

Transcript of video (30 minutes – with time stamps))

## Understanding colloidal silver, ionic silver, and Opti-Silver

Hello. I'm Jay Newman. I'm the president of Invision International Health Solutions, and I'm the creator of Silver 100 with Opti-Silver.

I'm a member of the board of advisors of the National Health Federation, which is the world's oldest health freedom organization. And I've been interviewed on Good Morning America and NBC TV News, as well as perhaps over a hundred radio shows as a leading expert in the field.

This video will be educational about colloidal silver, ionic silver, and Opti-Silver, which is the key ingredient in Silver 100.

We're gonna get into chemistry here, which is going to be fascinating and utterly compelling for anybody with a chemistry background. But the goal here is to also make this very easy to understand and very educational for the layperson as well.

Now, let's introduce some basic concepts that are going to be consistent through this presentation and help it all make sense. And we're going to show why these statements are accurate.

Number one, the ionic form of silver is the only bioactive component that provides any benefits in any silver product.

Number two, ionic silver requires a carry-and-release mechanism in order to be bioactive in the human body.

And number three, Opti-Silver does the same thing as all silver products, which is deliver silver ions. It just does so in a far more efficient manner.

Colloidal Silver was developed over a hundred years ago, before they had any understanding of the chemistry, and the majority of it is useless, plain metal, which we're going to show very clearly.

Even though colloidal silver often works quite well, only a very small percentage of it is providing any benefits. In fact, only up to about 3% of the silver in colloidal silver is ionic silver. Therefore, technically speaking, it can be labeled as ionic silver, but it is still colloidal silver. We're going to explain all this through this presentation.

And I want to just make a comment here. A lot of colloidal silver products today are labeled as ionic silver, and as this presentation is going to show that is technically legitimate because a tiny amount of the silver in those colloidal silver products is ionic silver, also called silver ions. But it doesn't make it any better of a product. It's just a more interesting name.

Be careful not to be fooled.

We're going to show why the delivery mechanism and the high percentage of ion content in Opti Silver is completely in a different universe than any other product on the market.

What we're going to show is that with Opti Silver virtually 100% of the silver is ionic silver. We're also going to show that it provides a far superior delivery mechanism. It contains an optimized stabilization-and-release complex. It provides a far better value. You use much less for far superior results.

#### 03:16 Silver Atom

Let's take a look at an atom and try and understand it from a very simple basic level of physics and chemistry.

Imagine it was like the solar system. The sun in the middle is the nucleus and the planets spinning around are electrons.

Elements as they appear on the periodic table, and commonly in nature, have an equal number of protons and electrons. In the case of silver, the number is 47.

An atom, just like it appears on the periodic table with that equal number of protons as electrons, has no charge. It is neutral. It is not bioactive. It's not electromagnetically active, electrochemically active, and it is referred to as plain metallic or elemental whatever the substance is, in this case, silver. And it is entirely inert. It does absolutely nothing in the human body.

#### 04:14 Silver Ion

An ion is formed when you either add an extra electron to an atom or remove an electron from an atom. In the case of silver ions it involves removing one of the electrons, which gives it what's called a positive charge. It becomes highly bioactive, highly unstable, and as an ion it will always seek a partner.

This is a basic, important concept to understand. Any mineral that's regarded as being very important for human nutrition only has bioactive activity when it's in the ionic form. It's the interactions of ions and how they pair up and un-pair and re-pair with other partners that creates all the action, that gives all the biological benefits that ions have in the human body.

#### 05:03 Ionic attractions

In trying to understand ionic attractions, the basics are: Ions will always seek a partner to give them back their electromagnetic balance, which forms complexes and compounds. Substances compete for ions through attraction. The strength of the attraction varies depending on the particular types of ions.

If you think about it, if you went to the health food store and wanted to buy any common mineral as a supplement, let's just say magnesium, for instance, you don't find magnesium alone. Even if it says magnesium and nothing else on the label on the front, if you look at it on the side, it's magnesium something. Magnesium citrate, for example. That's because the magnesium is only useful as an ion, and because it's an ion it's always going to have a marriage partner to give it back balance. This is the nature of ions.

Table salt, for example, is sodium chloride. It's a bond between sodium ion and chloride ion. And by the way, when it goes into water, what happens? It separates. It dissolves. The sodium and the chloride unpair, or dissociate, which we're going to explain in this presentation.

#### 06:20 Silver Nitrate

When we talk about strength of attraction, this is the key to everything going on with ions biologically.

Silver nitrate is a form of ionic silver bonded to nitrate ion, or silver ion married to nitrate ion, that has been used in chemistry and in medicine for decades where silver ions are desired. But since you don't find them alone in the universe very much, this is a good form because it's a very weak attraction. Which means, once introduced to a new environment, odds are that new environment, the chemistry, the characteristics, the pH, the other substances competing, will disrupt the bond of the silver and the nitrate and you will end up with a free silver ion available to now marry to something else and do whatever the researcher or the medical person wants it to do.

Now at the other end of the spectrum, we have silver chloride. And this is very relevant when it comes to delivering silver ions to the human body, because the attraction between silver ion and chloride ion is very, very strong.

In fact, it's so strong that it's going to almost always overpower any other bonding that might exist with silver ions. And this silver ion and chloride ion bonding, forming silver chloride, is so strong that it will never release that silver ion in most cases. Just a tiny bit of it will over time. And it will precipitate out of the blood because it's not soluble in water – or in the blood, which is mostly water – and it just gets excreted.

It's for this reason that anything that's delivering silver to the body for potential bioactive benefits needs to be delivering it as silver ions number one, and number two it needs to have a carry and release mechanism in order to carry it past the chlorides that are abundant in the body, especially abundant in the stomach – hydrochloric acid is chloride.

So, now we go on a journey and explain why colloidal silver exists, what ionic silver actually means, which we're already learning, and why Opti-Silver is a whole new world of being able to get benefits of silver ions on the body.

#### 08:43 Colloidal Silver

This is how colloidal silver is made. They take a vat of water – or you could buy a kit and do it at home in a glass of water in your kitchen – and put wires in there. Or, in volume production for retail bottling, they just use bigger rods and a bigger vessel of water but it's all the same process.

It's quite antiquated. They didn't even know what was going on when they first created this process years ago.

What happens is one or both of those metal rods or wires is made out of silver. They start with pure water, which won't conduct electricity, and they add an electrolyte to make a conductive – typically table salt or baking soda – and they clip the tops that are sticking out of the water to wires that go to a battery or an electrical AC transformer, and they run electricity across those two rods in the water and the silver rod deteriorates.

And it's putting little tiny microscopic pieces, little balls, little particles of silver into the water.

Now, the word colloidal means nothing more than “Not soluble in the medium – will not dissolve.” This is the exact opposite of what you need, however, to deliver silver ions to the body, because “colloidal, not soluble” means it won't dissolve, means the components, the ions making up the compounds, the complexes, the molecules, will not be released, will not dissociate. And that's what's essential.

But we're going to show why a tiny bit of colloidal silver does get released as active silver ions in the body, but only a tiny bit.

#### 10:27 Colloidal Silver – A certain “colloidal” silver gets a patent...

Now, we're going to talk a little bit about chemistry. And this might take a little thought, but it's really simple and we're going to graphically show you exactly what we're talking about here in a moment.

There's a company that has been getting patents in order to use it in marketing, and the patents have virtually zero meaning but it looks good in marketing. Their colloidal silver in the bottle is essentially the same as all other colloidal silver. Their first patent literally said “Instead of a pair of metal rods in the middle of a round vessel of water, we're going to create” – ready for this? – “a square vessel and put a pair of rods in each of the four corners.” And the abstract for the patent said “This is how to make colloidal silver faster and cheaper.” Nothing different other than that. Nothing meaningful whatsoever. But it was enough to be able to get a patent and put that in the marketing and it looked impressive.

Then they got another patent. And by then they had to get more drilled down in explaining the chemistry in order to get this one approved. It's so convoluted. It's so lengthy. There's nothing different really happening, but in order to get a patent they had this little sentence included that was required.

And by the way this pertains to all colloidal silver products, because there's nothing different with theirs. It's all the same.

It's "colloidal silver particles having an interior of elemental silver and a surface of silver oxide."

Now, what are we saying here? Marriage of ions, right? In this case, silver oxide is a marriage of silver ion with oxygen ion.

And many of us are familiar with oxidation. The most simple form of that is rust – a ball bearing sitting out getting rust on the surface. But when you look at that ball bearing only a very small amount, the surface, is the rust. The rest of it is still a solid ball of regular metal made up of metallic, elemental metal.

In fact, their patent goes on to specify "the composition comprises in excess of 97% metallic silver."

Now, again, elemental, metallic silver is just atoms like it appears on the periodic table, neutral – no biological activity whatsoever. This is what all colloidal silver consists of.

13:01 Colloidal silver – graphic

And this is a graphic representation of what we're talking about.

Since 97% or more is the inert, metallic, elemental silver that comprises the vast majority of that particle, only up to 3% is silver ions. It's on the surface. It's like a haze, like rust, but it's silver oxide – oxidation. And it's silver ions married to oxygen ions, which happens to be a pretty strong bond by the way and is not conducive to dissociation as it passes through the body.

So now we're talking about only a small percentage of the silver in colloidal silver is ever biologically active ions, and only a small percentage of that is ever released in the body. And yet it works quite well, even with that tiny bit of yield of silver ions.

Now, I want to point out also, again, because of what you're seeing here, technically speaking it is absolutely legitimate for a colloidal silver product to now change its label to ionic silver.

As far as we know, Opti-Silver was the first to be labeled that way and marketing – decades ago. But now that the science is becoming well understood, that that's the only biologically active component, more and more colloidal silver products are labeling themselves as ionic silver.

Please don't be misled. If you have a tiny bit of it as biologically active silver ions and the rest is inert metal, call it ionic silver all day long if you want – it doesn't make it work better.

And if it's not in a carry-and-release mechanism that's efficient for carrying those silver ions past the chlorides and other substances in the body and then dissociating – releasing them – you're still not getting any benefit by changing the name.

And by the way, there's other names also: nano-particle silver, nano silver. There's nothing different. It's all the same substance.

The only other exception that's been popular for a long time is what's called mild silver protein, which is like black coffee, brown coffee, high concentration, and what that is is literally ground up talcum-powder sized, normal silver metal – no ions even involved –that would all sink to the bottom of the jar like sand except they mix it with a protein to bring it into an emulsified state, if you will, through the bottle. No ions, but because it's so concentrated, and they tell you to consume large quantities, a tiny bit of that will oxidize and release silver ions in the body – infinitesimal quantities, just like with colloidal silver, which is a little more efficient, but nothing compared to Opti Silver.

Now let's take a look at what Opti-Silver is about.

16:09 Opti-Silver

Opti-Silver is the result of 10 years and a million dollars in research and development. While it utilizes extremely simple, natural ingredients it's extremely complex chemistry, and that's why it works the way it does.

The three ingredients are citric acid, potassium citrate, and silver oxide. Those are the raw materials we start with.

Now, I want to point out the raw material for the source of silver ions in making Opti-Silver is silver oxide, which we buy in powder from a chemical supplier. Silver oxide, if you recall a moment ago, is the end result of the manufacturing process for making colloidal silver.

Their end result is the starting point in making Opti-Silver. It's the raw material.

And we're measuring things knowing the exact molecular structure and chemistry of what we're starting with and what we're mixing. We're measuring to literally within a thousandth of a gram on the ingredients, and we know exactly what we're creating.

We're creating a molecule for carrying silver ions into the body and releasing them.

It's a very precise complex, and it's dissolved in solution. There are no particles. There is no microscope known to man that can see the Opti-Silver complex because it's literally a silver ion, which

is an atom missing an electron – the size of an atom – married to citrate, with potassium as a counter ion.

#### 17:47 Opti-Silver – Optimized Delivery

Opti-Silver is designed to provide optimized delivery. The silver citrate carries the silver ion past chlorides. The potassium provides for optimum solubility and the optimal dissociation constant. The dissociation constant, as we're going to see in a moment, is what chemists refer to in what dictates when a substance stays together bonded, and when it un-pairs, or dissociates, releasing the components.

The complex slowly dissociates on exposure to the body's chemistry.

#### 18:24 Opti-Silver – graphics

This is what the Opti-Silver molecule would look like in a certain type of representation that chemists like to use. The Ag at the top left is the silver, the red and blue balls and bars is the citrate, and the K ball at the bottom right is the potassium, which is there hanging around but not directly connected.

This is the chemical formulation of Opti-Silver. K on the left is potassium, Ag on the right is silver, and the rest in the middle is the citrate.

Now, there's two ways that this could be represented by chemists. The first is simply this is the chemical formulation that we just looked at. The second, though, is what chemists refer to as the equilibrium equation. And that's where it talks about when it stays together, which is on the left of that double arrow, versus when it separates, or dissociates, which is on the right of that double arrow. And you can see on the far right there: Ag plus, which is silver ion, free from the bond.

This is yet another way that chemists would represent the equilibrium equation, and specifically how Opti Silver functions. On the left you can see the Ag is stabilized – married into the molecule – and then, on exposure to the body's chemistry, slowly that silver ion is released into the body as free silver ion.

So now we can go back to the basics and review them again, and now it all should hopefully make sense to you.

The ionic form of silver is the only bioactive component that provides benefits in any silver product.

Ionic silver requires a carry-and-release mechanism to be bioactive in the human body.

And Opti-Silver does the same thing as all silver products, which is deliver silver ions, it just does so in a far more efficient manner.

Colloidal silver was developed more than 100 years ago, before they had any understanding of the chemistry. The majority of it is useless, plain metal.

Even though colloidal silver often works quite well, only a small percentage is providing any benefits.

Up to about 3% of the silver in colloidal silver is ionic silver. Therefore, technically speaking, it can be labeled as ionic silver, but it's still colloidal silver.

With Opti-Silver virtually 100% of the silver is ionic silver, and it provides a far superior delivery mechanism, which is an optimized stabilization-and-release complex. It provides far better value, because you use much less for far superior results.

Before closing here, I want to just touch on a few subjects that require being addressed, in order to clear up a few misconceptions here.

#### 21:19 Clearing Up Misconceptions

Number one, parts per million, which is grossly misrepresented in the colloidal silver field, is irrelevant in terms of any benefits that a silver product might provide to the human body, and is completely irrelevant in terms of safety.

A higher or lower parts per million is only telling you how concentrated the silver is in the water.

“A”, it doesn't tell you the form of silver or the type of silver whatsoever – atomic, metallic/elemental, ionic, what the carrier mechanism is.

“B”, it's irrelevant in terms of benefits or safety because it's just the concentration. It's like saying, you know, you've got coffee in a cup, and you have espresso in a little shot-glass sized cup. They both have the exact same amount of caffeine in them, theoretically, for our argument here. Which one is safer for the body? Which one's going to have a different impact on the body?

No difference whatsoever!

Parts per million only impacts the usage guidelines for how much you have to take to get a given amount of silver. And it tells you the cost that you're paying per microgram of silver. Period!

Any company that represents that parts per million of their product makes it more effective or safer is just misleading you.

Opti-Silver has no particles.

And particles are not desirable, and exist only in colloidal silver.



And particle size is often grossly misrepresented. You've got photos from companies that say "Look at our particle size compared to the competitors." But in no case do you see any analytical lab that's a third-party respected laboratory providing those images. They're coming out of their "back room", if you will.

We went to the biggest analytical lab in the world and had them take those same products and do the same type of microscopy at the same level of magnification. And the one that likes to use those images the most – claim to have the little dots – look like mud, look like a Rorschach test.

So particle size is grossly misrepresented in the first place.

Just like is the claim that smaller particles is safer. That is so nonsense. Simply because, if you think about it, if anything was going to build up – let's say you got sand on one of your jeans legs and powder on the other. Which is going to get into the fabric more? Small particles has nothing to do with whether silver is safe and could build up in the skin – skin discoloration, which we'll talk about in a second.

Particles are not even desirable, though. It's antiquated from the start. What we want is an actual molecular structure that's doing the job. That's what Opti-Silver does.

The other thing we want to talk about is the fact that all silver products require responsible usage.

Let me say that again.

All silver products require responsible usage.

Since I've been in this business for 20 years, I've always made it clear in all marketing materials: too much of anything is unsafe. Drinking too much water too quickly has killed people. That doesn't mean water is unsafe. It means stupidity is unsafe.

All silver products require responsible use. This is imperative to understand for two reasons. On the one hand, with responsible use all silver products are entirely safe. On the other hand, excess of anything is unsafe, and there is no form of silver product that is somehow immune or special or whizbang unique – that because of being colloidal or being ionic or being nano or being claimed to be a certain particle size, or anything – anything! – would make it exempt from the basic that too much of anything is unsafe.

Having said that, with normal responsible usage, all silver products are safe.

I want to make it very, very clear that any company that represents that their silver product cannot discolor the skin with excess use should not be trusted another moment, because there is no such thing.

This concerns me because I do hear stories of people that get skin discoloration because of these very unscrupulous, irresponsible manufacturers that sell quart-sized and gallon-sized bottles, that state that theirs is somehow special and cannot discolor the skin, and that recommend really large quantities of usage every day, which is a recipe for the risk of unsafe consequences.

With Opti-Silver, 20 years, half-a-million bottles in the field, there's never been a report of anything of the sort. It only comes in a two-ounce bottle. The label says "Use one drop per 10 pounds of body weight per day."

Efficiency is in a completely different world with Opti-Silver. And so is responsibility in how to use it responsibly.

The label directions on Opti-Silver result in 25% of the amount of silver that the EPA says is conservatively extremely safe for a human being to be consuming every single day of their entire adult life from when they're 12 years old to 112 years old.

27:11 SilverSafety.com

And just to add a little tool to make it really easy for anybody to figure out how to use any silver product safely, I helped create a website called silversafety.com and I'm the chairman of the Silver Safety Committee.

This provides a really cool way to determine safe use for daily use, short-term use, or entire lifetime use of any silver product. And it's an automatic calculator. All you do is plug in two numbers: your pounds of body weight, and the parts-per-million concentration of silver in the given product.

You'll also find the government – US government – EPA and ATSDR, which is the Agency for Toxic Substances and Disease Registry, information on silver and how safe it is with normal responsible use.

Go to silversafety.com and you'll see these are the real guidelines for how to safely use any silver product without any risk whatsoever.

28:13 Quotations

Now let's look at some quotations from experts.

Roger LeBlanc, Ph.D., who by the way was on the board of advisors for manufacturing Opti-Silver for many years, and I was told his colleagues regard as one of the top 100 experts in the world, was former chemistry professor at the University of Miami, former director of the Departments of Chemistry and Advanced Microscopy at the University of Miami, and he went on record saying "The Opti Silver complex is far more advanced for achieving the desired results than anything I've seen, regardless of whether it's called colloidal or anything else."

Bill Deagle, M.D., of the NutriMedical report, who interviewed me by the way dozens and dozens of times in marketing Opti-Silver and telling the public it was the number one thing of anything he's seen, went on record saying "Opti-Silver represents as much of an advancement in the medical field as the printing press and microchip did in their fields."

Tim Kingsbury is a retired osteopathic physician in the northeast part of the United States with an incredible reputation. He went on record saying, after four months using the product in his practice "Of all my patients whose conditions would not respond to any standard of care, the success rate with Opti-Silver has been staggering – well over 80%."

Donald Baird, Ph.D., former chemistry professor at Nova Southeastern University and former director of the Department of Chemistry at Florida Atlantic University, who was also on the board of advisors for the manufacturer of Opti Silver for many years, went on record saying "To a chemist, Opti-Silver represents a brilliant chemical formulation that results in a far more efficient delivery mechanism for releasing silver ions in the body."

I hope this presentation has helped you. I understand that at the end of the day nobody's here interested in chemistry. People are here interested about one thing and one thing only – their well-being and the well-being of their loved ones. That's what we strive to provide. And I hope this helps you understand why we might be able to do that for you in a far superior and more efficient manner than any other silver product on the market.

In order to learn more about Silver 100, please go to [silver100.com](http://silver100.com).