

JUAN WILLIAMS, host:

This is TALK OF THE NATION. I'm Juan Williams.

Today a new prescription medication hits drugstores. It's a gel called AndroGel. It's easy to apply: just rub it on and increase the amount of testosterone in your body. Testosterone is produced naturally in both men and women, but its high level of production in males is responsible for male character traits, such as muscle mass, aggression and sex drive. As men age, however, testosterone production wanes. Middle-age men produce less than young men. And by the time a man hits 60, he has less than half the testosterone that he did when he was 20. An estimated 25 percent of men over 65 have low levels of testosterone.

At a time when baby boomers are fast approaching old age, the Food and Drug Administration's decision in February to approve the release of an easily applied testosterone therapy may be a boon to some men. Currently, between 150,000 and 200,000 men, almost all elderly, are being treated for low levels of testosterone. But until today, testosterone therapy required deep muscle injections every few weeks or wearing uncomfortable patches containing testosterone. But with this new, easy method, that requires just rubbing the gel on your upper arm, or rubbing it on your stomach, the number of men who may try testosterone therapy is predicted to jump as high as 5 million.

This could be as sensational as Viagra. For middle-aged men feeling depressed, experiencing low levels of energy, or lacking sex drive, testosterone may be the cure. And for men concerned with body image, increased levels of testosterone may allow them to go into the gym and build a more muscular physique. But there are dangers to increasing a person's testosterone level. It may promote higher levels of prostate enlargement and cancer. And it's not know if it can negatively affect the hearts of older men.

Despite those problems, could the advent of testosterone gel treatment allow testosterone therapy to become the male equivalent of hormone treatments for menopausal women? So would you take this new testosterone gel? Or is this modern medicine catering to foolish old men dreaming of their lost youth?

My guests this hour are George Plimpton. He wrote an article about testosterone gel titled "Just a Little Dab Will Do You" in the July, 2000, issue of Men's Journal. He's the co-founder of The Paris Review, a literary magazine.

Thanks for joining us, Mr. Plimpton.

Mr. GEORGE PLIMPTON (Author, "Just a Little Dab Will Do You;" Co-founder, Paris Review): My pleasure.

WILLIAMS: Also with me, Dr. Richard Spark. He is associate clinical professor of medicine at Harvard Medical School, and director of the Steroid Research Lab at Beth Israel Deaconess hospital. Dr. Spark is author of "Sexual Health for Men."

Welcome to the program, Dr. Spark.

Dr. RICHARD SPARK (Harvard Medical School; Director, Steroid Research Lab; Author, "Sexual Health for Men"): Welcome, Juan. Thank you very much, Juan.

WILLIAMS: If you want to join the conversation, our number here is 1 (800) 989-8255. That's 1 (800) 989-TALK.

Let me start with you, Dr. Spark. What does testosterone do for a man or a woman?

Dr. SPARK: Well, testosterone is, as you pointed out, the major hormone that is responsible for maintaining man's muscle mass, his bone density, and his sex drive. It also helps him maintain his red blood cell count. So it's a very, very important hormone. It is important to know that men who make testosterone do so actually from the time they are developing in the womb. There is a period of time when they start to make large amounts of testosterone in the womb, and then testosterone is immediately shut off and remains non-produced and at low levels during a man's preteen years. Then at adolescence, all of a sudden, there's a sudden surge in testosterone level that gives a young boy the transition from a youngster to a teen-age man. And this is a critical stage in the development of all normal individuals.

WILLIAMS: Well, women also produce testosterone.

Dr. SPARK: That's correct. Women produce testosterone in their ovaries. And they continue to produce small amounts of testosterone in their ovaries and do so until their menopause. Then when their ovaries stop making estrogen, they also stop making testosterone.

WILLIAMS: Now if your level of testosterone is not low, will this new gel be a boon to you? Could you rub it on and become more male?

Dr. SPARK: No. Actually that's gonna be a common misconception that's gonna be difficult to dispel. What happens is that the body is in balance; it's the most important thing we have to remember. If you take more of a hormone than the body requires, the body will then shut off its own production of hormone, so that if you have entirely normal hormone levels--specifically, testosterone levels--and you take more testosterone level, then your own testicle will stop producing testosterone.

So that the key note is that if you are at a stage where your testosterone level is normal and you take additional testosterone in the form of a gel, or a patch, or an injection, this will only temporarily raise your testosterone level, and then immediately the body

responds by shutting off your own testicles' testosterone production. So it turns out to be, in many men, a wash. On the other thing...

WILLIAMS: So it's not like taking a steroid.

Dr. SPARK: Well, it is a steroid, and--testosterone is a steroid, but we have to make a difference between doses. For example, the doses of steroids that are used to build muscle mass are much higher than you're gonna be able to get in the AndroGel. The AndroGel is designed to get a physiologic amount of testosterone, to normalize man's testosterone level. The amount that athletes take to boost their testosterone levels to increase their muscle mass, and to become weight lifters and bodybuilders, for example, is far in excess of the amount that you will get in the AndroGel package. It is about 15 times that amount.

Now what happens in men who are bodybuilders is very interesting. They build huge muscles, they have enormous musculature, but when you examine them, because the testosterone has shut off their own ability to produce testosterone, despite these huge muscles, they tend to have very tiny testicles and their sperm count tends to decrease. So that we have to distinguish between the physiologic amount of testosterone in the AndroGel, which is designed to give you a normal boost of testosterone into the normal range, as opposed to a superphysiologic dose, which is what athletes use to build the muscle mass.

They also have significant other side effects from this. In addition to shrinking of the testicles, they develop major problems because testosterone, when taken in large amounts, is converted to an estrogen and they develop breast enlargement. It is also converted to another hormone that predisposes them to develop acne. And they have--the weight lifters and the bodybuilders have developed an ingenious method of combating all the side effects by taking other medications to combat the estrogen impact of testosterone. They take Tamoxifen, or some other medication of that nature. And...

WILLIAMS: Well, let me ask Mr. Plimpton, who has tried this topical testosterone application--the gel--how it impacted him.

Mr. PLIMPTON: Well, I took it--it arrived in these enormous--well, to go back, Manis General(ph) asked me if I would become sort of a guinea pig and try this thing. And, of course, the first thing I did was to go to my doctor to see what my testosterone level was to see if it was really worth trying. And there's a blood test that you get. And a couple days later, they told me that my level was around 220, which is low. I think the average--and the doctor would help me on this--is around 400 or 450, something like that. The levels run from, I guess, zero to 1,000, or from 100 to 1,000, something like that. And mine was 200, which is low at my age, which is just over 70. I'm 73, actually. So the doctor said, 'Well, I don't see why--you're just the perfect guinea pig for this.'

And so the gel arrived. It arrived in these--not in these pouches. They'll come later. The pouches will look very much like what you squeeze ketchup out of. But what I got were

these huge syringe containers to squeeze the gel onto my palm, which I would then rub on a hairless part of the body--the belly or arms or whatever--chest--which I did. And you put on five grams of the stuff. It feels very smooth going on, like putting on any sort of a gel.

And it was interesting to me. There is a thing called the placebo effect, which means that no matter what the gel is, or what--the thing you take for insomnia could be soda water and a little bit of apple juice in there, and you take it and you think, wow, and in fact there's nothing there at all--the so-called placebo effect. And I must say that having put this stuff on--and you do it daily, in the morning--I did begin to feel a bit energized.

It so happened that I was going out to California to the Los Angeles Book Fair jackknifed into a tourist seat. And I got out there, and, of course, it's quite exhausting, that trip. And you arrive there with hours to spend--it's 3:00 in the morning there, and, of course, it's only noon--3:00 in the afternoon is only noon. And I found myself able to give two speeches at the book fair; I kept remembering things I hadn't thought of in years. I started a booth and sold copies of my literary magazine with great energy and éclat, and I kept thinking to myself, my Lord, this stuff really works.

And not only that, but the coincidence was that I was invited to Mr. Hefner's mansion that afternoon to watch the Lennox Lewis-Michael Grant prize fight. And he was having a disco party afterwards. The place was full of extraordinarily pretty girls. And I found my energy in that department increased by--I began to think, this is really quite a miracle thing going on.

Now I have no idea whether it was the gel. This is only three days after I started taking it, so I suspect that the placebo effect was indeed in order.

WILLIAMS: Well, the presence of pretty girls at Hugh Hefner's place might--that might be enough of an impact to pep you up, you know?

Mr. PLIMPTON: Well, they are, but not to the degree that I seemed to be pepped up that evening. I mean, I didn't go amok in there or anything like that. I just--I think that when one tries something that is supposed to improve one's nature in any way that you tend to feel that it's working. So I--and then, of course, as the weeks went on, I didn't think about it quite as much, but it did seem to me to have an effect in--and I found myself playing better tennis. Again, it may be because of the placebo effect.

WILLIAMS: Well, have you continued to take it?

Mr. PLIMPTON: What?

WILLIAMS: Have you continued to take it?

Mr. PLIMPTON: Well, I stopped it because I sort of ran out of all these syringes after a while. But then to my delight, another package arrived just the other day. And I think I'll-

-so I have a lapse there of about a month. Then I went back to my doctor to see what my testosterone level was, and it's now up around 450, which I think is normal for--What, Doctor?--a...

Dr. SPARK: Well, you're right, Mr. Plimpton, the normal testosterone range is about 300 to 1,000.

Mr. PLIMPTON: Three hundred to 1,000.

Dr. SPARK: So that in--with your use of the AndroGel, you were able to increase your testosterone from below normal into the normal range, but not above the normal range. And that's reassuring about this medication, letting us know that it's quite safe and it's not likely to cause any of the side effects that I described before.

WILLIAMS: Well, let's...

Mr. PLIMPTON: The other thing that was important in going to the doctor was that there are other tests that you should take, as I'm sure the doctor can explain better than I can, and one of them, of course, is to check to see what your PAC...

Dr. SPARK: The PSA, I think, you mean.

Mr. PLIMPTON: PSA. PSA level, yeah.

Dr. SPARK: Prostate specific antigen, yes.

Mr. PLIMPTON: And mine was very low. I think it was .04, something like that, which is very low, and, therefore, there was very little danger in my taking the gel.

WILLIAMS: Well, let me quickly ask, as we approach the break, did it affect your heartbeat in any way? Do you have any sense of enlargement of the prostate, or any more likelihood of stroke; anything you've noticed like that?

Mr. PLIMPTON: Well, I don't know how you get to know that your heart's going awry, or that a stroke is impending, but I certainly haven't felt anything along those lines.

WILLIAMS: Doctor, what should he be looking for?

Dr. SPARK: Well, I think he should be looking for the sort of response he got. Most men who take testosterone who start with a low level, generally feel better. So in Mr. Plimpton's case, he had a below-normal testosterone level, he took some testosterone and he started to feel better. This has been the general experience for most individuals who are like him, starting with a low testosterone level and then taking some additional testosterone to normalize their levels.

WILLIAMS: OK. We're gonna take a short break right now. You're listening to TALK OF THE NATION. I'm Juan Williams. When we return, we'll continue talking about testosterone replacement therapy. And we'll begin taking your calls at (800) 989-8255. You can also e-mail us at totn@npr.org.

SOUNDBITE OF MUSIC

WILLIAMS: At 21 minutes past the hour, it's TALK OF THE NATION from NPR News.

SOUNDBITE OF MUSIC

WILLIAMS: Welcome back to TALK OF THE NATION. I'm Juan Williams. Today we're talking about a new medication that you can find on drugstore shelves. It's a new form of testosterone that's absorbed directly through the skin in gel form. It's prescribed for men with low testosterone levels, but there is concern about possible misuse. My guests are George Plimpton. He wrote the article "Just a Little Dab Will Do You" in the July, 2000, issue of Men's Journal. He's co-founder of the Paris Review. And Dr. Richard Spark. He's professor of medicine at Harvard Medical School, and author of a new book called "Sexual Health for Men." If you want to join the conversation, please do. Our number is (800) 989-8255. That's (800) 989-TALK. Or e-mail us at totn@npr.org.

Mr. Plimpton, what about your mood? Did you have a better feeling about yourself and the world as a result of rubbing on this gel?

Mr. PLIMPTON: Well, my mood about the world is pretty good most of the time, so I don't know that--I don't know quite how I would gauge that. It does tend to make you feel a bit more edgy, I think; a bit more--yeah, on edge I guess would be the way to put it. I can't give an example, though. Well, I can give an example of that. I was sitting watching a television show that angered me for some reason or other, and I threw a sock at the television set. Now whether I would have thrown a sock or, even worse, a shoe, or something like that at the set if I'd not taken this gel, I just can't tell you. I think it's very hard to measure those things.

People around me don't think I've gotten particularly edgy. It's just my own perception. It may be because, there again, I've been told that it does tend to make you a little bit keener to the degree of edginess. Maybe the doctor would know that that was one of the things that does happen. I think I was told this. I don't know that it's so or not.

WILLIAMS: Dr. Spark?

Dr. SPARK: Well, actually Mr. Plimpton is pretty close to what goes on, but it can be a little bit exaggerated. What happens in men, even when they take large doses of testosterone, is they don't develop the rage and upset and edginess that people have anticipated. As a matter of fact, when I started in practice and started seeing men in my office who had problems of sexual dysfunction, my secretaries always knew what their

testosterone levels were because they would come into the office and first thing they would do, would push around the secretary and insist on getting to the phone and saying that they were very important; that they had to make a very important call to their office, and they were really quite obnoxious at the time. And these men at that time had low testosterone levels. As soon as we treated them and their testosterone levels normalized, they became pussycats.

So that there is a question of whether it's the deficiency in testosterone that makes men edgy and nervous and difficult to be with, or whether it's the excess of testosterone. And...

WILLIAMS: Boy, that's interesting to me. I thought that people with testosterone were more aggressive.

Dr. SPARK: Well, that's a common misconception. In one of the large studies that was done with massive doses of testosterone in California, they looked for this and they could not find the aggression that people had anticipated would occur. Now there's a natural tendency to look at somebody when they're obnoxious and they happen to be male, say 'Well, he's got too much testosterone around.' And, in reality, it may just be the opposite. Men sometimes tend to compensate for their low testosterone levels by being difficult and problems in interacting on a normal basis with other individuals.

WILLIAMS: Well...

Dr. SPARK: My secretaries, years ago, would know precisely what the testosterone level would be depending upon how the patient behaved in the office. And they also knew that as soon as we normalized their testosterone levels, they would become very, very nice and kind people, and very courteous and never be rude to them again.

WILLIAMS: One other quick question, Dr. Spark, what about fat? Does taking testosterone lower your body's percentage of fat?

Dr. SPARK: Yes, indeed, it does. What it--but testosterone--again, we're talking about two different doses. The doses you can get with AndroGel, or the doses that are in the patches, or the doses that are used for physiologic treatment do, in fact, cause an increase in lean body mass and a decrease in fat. We've shown this repeatedly. And there is no question about the fact that there is an increase in lean body mass and a decrease in fat. It's a very subtle change--increase in muscle mass and a decrease in fat mass, but it is there and it can be measured.

WILLIAMS: Let's go to Derrick in La Jolla, California. Derrick, you're on TALK OF THE NATION.

DERRICK (Caller): Hi, Juan. Thank you for taking my call.

WILLIAMS: Sure.

DERRICK: I subscribe to the views of Dr. Victor Boronko(ph), who's done research for 20 years near Berkeley at Lafayette--a little bit a ways from Berkeley--and what he's found is that men don't really have a sex drive and that we're mammals like all the other mammals. And, you know, nobody thinks that a male dog has a sex drive. Everybody understands that when a female dog goes into heat, a male gets interested and does what's appropriate. And we think it's the same way in humans and that women carry the sexual turn-on. And Mr. Plimpton was right, I think, when he said he went over to Hugh Hefner's house and found that he felt a little more vigorous with all those ladies around--those young women. I think he was right on there. And what he was doing was responding to their turn-on.

WILLIAMS: All right. Thanks for your call, Derrick.

Mr. Plimpton, in fact, did your sex life go up a notch?

Mr. PLIMPTON: Well, that's a fascinating idea that we just heard. I'd rather hear the doctor on that, but I don't--I'm not sure that--again, I think it's very hard to measure these things. I think that if I'd gone there on any other Tuesday and seen the number of pretty, young women that were there, I would have felt lust in my heart, as President Carter once said famously. I don't know how you measure those things. I think that--I suppose if I...

Dr. SPARK: There is some evidence on this. The first evidence linking testosterone to sexual function was a study that was done in roosters in 1849 by a Belgian cleric called Bertold(ph). And what he noted was that roosters chase chickens, but capons do not. Capons are roosters that have had their testicles removed. If he then took the testicles and put them back in the capons and made them roosters again, they chased chickens. So this established the concept there was something within the testicle that was responsible for the normal avian male sex drive. And in point of fact, this has been shown repeatedly, that without testosterone, men lose their sex drive.

The flip-side of this is the fact that in some men who were convicted of crimes for being sexual predators, one of the ways that they can avoid incarceration is to agree to a treatment that will lower their testosterone level. And when they lower their testosterone level, they lose their sex drive and stop preying on children and don't become sexual predators.

WILLIAMS: Let's go...

Dr. SPARK: So...

WILLIAMS: Let me go to Brenda in Grand Rapids. Brenda, you're on TALK OF THE NATION.

BRENDA (Caller): Hi. I was wondering if you can tell me what the testosterone woman should be--or testosterone level should be for a 28-year-old woman? What that normal level would be?

WILLIAMS: Dr. Spark?

Dr. SPARK: Well, the normal level is really something that should be measured as what's called the free testosterone level. And that's in the range of about three to 15 picograms per mil. You can measure a total testosterone level as well, and that's usually in the range of 20 to 90 nanograms per deciliter. And those are clearly lower than the range that we see in men. Certainly women with low testosterone values have problems with what's called hypoactive sexual desire, or HSD. Just around the corner is another product, a testosterone patch for women that's being developed by Procter & Gamble. And this is designed to treat specifically that problem, hypoactive sexual desire. The women wear the patch twice--two times a week and that seems to correct their problems with hypoactive...

WILLIAMS: What is the problem, Dr. Spark? You gave us the word there, but I'm not sure I know what it means.

Dr. SPARK: Oh, hypoactive sexual desire is a woman who is otherwise physically normal but has little or no interest in sex. She may be either a normal woman in a premenopausal state or a woman who is postmenopausal, and it is the lack of interest in sex that seems to be frequently associated with a low testosterone level. If that is the only factor causing the low testosterone in the women, then the women can take testosterone in patch form or there is a testosterone pill that is used in conjunction with estrogen that frequently is effective. I've got most of this described in my book in a chapter called The Testosterone Renaissance, which deals with the use of testosterone in men, women and in bodybuilders as well, so...

WILLIAMS: Well, let me ask Brenda: Brenda, why--you're 28, Brenda?

BRENDA: Actually, no, it's my sister. I'm 32, but...

WILLIAMS: Why are you worried about your sister?

BRENDA: Pardon me?

WILLIAMS: Why are you worried about your sister?

BRENDA: Because she has had a problem for the past couple years with no sex drive and was tested, and they gave her a number of 17 and, you know, didn't really say, 'OK. Well, this is what it's supposed to be.' They just said, 'Your testosterone level is 17.' And she's tried the patches and it's, you know, pretty much a nuisance, I guess, for her--the patch, you know, 'cause they said, 'Cut it in half and use it, like, three days,' and...

WILLIAMS: Well, did it work?

BRENDA: No. She said no. Well, I don't know that she tried it that long 'cause it got to be where, you know, after the second day she had to tape it on and it wouldn't stick on

and it was falling off. And then, you know, I heard that your program was coming on and I thought, `Well, that might be something'--you know, maybe that cream would work for her, or the AndroGel.

WILLIAMS: Well, we're...

Dr. SPARK: Well, Brenda...

WILLIAMS: ...always here as a public service, Brenda. Thank you for calling.

Dr. SPARK: Well, Brenda, you should know that the gel, the AndroGel, is not prescribed for women.

BRENDA: OK.

Dr. SPARK: Rather, there is going to be a new lower-dose testosterone patch that will be easier to adhere to the skin and may be appropriate for your sister or other women with similar problems.

BRENDA: OK.

Dr. SPARK: That product's in development right now.

BRENDA: Well, that's good to hear for her.

WILLIAMS: Thanks for your call, Brenda.

BRENDA: Thank you.

WILLIAMS: Let's go to Diana in Portland, Oregon. Diana, you're on TALK OF THE NATION.

DIANA (Caller): Hi. Thanks, Juan. It's really good to be on the show.

WILLIAMS: Sure.

DIANA: Well, I wanted to--there's several things that I thought, like, actually contribute to one of the problems and it's really interesting to hear them on your show. And sort of your intro portrayed testosterone as being linked to aggression and some other behaviors, and then I noticed that you were learning about that on the program.

WILLIAMS: Absolutely.

DIANA: And I think that it's really interesting that we continue to do that in the media when, in fact, there's a lot of good research that says, you know, a certain minimum level of testosterone is necessary for certain processes to happen in the body. And, you know,

if you can't make a sexual process happen, if you can't get an erection or if you can't have an orgasm, then sex will naturally be less interesting to you. But it doesn't--we haven't been able to correlate testosterone levels with aggression per se, only to say that a certain minimum level of testosterone is necessary for aggression to be present at all.

WILLIAMS: So your point is: After you reach that minimum level of testosterone, you don't get any added advantage by additional testosterone.

DIANA: Well, there's certainly no--once you reach that minimum level, there's certainly no evidence of any change in behavior. And I think the point I'm trying to make is that although it's necessary for you to have a voluntary nervous system to move your arm to get yourself, you know, a glass of ginger ale, it's not the voluntary nervous system that makes you want ginger ale or that makes you grab the glass.

WILLIAMS: Got it.

DIANA: And, you know, even this program, to a certain extent, and particularly where there's, you know, commentary of a heterosexual nature, that women carry some sort of desire, something that automatically bonds to a male and then produces a reaction, rather than, you know, a person that's attracted to somebody else has their own internal reaction that they get to own and have responsibility for. I see that in your show and I think it kind of increases the very kind of worrisome desire for testosterone when it's not needed that you're talking about trying to prevent.

WILLIAMS: Hang on. Say that slowly. Were you talking about the caller who said that he thinks that it's when women are ready or around that men get aroused, that kind of thing?

DIANA: Certainly. And--when he was saying that, he was saying that, you know, all men are heterosexual and that men's sex drive is, you know, only possible to exist in the presence of a pretty woman or at least a picture of one.

WILLIAMS: As opposed to a woman that you have a warm relationship with.

DIANA: Or as opposed to, like, just walking down the street and saying, 'God, you know, I feel sexual today.'

WILLIAMS: Oh, you mean without regard to whoever you're with, it's just that you feel that way.

DIANA: Exactly. And I think one of the problems is not, you know, owning up to our own sexual desires and saying, 'This is my desire,' and I might have needed testosterone in order to have a certain minimum level so that I could have this sexual desire in my body, but I still get to have sexual desire or not. And if I'm worried about what's going on at the office, I'm gonna be distracted and I'm not gonna have sexual desire, and it doesn't have anything to do with my testosterone level.

WILLIAMS: All right. Diana, thanks for your call.

DIANA: Sure.

WILLIAMS: Let me just...

Dr. SPARK: Can I make a comment here?

WILLIAMS: Just a moment, Doctor. Let me remind everyone who's tuned in that they're listening to TALK OF THE NATION from NPR News.

Dr. Spark, you wanted to say something.

Dr. SPARK: Yes. I'd like to make--there's a comment in Beaumarchais' "Marriage of Figaro" which he points out the fact that man is different from animals because they can make love in any season. Unlike animals, which make love at times, as the analogy was given, when the female was in heat, men have the capability of making love in any season. So this is one of the distinctions that we point out in our book and point out that this is something that cannot be translated from animal experiments over into human experiments.

WILLIAMS: All right. Let's go to Lane(ph) in Frankfurt, Germany. Lane, you're on TALK OF THE NATION.

LANE (Caller): Yes. Hello. Good evening, Juan. I just had a question. Normally I don't call your program, but being a Christian and knowing the Bible, you know, it was really fascinating to hear these kinds of subjects. Because luckily, I have a normal sex drive with my wife, but I know that Jesus Christ--before I ask my question, I just want to make a quick little point. Jesus Christ once said--he said we're to drink his blood. In another part of the Bible, it says the fruit of the spirit is love and joy and peace and all these things. And so we're supposed to live by these things that were in his blood. But, you know, the more science learns, the more it relates with me to the Bible.

But I just had a question, because I know of sexuality. When I was a little kid, when I was growing up, I had a--you know, it's strange when you go through puberty. But is there a correlation between, like, sexual thoughts, homosexuality or anything like that and the level of testosterone or something in our bodies? Does that mean all homosexuals or something--do they have less testosterone or something like that?

WILLIAMS: Dr. Spark.

Dr. SPARK: No, that is not true. Homosexuals have the same level of testosterone that other men do and their sexual desires are not really reflected by the amount of testosterone that they have. So they have fully normal testosterone levels. The objects of their affections happen to be same-sex objects rather than other-sex objects.

WILLIAMS: All right. Let's go to Martin in Charlotte, North Carolina. Martin, you're on TALK OF THE NATION.

MARTIN (Caller): Hi, there. I am a senior citizen, which means I have a lower level. But when I was 44, I had a vasectomy and I was wondering how that enters the equation.

WILLIAMS: In other words, does a vasectomy contribute to a loss of testosterone?

MARTIN: No. I would--yeah, definitely. I guess that's right, yeah.

WILLIAMS: All right. Let's see what Dr. Spark has to say.

Dr. SPARK: No. Well, that's a good question. The vasectomy is designed to prevent sperm from passing from the testicles during an ejaculation and it's just a means of contraception for a male. It does not affect the testosterone production because sperm is produced in different areas of the testicle than testosterone. Testosterone, as we point out in our book, is produced in cells called lytic cells, whereas sperm is produced in cells called Sertoli cells. And the vasectomy merely blocks the passage of sperm from the testicle into the ejaculate, and it should not affect a man's level of testosterone.

WILLIAMS: We're gonna take a short break right now. You're listening to TALK OF THE NATION. I'm Juan Williams. My guests this hour are George Plimpton and Dr. Richard Spark. When we return, we'll continue talking about a new testosterone rub-on gel and we'll take more of your calls at (800) 989-8255. If you'd like to join the discussion online, please do. You can go to our Web site at www.npr.org. Click on the 'your turn' section, then scroll down to TALK OF THE NATION.

At 40 minutes past the hour, it's TALK OF THE NATION from NPR News.

ANNOUNCEMENTS

WILLIAMS: Welcome back to TALK OF THE NATION. I'm Juan Williams.

Tune in at this time tomorrow for a look at kids who follow in their father's footsteps by working in the same profession. Celebrating and honoring America's fathers in advance of Father's Day. That's tomorrow at this time.

Today we're talking about a new testosterone therapy called AndroGel and its potential uses. My guests are Dr. Richard Spark, professor of medicine at Harvard Medical School. He's the author of "Sexual Health for Men." And George Plimpton. He wrote the article Just a Little Dab Will Do You in the July 2000 issue of Men's Journal. He's the co-founder of The Paris Review.

If you want to join our conversation, please call us at (800) 989-8255. That's (800) 989-TALK.

Mr. Plimpton, I just wanted to ask quickly about whether or not the AndroGel affected your ability to pay attention. I noted that Andrew Sullivan wrote in a piece in The New York Times Magazine that after he took an injection, as opposed to the gel, there was a period of time where he couldn't really concentrate.

Mr. PLIMPTON: No, I've not run across that so far. That's interesting. No, it didn't happen to me. There was one question I did want to ask that I was warned about and wanted to ask the doctor about. I was told that if you apply the gel and you go out on a date, a very heavy date, you should make sure in lovemaking that you either wear a T-shirt or take a shower so that you wash the gel off, because any application of gel to a woman's body can cause a reaction in the most extreme form--well, masculinization, growth of hair out of the forehead, all sorts of things--and I wondered if this warning was--if there was anything to this warning.

Dr. SPARK: The--it's a good question and it's an important point. The testosterone gel, when applied to the skin, is something that can be transmitted across other skin if it's in immediate proximity right away--and the key is right away--so that if you put on the gel now and then decide to make love right away, there's a chance that you will be transmitting this to your partner and her testosterone level will become higher. However, in studies that have been done so far, this seems to be an effect that lasts only for about six hours. So as I understand it, the recommendation is to put on the gel, let us say, in the morning and plan lovemaking for later on in the evening, and then you should have no problem whatsoever with it.

WILLIAMS: Well, what I read--I read here that, in fact, if it was rubbed against a woman who was pregnant, it could cause damage to the fetus. Is that right?

Dr. SPARK: That is a concern, but I don't think--that's a theoretical concern, but I don't think that's actually been studied because there is no way that anybody's gonna do a study where they're gonna rub testosterone on a pregnant woman's abdomen and then see what the fetus is like. I don't think that's a sort of study that would be considered ethical. It's a...

Mr. PLIMPTON: There's a famous myth that at the sixth week of gestation you can rub testosterone on a woman and the result will be a boy rather than a girl. There's no truth in that, is there?

Dr. SPARK: No. That's a wonderful myth, but there's no truth in that. That's one of those marvelous stories that really does not bear fruit.

WILLIAMS: All right. I have some quick questions for the two of you that came over the e-mail for George Plimpton. It says here, from Richard Madison in Pendleton, Oregon, 'Now that you're feeling spry, is there any chance you're gonna go out for the Lions this winter?'

Mr. PLIMPTON: Well, I'd have to have many more massive doses of this stuff to think of doing that, I'm afraid.

WILLIAMS: Oh, so you don't want to hit anything as a result of taking this testosterone gel.

And for you, Doctor, 'What is the source of the testosterone gel? Is it artificial? Does it come from cadavers? Where does it come from?' The question's from Robert Ashly Martin of San Mateo, California.

Dr. SPARK: No. Testosterone is a naturally available chemical, and the innovation with the AndroGel is taking the chemical and imbedding it in a gel that can be then transmitted across the skin. Prior to this, the testosterone--there are at least six or seven testosterone products on the market right now. And prior to this, the way we would get testosterone across the skin was to use a testosterone patch. There are three of those on the market right now. We do not use or recommend testosterone pills, because when testosterone is linked up with a medication to make it effective when you take it orally, it has potentially serious liver damage and there are occasionally problems with either blood-filled cysts in the liver or, in a few cases, liver cancer that are coming from men who take testosterone pills. So...

WILLIAMS: Well, here's a quick question from Kirk Drones(ph). He asks: 'Is a prescription necessary to get this medication?'

Dr. SPARK: It's a good point. Absolutely, a prescription is necessary. Even though this is on pharmacists' shelves, it's not in the front of the pharmacy. You cannot walk in and just pick up an AndroGel. This is a controlled substance, so that when doctors prescribe this, they have to put on their prescription the same number--it's called the DEA number, Drug Enforcement Administration number--that they use to prescribe narcotics. So that this is not a medication that you can just walk into a drugstore and pick out. You must go to a physician, ideally get a blood testosterone level, and if your testosterone level is low, then you would be a candidate for AndroGel.

WILLIAMS: All right. Let's go to Sean(ph) in Tallahassee, Florida. Sean, you're on TALK OF THE NATION. Sean, are you there?

SEAN (Caller): Yes, I'm here. Hello.

WILLIAMS: Hi.

SEAN: Hi. How's it going?

WILLIAMS: Great.

SEAN: I have kind of a question, and then I have a comment as well.

WILLIAMS: OK.

SEAN: My question is this: You say that if testosterone is given to a male, then what happens is that the body shuts off its own natural testosterone production. If that's so, does that mean then that if a woman has testosterone in her body, do we also make estrogen? Do we--would we take estrogen to increase our testosterone then, our own natural production of it? Do you understand what I'm saying?

WILLIAMS: Yeah, I think so. Dr. Spark.

Dr. SPARK: Well, I understand what you're saying, but you've got the physiology a little twisted.

SEAN: OK.

Dr. SPARK: What happens is that the testicle makes testosterone only on a stimulus from a hormone in the pituitary called LH.

SEAN: OK.

Dr. SPARK: If you raise the testosterone level high enough, you will lower the LH level. That eliminates the stimulus to the testicle so no testosterone is produced from the testicle when you are taking testosterone in large doses.

SEAN: OK.

Dr. SPARK: And we know this from athletes. For example, when you hear that somebody has tested positive for steroids, testosterone or one of its close relatives is the steroid they're talking about, and doctors can now distinguish between a man's own testosterone and taking--the testosterone he's been taking illegally by doing a test on the urine called the testosterone-epitestosterone ratio.

SEAN: Mm-hmm.

Dr. SPARK: That's also described in the chapter on The Testosterone Renaissance in my book.

WILLIAMS: Hey, Sean, how old are you?

SEAN: I'm 33.

WILLIAMS: So why are you interested in this?

SEAN: I'm not. I'm just interested in--I'm about ready to go back to nursing school and I'm just interested in the whole production of it. And it just seems odd that you would

take the testosterone and our body shuts down rather than just using it, just having extra. It's amazing how the physiology of the body works.

WILLIAMS: It really is. Thanks for your call, Sean.

Dr. SPARK: It's really the marvelous aspect of the body, that it's always in balance and it strives a balance, and it gets very, very disrupted when it's out of balance.

WILLIAMS: Let's to go to Mike in Orange County, California. Mike, you're on TALK OF THE NATION.

MIKE (Caller): Yeah. Thank you for taking the call. It's a question for the--Dr. Spark. For men who have been unfortunate enough to have testicular cancer and then have testicular cancer again and rely on interim muscular injections which are painful often and don't really distribute testosterone necessarily that well, will this gel act as a substitute or a supplement?

Dr. SPARK: Well, this gel should take the place of the testosterone injections in a situation where a man has lost both of his testicles to testosterone cancer--I'm sorry, to testicular cancer.

MIKE: Testicular.

Dr. SPARK: In the treatment of testicular cancer, frequently they will remove one and occasionally both testicles. And when this happens, they will have to rely on testosterone replacement therapy, either in the form of injections or patches. Now...

MIKE: It--I mean, yeah. I have personal experience with this, unfortunately. But patches are not very helpful...

Dr. SPARK: OK.

MIKE: ...for a lot of people. Injections--I have--my experience with other people that I've talked to, the patches don't seem to work that well. You need so many patches in so many different places and you can't put them in the same place all the time. Can the gel be applied in the same place over and over again?

Dr. SPARK: The gel can be applied in the same place over and over again. It is applied to the arms or the abdomen, usually rubbed on the skin, and it allows for the testosterone levels to normalize. So...

MIKE: OK. Well, thank you very much.

Dr. SPARK: ...when this is on the market, you should check with your own doctor and see if he'd want to prescribe it for you.

WILLIAMS: Mike, thanks for your call.

Mr. Plimpton, did you develop a rash from where you were rubbing it on?

Mr. PLIMPTON: No, no, no rash. No, no. Nothing happened to the skin that I can think of or--I just cannot think of any adverse effects from putting on the gel.

WILLIAMS: All right. Let's go to Jim in Oklahoma City. Jim, you're on TALK OF THE NATION.

JIM (Caller): OK. Well, maybe Mr. Plimpton just answered one of my questions. I had two. One is: Does it cause sleep deprivation? And the other is: What is the impact of this taken with Viagra?

Mr. PLIMPTON: Well, you take the--usually you put the gel on in the morning, so it doesn't affect sleep as far as I can tell. It doesn't make one sleepy, for sure. The Viagra question--I've been taking both of them. I don't see that it--I don't see any difference there. I mean, the Viagra is what makes the difference, it seems to me, when you take that. And I don't know that it is supplemented or increased by the fact that you're taking the gel.

WILLIAMS: Dr. Spark, before you answer...

Dr. SPARK: Mm-hmm.

WILLIAMS: ...let me remind everyone who's tuned in that they're listening to TALK OF THE NATION from NPR News.

Go right ahead, Dr. Spark.

Dr. SPARK: The testosterone and Viagra work in two different ways. Testosterone works to stimulate a man's libido and also enhances the level of the chemicals within a man's penis that allow him to have an erection. The Viagra works only at the level of the penis and does not increase sexual desire. The Viagra just is a facilitator, enabling a man to have an erection when he wants to have an erection. He usually takes a Viagra tablet about an hour before he plans to have sex. That doesn't give him an erection. He has to engage in normal sexual foreplay and that usually stimulates a normal erection, and that's why Viagra has been so successful and so effective.

WILLIAMS: So you could take the two in combination. You could take the AndroGel and the Viagra?

Dr. SPARK: If you have a low testosterone level and the low testosterone level has been treated with the AndroGel and your testosterone normalizes and your sexual function is still not good, then Viagra may be an adequate medication to take in addition to the AndroGel.

WILLIAMS: All right. Let's go to Jim in Salem, Oregon. Jim, you're on TALK OF THE NATION.

JIM (Caller): Yeah. I have a question that hasn't even been answered or anything. Thanks for my call. You said that there's over 150,000 people with--in the United States without--you know, with low testosterone. What happens--I mean, what difference does it make whether you have low--is it detrimental to your health or what?

Dr. SPARK: Well, low testosterone levels cause a variety of different problems. In addition to decreasing muscle mass and decreasing sexual drive, which we've talked about, it also decreases the content of calcium in your bones. So people--men who have low testosterone levels are prone to osteoporosis, very much the same way as women with low testosterone level--with low estrogen levels are prone to osteoporosis. Both sex hormones help stabilize the amount of calcium in the bones.

WILLIAMS: Let me just say, Doctor, I don't want anyone to walk away from this show thinking, 'Gosh, I got to go get it.' I mean, there are cautions out there. People are worried about the affect on the heart. They're worried about possible stroke. They're worried about its effect on the prostate, both in terms of enlargement and cancer. What are the cautions that you would give anyone before telling the, 'Go try AndroGel'?

Dr. SPARK: Well, what we use--whenever we give any testosterone product, we evaluate a patient, find out, one, why the testosterone is low--and there are a variety of different reasons why it may be low--and then we treat them with the AndroGel only after we've established that their PSA, their prostate specific antigen, is in the normal range. Men with metastatic prostate cancer, for example, should not take AndroGel. Men with high red blood count should not take AndroGel. Men with a condition known as sleep apnea probably also should be in the category of those who don't take AndroGel. And the...

WILLIAMS: AndroGel. George Plimpton, let me quickly ask: Should a guy take some AndroGel before he goes to visit Hugh Hefner's mansion?

Mr. PLIMPTON: Sorry? Say that again?

WILLIAMS: Should a guy take some AndroGel before he goes to visit Hugh Hefner's mansion?

Mr. PLIMPTON: Well, I don't think so. I think the thought is enough to raise all the proper levels.

WILLIAMS: Thank you so much, Mr. Plimpton.

That's all the time we have for today. I'd like to thank all of you who called this hour, and especially my guests: Dr. Richard Spark, associate clinical professor of medicine at Harvard Medical School. He's the director of the steroid research lab at Beth Israel

Deaconess Hospital and the author of "Sexual Health for Men." He joined us from member station WBUR in Boston. Thank you very much, Doctor.

Dr. SPARK: Thank you.

WILLIAMS: And George Plimpton. He wrote the article Just a Little Dab Will Do You in the July 2000 issue of Men's Journal. He's the co-founder of The Paris Review. He spoke to us from New York. Thank you very much, Mr. Plimpton.

Mr. PLIMPTON: You're very welcome.

WILLIAMS: In Washington, I'm Juan Williams, NPR News.