Doctor Explains Peptide SIDE EFFECTS You Need to Know Transcript

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Why Peptide Side Effects Matter

Almost every Almost every peptide video you peptide video you watch, including watch, including many of mine, is many of mine, is dedicated to what dedicated to what these compounds can these compounds can do for you. But do for you. But today we will do the today we will do the opposite.

opposite. opposite. Injectable peptides are medications, and are medications, and whether whether whether you get them from a you get them from a doctor or from a website that doctor or from a website that sells them for sells them for research purposes only, they research purposes only, they can cause can cause side effects. And side effects. And some of them go some of them go far beyond the far beyond the painful area from the painful area from the injection. The good news injection. The good news is that is that most side most side effects of peptides are effects of peptides are predictable. Each predictable. Each peptide gives your peptide gives your body a specific set of body a specific set of instructions, and side instructions, and side effects usually effects usually occur when those occur when those instructions instructions instructions are followed too are followed too intensely. Once you intensely. Once you know what exactly know what exactly the peptide is telling the peptide is telling your body to do, your body to do, you can divide you can divide your feelings into two your feelings into two categories. Those nuances categories. Those nuances that you can that you can control or control or expect, and the expect, and the signals that indicate that you signals that indicate that you need to need to stop and stop and call call call a doctor immediately. I hope a doctor immediately. I hope by the end of this video by the end of this video you will understand you will understand what is what. Welcome back what is what. Welcome back to the Dr. Greg Jones Optimization Academy podcast. I am Dr. Greg Jones, a naturopath and, a naturopath and founder of Innovative Wellness founder of Innovative Wellness Center in Phoenix, Center in Phoenix, Arizona. My goal on Arizona. My goal on this channel is to dissect dissect dissect research and research and information about information about hormones, peptides, and hormones, peptides, and longevity medicine longevity medicine so that you can make so that you can make better decisions about better decisions about your own health your own health together with your together with your doctor. So doctor. So today's video is today's video is entirely dedicated to entirely dedicated to side effects. I side effects. I group the peptides I will talk about today by the will talk about today by the principle of their action principle of their action in the body or the in the body or the systems systems systems they affect.

they affect. Because peptides that Because peptides that act in the same way or act in the same way or belong to the same belong to the same categories categories categories usually cause a usually cause a similar set of problems.

similar set of problems. Today we'll start with Today we'll start with two growth two growth hormone releasing peptides hormone releasing peptides, move on to, move on to two two two brain health peptides, brain health peptides, look at look at recovery and recovery and immunity peptides, immunity peptides, GLP-1 weight loss peptides, and GLP-1 weight loss peptides, and finish with reactions finish with reactions that occur due to the that occur due to the contents of the vial, not the contents of the vial, not the peptide itself.

peptide itself. Before we Before we begin, please note: begin, please note: this is educational this is educational content, not medical content, not medical advice, and some of what advice, and some of what you you you will hear today is based on will hear today is based on my own my own clinical experience.

clinical experience.

Growth Hormone Peptide Side Effects

So consult So consult your doctor before your doctor before changing anything. changing anything. Now let's start with Now let's start with some growth some growth hormone releasing peptides hormone releasing peptides. I've already. I've already explained the explained the differences between Sermorelin, differences between Sermorelin,

CJC-1295, and Tesamorelin in CJC-1295, and Tesamorelin in separate videos, so separate videos, so let's move on to what let's move on to what they have in common.

they have in common. All three of these peptides All three of these peptides increase increase increase growth hormone levels, and growth hormone levels, and growth hormone growth hormone increases IGF-1 levels.

increases IGF-1 levels. And there's another peptide that And there's another peptide that I talked about called IGF-1 LR3, called IGF-1 LR3, which transmits this which transmits this IGF-1 signal IGF-1 signal directly. This directly. This common pathway also common pathway also explains why explains why most of the problems most of the problems that can arise are that can arise are similar for some of similar for some of these peptides. Let's start these peptides. Let's start with the side effects that with the side effects that I take I take most seriously.

most seriously. Sermorelin, CJC-1295, and Sermorelin, CJC-1295, and tesamorelin are tesamorelin are synthetic versions of synthetic versions of the hormone the hormone the hormone signal, and your signal, and your immune system can immune system can learn to recognize learn to recognize them as foreign. And them as foreign. And when that happens, when that happens, it produces it produces antibodies to these antibodies to these peptides.

peptides. peptides. Tesamorelin has the Tesamorelin has the best data on this best data on this issue, as it has issue, as it has undergone undergone undergone FDA clinical trials.

FDA clinical trials. About half of About half of people who took people who took this peptide for 6 this peptide for 6 consecutive months consecutive months developed some developed some level of antibodies, and level of antibodies, and about 4% had about 4% had allergic reactions: allergic reactions: itching, itching, itching, redness, redness, redness, flushing, flushing, flushing, hives, or a hives, or a rash. And most of the rash. And most of the people who had a people who had a reaction were those reaction were those who had these antibodies.

who had these antibodies. This is important because This is important because each injection gives each injection gives your immune your immune system another system another chance chance to “look” at the peptide.

to “look” at the peptide. Therefore, a reaction that Therefore, a reaction that starts small starts small can increase with can increase with each dose. If each dose. If ignored ignored ignored long enough, it can long enough, it can progress to progress to anaphylaxis, which is a anaphylaxis, which is a tightening of the throat, tightening of the throat, trouble breathing, trouble breathing, swelling of the lips or tongue, a swelling of the lips or tongue, a rapid rapid rapid heartbeat, or heartbeat, or a feeling like you're about to a feeling like you're about to pass out. This is a pass out. This is a case for an case for an emergency emergency emergency ambulance call. This is ambulance call. This is not a case of not a case of waiting and waiting and watching. A watching. A slight flush of slight flush of warmth, redness warmth, redness after an injection of after an injection of sermorelin, sermorelin, sermorelin, tesamorelin, or CJC- 1295—this is quite 1295—this is quite common and will common and will pass. What I pass. What I want you to pay want you to pay attention to is different.

attention to is different. Hives, a rash Hives, a rash that spreads that spreads beyond the injection site, beyond the injection site, itching that doesn't itching that doesn't go away, or any reaction that is any reaction that is worse than the last.

worse than the last. So, this is a So, this is a growing reaction. Any of growing reaction. Any of these means you these means you need to stop need to stop and call and call your doctor your doctor before taking your before taking your next dose.

next dose. The next thing many The next thing many people notice when people notice when taking growth taking growth hormone-releasing peptides—specifically hormone-releasing peptides—specifically these these these three—is three—is three—is water retention. Why is this water retention. Why is this happening? Because happening? Because growth hormone can growth hormone can tell the kidneys tell the kidneys to retain sodium, and to retain sodium, and water follows salt.

water follows salt. You may notice this You may notice this as swollen hands, as swollen hands, swollen ankles,

swollen ankles, rings that become rings that become tight, and weight that tight, and weight that supposedly increases by a supposedly increases by a few pounds in the first few few pounds in the first few weeks of taking this weeks of taking this peptide. During peptide. During tesamorelin trials, tesamorelin trials, leg swelling, joint and leg swelling, joint and muscle pain occurred more muscle pain occurred more frequently than when frequently than when taking a placebo. And that taking a placebo. And that excess fluid has to excess fluid has to go somewhere, and go somewhere, and one of the worst one of the worst places is your places is your wrists. The nerve that wrists. The nerve that provides provides provides sensation to the thumb sensation to the thumb and two adjacent and two adjacent fingers passes fingers passes through a narrow tunnel, through a narrow tunnel, and when the surrounding and when the surrounding tissues swell, tissues swell, it's like a hose in a it's like a hose in a doorway that doorway that gets narrower and narrower.

gets narrower and narrower. This is carpal tunnel syndrome. syndrome. syndrome. Numbness and Numbness and tingling in tingling in the fingers, often the fingers, often worse at night.

worse at night. Studies in Studies in which healthy older which healthy older men were given men were given growth hormone growth hormone showed just that.

showed just that. Along with some Along with some growth of growth of mammary gland tissue in mammary gland tissue in some of them, which some of them, which usually goes away when usually goes away when the dose is reduced. But the dose is reduced. But tingling in the hands is a reason to see a is a reason to see a doctor, not something you doctor, not something you should just should just endure. Now, endure. Now, joint pain joint pain is caused by that is caused by that same swelling, as well as a same swelling, as well as a growth signal growth signal acting on the acting on the joint tissue itself.

joint tissue itself. What about blood sugar? What about blood sugar? Growth hormone works Growth hormone works against insulin. It against insulin. It raises raises raises blood sugar levels so blood sugar levels so your body has your body has fuel on hand, which fuel on hand, which means that means that somorelin, CJC-1295, and somorelin, CJC-1295, and tesamorelin can tesamorelin can change change change fasting glucose fasting glucose and and and insulin resistance insulin resistance insulin resistance in an undesirable direction. If in an undesirable direction. If you already have prediabetes, you already have prediabetes, it matters. Therefore, it matters.

IGF-1 LR3 and Blood Sugar Concerns

Therefore, I always want to I always want to review review review fasting glucose fasting glucose and glycated and glycated hemoglobin (A1C) levels before hemoglobin (A1C) levels before starting therapy, and starting therapy, and also every few also every few months during months during treatment. But IGF-1 LR3 treatment. But IGF-1 LR3 works in a different direction, as IGF-1 works, as IGF-1 works almost like insulin.

almost like insulin. Its most common Its most common side effect is side effect is low low low blood sugar: shakiness, blood sugar: shakiness, sweating, sweating, sweating, rapid rapid rapid heartbeat, and heartbeat, and sudden hunger, sudden hunger, usually a usually a few hours after few hours after the injection, which is the injection, which is exacerbated if you exacerbated if you miss a miss a meal and even worse during meal and even worse during intense intense intense exercise. I have also exercise. I have also observed IGF-1 observed IGF-1 causing causing causing water retention and water retention and joint pain in people who joint pain in people who use use use high doses for high doses for long periods of time. Due to its long periods of time. Due to its effects on blood sugar levels effects on blood sugar levels, IGF-1 should, IGF-1 should be used be used be used with caution, with strict with caution, with strict adherence to adherence to adherence to dosage, and under the dosage, and under the close supervision of close supervision of your doctor. Let your doctor.

Semax and Selank Brain Peptide Risks

Let 's move on to 's move on to peptides that peptides that help help help maintain maintain maintain brain health. brain health. Most of you already Most of you already know about C-max and C-lang, know about C-max and C-lang, so I will focus on so I will focus on their mechanisms of their mechanisms of action that explain the action that explain the side effects.

side effects. Let's start with the C-max. C-max Let's start with the C-max. C-max increases the activity of increases the activity of dopamine and dopamine and serotonin, and this is what is serotonin, and this is what is associated with associated with sharper focus sharper focus and concentration. This and concentration. This also becomes a problem also becomes a problem when when when the drug is abused. If the drug is abused. If you overdo it with C-max, you overdo it with C-max, focus turns focus turns into anxiety. You will into anxiety. You will notice this by notice this by irritability, irritability, irritability, restlessness, rapid restlessness, rapid thinking, thinking, thinking, headaches, and headaches, and trouble trouble trouble falling asleep, especially falling asleep, especially if you take it in the if you take it in the afternoon.

afternoon. afternoon. If you are naturally If you are naturally prone to prone to anxiety, you anxiety, you may feel this may feel this first. But C-lang itself first. But C-lang itself is a completely is a completely different story. In my different story. In my practice, I have not seen it practice, I have not seen it cause cause cause drowsiness or drowsiness or emotional lethargy in people.

emotional lethargy in people. Concerns Concerns Concerns only arise when it is only arise when it is combined with combined with certain other certain other substances. C-lang works substances. C-lang works by increasing the by increasing the activity of GABA.

activity of GABA. This is the same This is the same calming calming calming neurotransmitter that is neurotransmitter that is affected by affected by alcohol, sleeping pills, and alcohol, sleeping pills, and anti-anxiety anti-anxiety anti-anxiety drugs such as drugs such as benzodiazepines. When benzodiazepines. When combined, the effects combined, the effects quickly add up.

quickly add up. Sometimes this leads Sometimes this leads to severe sedation, to severe sedation, slowed reactions, slowed reactions, and drowsiness, and drowsiness, making driving making driving dangerous. If you dangerous.

GHK Copper Injection Site Reactions

If you are taking any of are taking any of these, you should these, you should tell your tell your doctor before doctor before starting to take Selank.

starting to take Selank. What about the What about the good old copper good old copper peptide GHK? The copper peptide GHK? The copper peptide GHK is known to be peptide GHK is known to be great for great for skin health, skin health, hair growth, and reducing hair growth, and reducing inflammation, but it is inflammation, but it is also known for also known for causing a burning sensation at the causing a burning sensation at the injection site. And there are injection site. And there are several reasons several reasons worth taking into account.

worth taking into account. Therefore, not all of the copper Therefore, not all of the copper in the vial is firmly in the vial is firmly bound to the bound to the GHK peptide, and free copper may GHK peptide, and free copper may cause cause cause skin irritation skin irritation after administration.

after administration. The solution is also quite The solution is also quite concentrated, and a concentrated, and a strong drug that strong drug that gets into a small gets into a small area of ??tissue area of ??tissue attracts fluid, which attracts fluid, which increases the pressure and increases the pressure and burning sensation.

burning sensation. Some people react Some people react to the copper itself with a to the copper itself with a small area of small area of local inflammation.

local inflammation. And that's why you may And that's why you may notice notice notice redness, redness, redness, irritation, or irritation, or a small lump at the a small lump at the injection site. In injection site. In some people, the same some people, the same irritation may irritation may occur on sensitive occur on sensitive skin, especially when skin, especially when GHK-copper is combined with GHK-copper is combined with strong acids strong acids or retinoids.

Injection site sensitivity can often Injection site sensitivity can often be reduced be reduced by using a more by using a more dilute solution, dilute solution, injecting it injecting it more slowly, rotating more slowly, rotating injection sites, and injection sites, and sometimes making sure sometimes making sure the peptide has warmed to the peptide has warmed to room room room temperature before temperature before administration. These are decisions that you and your doctor that you and your doctor should make should make together. But a hard together. But a hard lump that lump that keeps growing, or keeps growing, or redness that redness that spreads and becomes spreads and becomes hot—that's another hot—that's another problem I problem I want to want to talk about soon.

LL-37 and Autoimmune Flare Risk

Now, what talk about soon. Now, what about LL-37? LL-37 is an about LL-37? LL-37 is an amazing peptide. It's amazing peptide. It's your body's own germ-killing machine, germ-killing machine, but that's not its only but that's not its only function. It also function. It also sends sends sends alarm signals to your alarm signals to your immune system. When immune system. When it attaches to it attaches to fragments of your fragments of your own DNA, it own DNA, it transfers them to transfers them to immune cells that immune cells that perceive your perceive your own tissues as a own tissues as a threat, and this may threat, and this may be part of the be part of the process that triggers process that triggers psoriasis. In rosacea, psoriasis. In rosacea, the skin overproduces the skin overproduces LL-37, and this LL-37, and this supports supports supports redness and redness and inflammation. In inflammation. In lupus, it lupus, it appears in appears in the remnants of cells that the remnants of cells that provoke provoke provoke autoimmune autoimmune autoimmune exacerbations. It exacerbations. It also causes mast also causes mast cells to release cells to release histamine, which causes histamine, which causes some people some people to experience to experience to experience redness, redness, redness, itching, hives, itching, hives, or a large red or a large red swelling at the site of swelling at the site of LL-37 injection. So, LL-37 injection. So, if you if you have a history of psoriasis, rosacea, have a history of psoriasis, rosacea, lupus, or any lupus, or any autoimmune autoimmune autoimmune disease, LL-37 has disease, LL-37 has the potential to worsen the potential to worsen this condition. Exacerbation of a this condition. Exacerbation of a pre-existing pre-existing pre-existing condition, new condition, new joint pain, or a joint pain, or a rash that spreads rash that spreads after starting after starting treatment is a clear treatment is a clear signal to stop signal to stop and discuss it with your and discuss it with your doctor. I understand.

doctor. I understand. Choosing supplements can Choosing supplements can be extremely be extremely difficult. There are difficult. There are hundreds of brands, hundreds of brands, conflicting conflicting conflicting claims, and no claims, and no way to know what is way to know what is actually quality and what actually quality and what will really help will really help improve your improve your health. That's why I health. That's why I created created created Dr.

Dr. Dr. Jones' Supplement Store. Every product Jones' Supplement Store. Every product in the store for in the store for energy, energy, energy, gut health, sleep, gut health, sleep, hormone optimization, recovery, and, recovery, and more is personally more is personally reviewed, reviewed, reviewed, tested, and tested, and recommended. These are the recommended. These are the formulas I formulas I use and use and recommend to my recommend to my patients, friends, and patients, friends, and family. So family. So go to go to drjonesupplements.com, drjonesupplements.com, drjonesupplements.com, sign up for my sign up for my newsletter, and you'll newsletter, and you'll get 10% off your get 10% off your first order. You will first order. You will also receive also receive exclusive exclusive exclusive protocols and insights protocols and insights that I share only that I share only with my community.

with my community.

GLP-1 Side Effects Beyond the Gut

So let's cut out the unnecessary and So let's cut out the unnecessary and focus on what focus on what really works. really works. Now let's move on to Now let's move on to GLP-1 drugs. As you GLP-1 drugs. As you know, GLP-1s have become know, GLP-1s have become part of our part of our health culture, they've health culture, they've been studied in tens of been studied in tens of thousands of people, so we thousands of people, so we

know more about their know more about their side effects side effects than anything else in than anything else in this video. And this video. And most of you already most of you already know about the possible know about the possible nausea, constipation, diarrhea, nausea, constipation, diarrhea, and acid reflux.

and acid reflux. Let's talk Let's talk about four things that about four things that people mention people mention besides GI problems. besides GI problems.

The first is fatigue. In The first is fatigue. In large-scale large-scale weight loss studies, fatigue was a very weight loss studies, fatigue was a very common complaint, and common complaint, and it is probably the second it is probably the second most common side most common side effect after effect after intestinal problems. You intestinal problems. You eat significantly less, eat significantly less, usually consume usually consume less protein, often less protein, often drink less water, and drink less water, and consume less consume less salt, so your salt, so your body lacks body lacks fuel and fluids. And fuel and fluids. And rapid weight loss rapid weight loss can also lead can also lead to deficiencies in iron, B12, to deficiencies in iron, B12, and other nutrients your body needs. So your body needs. So when a patient on GLP-1 when a patient on GLP-1 tells me they are tells me they are exhausted, I will exhausted, I will first assess their first assess their protein intake, protein intake, hydration levels, and hydration levels, and tests before tests before blaming the blaming the peptide itself. What about peptide itself. What about hair loss?

hair loss? Hair loss is what scares people is what scares people the most. In the most. In studies, this was more studies, this was more often often often observed when observed when taking Wegovy, which taking Wegovy, which also provided also provided greater weight loss, and greater weight loss, and this is logical. Most this is logical. Most cases of cases of hair loss with hair loss with GLP-1 use GLP-1 use are caused by rapid are caused by rapid weight loss and weight loss and low low low protein intake. This is called protein intake. This is called telogen effluvium telogen effluvium telogen effluvium.

.. This is the same This is the same hair loss that people hair loss that people see under severe see under severe stress, after stress, after surgeries, or even surgeries, or even after prolonged COVID, and after prolonged COVID, and it usually it usually starts a starts a few months after few months after starting to lose weight.

starting to lose weight. But it usually But it usually grows back once grows back once the weight stabilizes the weight stabilizes and nutrition returns to and nutrition returns to normal. However, if your normal. However, if your hair is falling out hair is falling out in patches or in patches or continues to fall out continues to fall out after your after your weight has stabilized, it needs to be, it needs to be investigated further. Anhedonia is something that is something that most people don't most people don't have enough knowledge about.

have enough knowledge about. This means losing This means losing the pleasure you the pleasure you used to get used to get from certain things. from certain things.

People can rejoice People can rejoice that sweets and that sweets and junk food junk food no longer no longer appeal to them. But appeal to them. But sometimes it sometimes it also applies to hobbies, drinks also applies to hobbies, drinks they used to they used to have with friends, and have with friends, and sometimes even the people sometimes even the people they spend they spend time with. But it becomes time with. But it becomes clear when you clear when you learn what learn what exactly exactly exactly these drugs affect in the body. GLP -1 receptors are also -1 receptors are also located in the brain's reward system, the dopamine brain's reward system, the dopamine system, which makes system, which makes us crave something.

us crave something. Muting this Muting this system is the main system is the main reason why reason why food cravings disappear. food cravings disappear.

Early studies Early studies suggest that cravings for suggest that cravings for alcohol and nicotine alcohol and nicotine are also reduced. are also reduced.

However, for some However, for some people, this "regulator " is pushed too " is pushed too far. The good thing is that far. The good thing is that large-scale reviews have not large-scale reviews have not found that these found

that these drugs drugs drugs cause depression cause depression or suicidal thoughts on a mass scale.

or suicidal thoughts on a mass scale. This is very reassuring. This is very reassuring. But for a person who But for a person who feels this way, a gray, feels this way, a gray, emotionally flat emotionally flat life has great life has great significance. If you significance. If you notice this or a notice this or a worsening of your mood, worsening of your mood, tell your tell your doctor. Sometimes it is doctor. Sometimes it is enough to simply enough to simply lower the dose. One of the lower the dose. One of the rather strange rather strange side effects is side effects is burping. Food that burping. Food that lingers in lingers in the intestines gives the intestines gives bacteria more bacteria more time to process it.

time to process it. These bacteria These bacteria produce gas, produce gas, particularly hydrogen sulfide, particularly hydrogen sulfide, which is what causes the which is what causes the specific smell specific smell during burping in during burping in people taking people taking GLP-1. A large, fatty, GLP-1. A large, fatty, protein-rich meal protein-rich meal in the evening can in the evening can worsen this condition.

worsen this condition. Smaller portions of food Smaller portions of food can help. But can help. But if burping if burping is accompanied by is accompanied by is accompanied by vomiting of vomiting of previously eaten food, severe previously eaten food, severe bloating, or bloating, or stomach pain that doesn't go away, stomach pain that doesn't go away, your stomach may be your stomach may be emptying too emptying too slowly or there may be some kind of slowly or there may be some kind of blockage. You should blockage. You should inform your doctor about this inform your doctor about this, as it, as it requires additional requires additional examination.

examination. examination. Let's end with this. Let's end with this.

Contaminated and Gray Market Peptides

Some reactions that Some reactions that people attribute to people attribute to the peptide are the peptide are due to other impurities in the due to other impurities in the vial or because vial or because the contents do not the contents do not match the label.

match the label. This is where the “gray” This is where the “gray” market for peptides market for peptides creates problems, creates problems, so the source of so the source of origin is of origin is of great importance. When great importance. When Infinite Labs tests Infinite Labs tests peptides purchased peptides purchased online, the same problems online, the same problems are consistently found are consistently found.

.. The purity does not The purity does not match the declared one, the amount of peptide, the amount of peptide does not match does not match the label—sometimes the label—sometimes it is more, sometimes it is more, sometimes less. Some vials less. Some vials contain endotoxins —toxins from the walls of —toxins from the walls of dead bacteria that dead bacteria that can cause can cause fever, chills, fever, chills, body aches, and body aches, and flu-like flu-like flu-like symptoms a few symptoms a few hours after injection.

hours after injection. Sometimes, unfortunately, the Sometimes, unfortunately, the bottle contains a bottle contains a completely different compound completely different compound than what is listed on the than what is listed on the label. And each of label. And each of these cases these cases looks like a side looks like a side effect of the drug.

effect of the drug. Too much of a Too much of a peptide dose increases the peptide dose increases the expected side expected side effects, too little causes you to increase causes you to increase the dosage, and a toxin the dosage, and a toxin or the wrong or the wrong compound causes compound causes reactions that have reactions that have nothing to do with the nothing to do with the peptide you peptide you planned to take.

planned to take. There is also a risk of There is also a risk of common bacteria. A common bacteria. A non-sterile vial non-sterile vial or powder mixed or powder mixed with improper water with improper water can lead to an can lead to an abscess. A hot, abscess. A hot, swollen, painful lump that only gets worse. And here's the rule. And here's the rule I want to warn I want to warn people about. A red, painful people about. A red, painful spot that disappears in spot that disappears in a day or two is completely a day or two is completely normal, but normal, but

fever, chills, spreading redness, or a growing lump are no longer growing lump are no longer the work of the peptide.

the work of the peptide. Consider this Consider this contamination until contamination until proven otherwise, proven otherwise, and please and please consult a doctor.

consult a doctor. So be careful So be careful where you buy where you buy peptides, know peptides, know their manufacturer, and their manufacturer, and demand independent demand independent testing that testing that will show the contents of the vial, will show the contents of the vial, the degree of purity, and the the degree of purity, and the level of endotoxins.

level of endotoxins. And if the seller And if the seller can't provide this, you can't provide this, you don't really know don't really know what you're putting into your what you're putting into your body. So, if you're body. So, if you're taking a peptide taking a peptide course and are noticing course and are noticing strange side effects, strange side effects, this video will help you this video will help you understand what's understand what's expected and what's not.

expected and what's not. If this analysis was If this analysis was helpful to you, helpful to you, please click the please click the "like" button "like" button and subscribe for and subscribe for new new new science- science- science- based knowledge based knowledge about hormones, peptides, about hormones, peptides, and and and longevity medicine, and longevity medicine, and share this video share this video with those who might with those who might need it. Thanks for need it. Thanks for watching. I'm Dr.

watching. I'm Dr. Greg Jones, Greg Jones, see you in the see you in the