexual function, which is very, very important in a relationship - if men have low testosterone, their mood becomes poor; their energy goes down; they sit on the couch; they don’t do anything; they don’t help around the house; they watch TV all day; they’re not excited – who do you think that affects? Their spouse. There is nothing worse than having a grumpy old man sitting on the couch, watching TV, not contributing to anything in the house. That makes for a life that is very miserable. This is how it affects women who have to live with him as his partner. It is not the fact that the guy is bad – it’s just the fact that he just doesn’t have the juice to do anything. So he gets up, does two things, and is totally pooped out by 11 o’clock; he takes a 4-hour nap, and gets up again; he eats and is all pooped out and goes back to bed again. That’s how it affects the female partner very importantly.

Again, a decrease in energy, decrease in mood, decrease in muscle mass, weakness. I have quite a few patients who live at Assisted Living, and they were diagnosed by us. We have treated them, and they go to the poker night games; they go to ball-night dancing; they are very, very happy; they are very excited; they come in with a testosterone level so low that I was really worried about other diseases. After I ruled them out; I treated them, and their quality of life has gotten better – they are no longer so wobbly. The testosterone level increases especially specifically the strength in the quadriceps, your hand grip. It is very, very important. If we improve a man’s function, then he becomes better function in society, there is less depression, there is better mood, there is more energy; and that’s why we look at these things like that.

If the testosterone level is less than 300, we may repeat that test again. After making sure there is not something else causing the testosterone to come down, we would place you on testosterone. I am simplifying this disease as much as I can to bring it out to you in a very simple manner. This disease is much more complex than I presented it to you, but I want to simplify it so it is easy.

Treatment: Once we treated it, the patients were so much better with it; and it is such a beautiful outcome, because everything changes – the dynamics of that patient changes for them. If you treat hypogonadism – low testosterone count – the diabetes should improve, energy should improve, depression should improve, anemia should improve; and that's a much happier patient.

The next most important question is: Does testosterone cause prostate cancer? Because we are dealing with an older population, prostate cancer is a disease of the elderly, the answer is no. Testosterone is a fuel for the prostate, and men that have low testosterone typically have low PSA levels. Just because your prostate is large, if you get testosterone you can make the prostate larger, but you won't cause prostate cancer. Just like if a woman had breast cancer, you are not going to give estrogen to them; but men who have prostate cancer we don't give testosterone to them. The consensus is we should not do it. That's a different discussion, if you want to do some studies on off label stuff. The most important thing I have to tell you is that testosterone can cause your prostate to get larger, because it's the fuel for the prostate. If all men live long enough, all of us will develop prostate cancer. Prostate cancer is a disease of elderly men who live long enough. All men get prostate cancer. If you look at the men who die of car accident, strokes and heart attacks, if you dissect the prostate, you will find that there are some abnormalities. All men will end up having prostate cancer eventually if they live long enough; but we just don't make it that far. Maybe about 100 years from now we will learn how to live longer; but if we live longer we will probably deal with having to take our prostates out way before that.

How do we apply therapy? Back in the old days the therapy we used was to give an injection. An injection was a very painful oil-based injection in the buttocks area. We used to allow for approximately 10-14 days, and then give another injection. Those days are over. The way we apply this therapy is a cream, lotion or jell. The gel preparations have been very, very beneficial to our patients, because it is very straight-forward. The majority of the market right now has a gel, a tube or a little pump that you apply on your shoulder and your arm. Let it dry and then put your shirt on. During the application process you wash your hand after you are finished with warm water. Let it dry between 2-6 hours, depending on which variation of gel you use. Then put your shirt on. During that time you are not going to get lovey-dovey with your wife or your children – grab, hug and kiss them – because you don't want to transfer the gel to them. Let's say you were just so excited that you want to have a

hug. Put on your shirt and then give them a hug. Why is that? Why do we want to use a gel because gels are more expensive than injection by far? Our testes make about 5-7 grams of testosterone per day. The gel preparations will deliver 5, 7 – 10 grams of testosterone per day. The injections we used to give many years ago, and some doctors still do, cause several problems. If you look right here, as soon as you give an injection, what happens? The testosterone count goes really high; then it comes really down. With the gel application, by day number 3 to day 5 of the application process, the levels of testosterone fall within normal range. When men get injections, and the testosterone counts go really high like a yoyo, like a roller coaster it goes really up. During the roller coaster effect, men wind up getting more moody, angry, more aggressive, tenderness in the breasts and chest, blood becomes thicker and causes some protein problems in the liver. You have to be careful what you use and how you use it. If you use the gel preparation, you don't deal with that very much at all, because you never spike, and you don't drop, as long as you apply it on a daily basis. You fall within normal limits. That's how it works; and we're so excited to be a part of this time and age of therapy because I tell my patients, you wake up, take a shower, dry yourself apply the gel, let it dry, shave, brush your teeth, fix your hair, put on your shirt and go about your own business. It is very easy to do. Some people like to do it at night before they go to bed. I say it's a little more challenging to do it in the morning, but we can always work whichever way the patient wants, and it works very effectively. The application is very straightforward – it is not an injection, it is not a pill; it is just a gel preparation.

We talked about osteoporosis. In a man with low testosterone, the bone is very, very thin. How many guys have been to the Golden Gate in San Francisco? If you look at the Golden Gate in San Francisco, you see two big red cables connecting this whole bridge up – suspension bridge. If you look at the two red cables on each side that are holding this bridge up, they are intertwined with many thousands of smaller cables, put together as one cable. So, same thing; these are architectures of many bones lined up in this direction, this direction, this direction, and every angle of bones put together right here. And that's the beauty of it. If you apply pressure on the top and on the bottom, you won't fracture. The more architecture of bone you have between the two, the stronger the structure will be. That's why the patient would say, "You know, I was doing great. Then I went in the garden; I bent over to grab something, and then I noticed that my back is bothering me a little bit. A couple of months later I'm losing height." These fractures are typically painless, unless you fracture close to a nerve. That's very important in how you fracture so easily, because this bone, instead of hard, becomes a little spongy and soft. So there is not much density, and you collapse that bone. That's very important for men to hear. I think I gave you perspective on Testosterone Replacement, why we do it, and why it's so important.

Questions and Answers:

A: Pain management is very important. Patients who deal with chronic pain typically almost 99 percent of the time have low testosterone, because pain leads to suppression of a special hypogonadal hormone called GNRH. That is a growth hormone releasing hormone. That suppresses the pituitary to put out LH and FSH, which is the central command center. So, any kind of pain or illness will suppress your ability to make testosterone. So, people who are on chronic pain medicines and opiates, typically always have low testosterone count. We treat those patients with testosterone, we address their pain; and as the pain management drugs come down, we take away the testosterone. In the interim, while they are on the pain management and they are in a lot of pain, we give them testosterone. As soon as the pain gets better, we slowly take away the testosterone, and allow their brain to recoup the signal. Just because you got on testosterone, you can easily come off of it. It is not something that you will use the rest of your life, just because you are on it now. But, if you don't make it at all because of a problem, then you have to be on it for the rest of your life. Do you really have to be on it? No, you don't really have to be on this therapy. But you see the benefits; so you just have to take the risks to get these benefits, which is better for you. Do you want to have these benefits? Then you should be screened for it. If you don't really care about those things I talked about today – because some men don't care about it – but if you try it, there is a good 88 to 90 percent chance that you will like it very much.

A: Activity is very, very important. It will help you become more physically active, because it gives you more energy. It's the difference between getting diesel engine and a super unleaded engine – big difference.

A: Libido: Libido is very important. It definitely helps your libido; helps your desire. Men who are on this complain that if their wife has cancer, she is not doing too well, she is sick, and I don't want to be on this therapy. When I ask why not, they will say it will make them want to have sex, and I don't like that. But I would be happy if my energy level was up. I don't think I could handle it because I can't trust myself. With that patient, you give him much more reduced dose in that case. There are many different ways you doctor can tailor this therapy to you, if you need it.

A: Antidepressants typically do not change testosterone levels. They help augment it. Depression can be from many things. It can be from physical stress, mental stress, acute illness, chronic illness, or low testosterone, or hormonal imbalance in the brain. That's why some of the antidepressant medicines work very strongly by altering the chemical metabolism. Depressed patients have a much lower level of the hormones.

Q: What can a man expect when he is 90+ years old?

A: If the man is 90 years old, he can expect every symptom that I told you about. Sometimes you do a testosterone count; so I would say there is at least a 50 percent chance that he will be low in testosterone. It is very straightforward to go to your doctor at the next visit and say, “I would like to know what my testosterone level is.” The doctor will say, “Okay, we can test it for you. Not a problem.” “Is there any complaint you have?” “No I just don’t have enough energy – I’m very weak.” Well, one reason is probably that you are 90 and have probably outlived your life by 10 years. But there is nothing wrong with that. If you have a healthy function, you have a good spirit – I totally encourage you to ask your doctor to do this for you; because things will change. You may get a boost in energy and feel different. There is nothing wrong with asking for this; and if you have any problems with this, just give us a call, and we will be happy to accommodate you.

A: We are always glad to answer any questions in the clinic. Sometimes we don’t ask the right questions, because our mind is thinking: is the congestive heart failure alright; is the diabetes under control; is your cholesterol under control; how is the circulation in your feet; what happens to your eyes and your diabetes; are your kidneys okay? We’re thinking of hard core stuff. So, unfortunately we don’t, but I, as a specialist, go okay, I’ve got all these things under control.

As you can see, I speak fast; I think fast too. As soon as I start speaking, I’ve already thought of 15 things. And that’s the beauty, I think at least with me, is that my mind is going at 80 miles an hour constantly. When I go on vacation, it takes me about 3 or 4 days before I turn off.

You have to ask, and I think it is a perfectly good question. Men just don’t complain about it, except men who are well-read, who are educated in the medical field, or some who have family members or a neighbor or friend. I’ll give you a case: A patient came to me who was 78 years of age. He is a very good guy – a patient of ours. I had seen him for his thyroid condition. He has thyroid cancer. He said, “I ride my bike with my neighbor; but I’m noticing that he is usually leaving me on the hills a lot more often. I don’t understand what is going on; he is stronger. When I asked him, he said, ‘I went to my endocrinologist in Florida, and he said my testosterone count may be low.’” So, he has been using testosterone for over 6 months. Now when he is with his friend on his bike, he is constantly leaving him on the rides any time they come to a hill. I told him, “It increases your quadriceps strength in your muscles and hamstrings.” That’s one of those guys who said, “I read about it – men’s strength and energy.

A: You have to go to your doctor and say, “Doc, I don’t feel enough energy. I was wondering if my testosterone count is low.” If he says there is no reason to check for it, say, “Did you know 50 percent of men age 80 have this problem, 20 percent of men at age 50 have it – I could be that 20 percent. Can you please check it?” If he still says no, then say, “I would like a second opinion.” I’m

not encouraging you to fight your doctor; become friends with your doctor. Become his friend, because it will take you much further, but just ask. It is a very simple inexpensive test. If it comes back low, it depends how low. If it comes back under 150, I start thinking of other problems. If it comes back between 150 and 300 I think of other problems. If it comes just below 300, I think of other problems. I have simplified this, so all I am asking you is to be aware of a problem.

A: There is really no good diet to raise testosterone count – like antioxidant, vitamins, minerals. Of course, these are all great for you. I think fresh fruits and vegetables, a diet high in fiber is the best thing to have in diets, rather than processed material. But one of the exercises that typically increase testosterone levels is body building. Resistance free and cardiovascular training, specifically resistance free really help improve the testosterone count. It sends a signal to the brain and testes that we need fuel for the muscles, so let's move on with it. That really helps, so that's one thing that can help improve the testosterone count. Typically it is the other way around, because when the testosterone count is low you will not have much energy and juice. When I say, "You should go and workout at the gym." They will say, "When I go workout at the gym for 15 minutes, I am so pooped out, I don't know what to do. I have no juice. I just can't finish my workouts." But I'm pretty blunt. I say, "Hey, how's this? How's that?" Sometimes they'll come in and say, "Oh, my sexual drive is good." And the wife will say, "No it's not. It's terrible. We haven't had sex in 3 months." And he will say, "Oh, we haven't?" Denial; denial is a very strong problem.

A: Yes, we have had wives who asked us to take him off testosterone, because there are cases that I've seen, and actually read literature on it, it may increase their aggression. Some men are very angry men most of their life. When they become hypogonadal they calm down a little bit, because they don't have enough juice. But then you put them back on testosterone they go back to where they were again, and they get very angry.

A: Your primary doctor in family practice, even anybody. You just have to ask for the test for total testosterone at 8 o'clock in the morning. And if that test is abnormal, I highly encourage you to seek an endocrinologist for a second opinion, because you want to make sure the levels are low enough before you start therapy. If you start therapy, then the things your doctor needs to monitor for the male is his PSA level, what does his prostate feel like – because you have to get a prostate exam – what does his blood count look like, and how are the rest of his parameters in his body. You can't just say, "Oh his levels are low – let's treat you." You have to make sure it is not something else that is causing it to be low.

A: Yes, we will know how to treat this – it's a gel. There are some who don't know it. The kind of doctors I work with do a great job talking to them, they feel very comfortable, the straight-forward

cases. They call me, we talk with them. We get a lot of referrals on this process. So once they make a diagnosis, they send them to me, because we have to follow up with them, examine them, examine the prostate, breast examination. There are a lot of things that go into the therapy and the initiation of the therapy. Remember, no therapy is without a risk. The risks are here, and the benefits are here. Now if the risks were here, and the benefits were doubtful, we would never offer that therapy; because it is not justifiable.

A: The more obese you are, the more likely you have developed hypogonadal. One thing we know is that men who are more obese have a thing called panus. What that means is an increase in fat and girth right around here. That increases heat in the groin area. Heat in the groin area causes the testes to actually get smaller, die faster, and get weaker. Why would we want to have testes outside of our body? Think about it - because the heat from the internal organ and the internal body will destroy the testes and kill it. That's why the testes in a sack are outside the body, because it is cooler.

A: It goes back to the fact of lack of exercise and activity. The obese you get, the more weight you get, the more circulation problems you'll have in diffuse parts of your body. The more heat you'll generate in that area, and that only goes to weight. So if you get your weight down, get your exercise and activity up, you should have a less chance of having this problem. So it all goes back to exercising and losing weight.

A: If you have a testicular tumor, you can have extra testosterone production. That carries a different diagnosis, and is a different discussion completely.

A: There is no case that the body is making too much testosterone, unless there is a testicular tumor. That's something you have to watch.

A: Testosterone - body builder's side effect: 1. In high doses men can develop men breasts and breast tissue can become painful. 2. The other side effect from it is that they shut off their ability to make their own testosterone. Of course, any replacement from the outside will shut off your own ability to make it, and it is possible to become infertile, so you can have a very difficult time fathering children. When you get testosterone from the outside, the testes that make testosterone shut off – even if they make a little bit, they shut off. The testes inside make testosterone, which augments and stimulates production of sperm count. So, men that use that stuff have a very low sperm count, their testes eventually will tend to shrink, the genitalia will become smaller over time. The other side effect is they wind up getting headaches; they start changing their metabolism of the liver with the proteins; the blood becomes very thick; and they increase their risk of stroke. Not with the testosterone replacement – no. If you get testosterone in high doses, you don't get brittle bones. You typically get brittle bones if you actually have low testosterone.

Q: How does a person who has been diagnosed as a diabetic, stop drinking soda?

A: That is a self-discipline issue. Diabetics should not be drinking regular soda. But, let me tell you the most recent thing that I have been working on on my own. There is a lot of literature that looks at patients and diet beverages. Diet beverages have a lot of artificial sweeteners which mimic a hypercolonic pituitary response, and give patients a false sense of hunger. If you stop drinking diet drinks you lose more weight, because they give you a false sense of hunger. The false sense of hunger messes with your brain. So what is your best drink? Pure water. This is actually 125 calories that I am drinking. The only reason I'm drinking this is because I haven't had breakfast yet, and I'm using this as sugar. Sugar is not your enemy, folks. Carbs are not your enemy. Men and women that come to my clinic and really try to use weight, they try to go on a low carb diet. I don't believe in diet alone.

Exercise is number one – diet is number two – not diet and exercise. Your body will burn everything in sight – specifically glucose. Your muscles, your brain, the central nervous system, your eyes, your kidneys all depend on sugar – simple sugar. I'm not saying you should get a Snickers bar or drink a Coca Cola, or drink this all the time; but if you don't have enough complex carbohydrates in your muscles, your muscle won't have any energy to go to the gym, to ride a bike. Last weekend I rode my bike on the PCH Highway up to 75 miles. I typically ride 110, but at 30 miles I felt dead. You know why? Because, the night before I didn't have an appropriate meal or an appropriate breakfast. I didn't have enough carbohydrates in my system. I told myself, "Sean, you are such an idiot. You know better than this. Why did you do this?" Because my ride was not was going to pick me up for another 30 miles, and I didn't have my phone with me; and I was too embarrassed to stop and call from a 7-11 or some gas station. So, it was a very tough ride for me. I was going 17 miles an hour for 30 miles, and I was beat when I got there. I said never again am I doing that again. So, if you want to get a good exercise, you have to eat healthy, you have to consume complex carbohydrates, which are very important for you, and exercise. Self discipline is the most important thing. Sodas will cause your blood sugar to go higher, gives you a false sense of sugar rush, which leads to insulin release.

Inappropriately insulin is an anabolic hormone and steroid that dabs all the energy into the body, allows energy to go within the cell. If you don't utilize it within 24 hours it turns into free fatty acid in the liver, and the free fatty acid in excess amount gets stored into fat. And that's how that works.

A: You really want to relieve pressure on the blood supply of the perineum – actually the area where the testes, the penis, and the prostate have their circulation. I could care less about the prostate in this case. The biggest problem you have to worry about is damaging the nerves, specifically the blood supply for the genitalia – being the penis and the testes. The biggest problem is your function is not going to come from the prostate. If you ride (a bicycle) hard, and there is a lot of trauma, or ride a

road bike for 3 or 4 hours straight, you put a lot of pressure here. I told a lot of riders, after 15 or 20 minutes you kind of ride up and kind of lean forward, shift around a little bit. Don't sit there like that forever. It is mainly blood supply circulation, nerve circulation to the genitalia. Those seats are helpful, but the problem is not necessarily every seat is right for you to be comfortable. So you can try and play with different seats. I totally agree with you. That's one reason I don't do much mountain biking. Mountain biking is a lot of action, but it can be very brutal on your body, because there is a constant pounding. Every time you have that constant pounding the nerves can get hit, and the blood supply gets hit. Sexual dysfunction in young men can be more affected by this.