

# Has Nanotechnology Given Us The Latest Silver Bullet for Dealing with Our Most Serious Infections?

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If you have spent time on the Internet researching how best to protect your family from common infections or even from SARS or the Avian Flu, you have probably run across information on colloidal silver. You may even have read that it has been around for thousands of years as a microbial agent. But did you know that you already have silver in your diet? Whole wheat and mushrooms contain relatively large amounts of silver, and have been a part of our diet for many ages.

You might also have found some of the more medically accurate websites on colloidal silver. Because we carefully document our newsletters with reliable medical references, you have learned how to distill the real facts from the hype when attempting to locate trustworthy medical information on the web. This issue will deal with reliable information on a certain type of colloidal silver, namely uniform picoscalar oligodynamic silver hydrosol (UPOSH). UPOSH is currently nanotechnology's state-of-the-art silver-based germ fighter.

UPOSH is made through a highly advanced nanotechnology. What makes UPOSH so different is all about its nano-properties which relate to the size of the silver particles. Because these particles are so tiny, UPOSH is not only readily absorbed in your stomach but also easily penetrates into germs when properly delivered in the right amounts. This article explains how these and other properties of UPOSH allow it to attack mutated super-germs without hurting human tissue, destroy germs by destroying the germ from the inside out, does not harm good bacteria in the human intestine, be effective against viruses, and increase the rate and efficiency at which immune cells destroy germs.

As you know, it is difficult for patented antibiotics to keep up with germs' ability to mutate. These mutations circumvent the antibiotic's effectiveness. Also, you are probably well aware that antibiotics do not work against viruses. You may also know that antibiotics used to treat bacterial infections typically cause yeast infections as a side effect. Even though there are antibiotics that can treat fungal infections like candida (yeast or thrush), these same antibiotics cannot treat bacterial infections or viral infections. In fact, taking antibiotics for long periods of time can weaken your immune system. Unless your doctor is particularly attentive, taking antibiotics can cause a lot of secondary problems.

According to Newsweek, during 1992 at least 13,000 hospital patients died from drug resistant infections despite being treated with antibiotics. Incredibly, just a single year later, "super-germs"—that is, germs that mutate to circumvent antibiotics—raised the death toll to 70,000!<sup>1</sup> These figures and growth rate are enough to scare anyone, and as a result in 1994, the Center for Disease Control declared super-germs to be America's number one health crisis.<sup>2</sup> Since that time, at least 2 million Americans suffer from hospital-based super-germ infections annually.<sup>3</sup> In fact, in industrial countries such as Great Britain, infection rates for super-germs have been reported to be at least 3.5 per 1,000 patients admitted to the hospital, or 350 patients out of every 100,000 patients admitted.<sup>4</sup> It is becoming quite clear that silver has a very important role to play in human health especially in regards to super-germs, because even these super-germs are unable to mutate enough to circumvent its effectiveness. For example, in 1998 two researchers Zhao and Stevens commented that "with the rise of antibiotic-resistant bacteria, silver is re-emerging as a modern medicine because all pathogenic organisms have failed to develop an immunity to it (silver ion)."<sup>5</sup> More recently a British researcher by

the name of Landsdown stated that “silver products have two key advantages: they are broad-spectrum antibiotics and are not yet associated with drug resistance.”<sup>6</sup>

So how does silver work in such a way that it can thwart super-germs without hurting our own tissues? It has repeatedly been shown that when dosages of silver ions (that is, charged silver particles or atoms such as UPOSH) are delivered to the location of the infection, these same ions are harmless to human cells.<sup>7</sup> In fact, it has been shown that silver ions produced electrically at the exact location of a very resistant kind of infection required only a few silver ions to do the job and caused no harm to the host cells.<sup>8</sup> According to the 80th edition of CRC’s Handbook of Chemistry and Physics, “While silver itself is not considered to be toxic, most of its salts are poisonous...”<sup>9</sup> This authoritative text is explaining that pure elemental silver by itself is not toxic to higher life forms and goes on to say that: “...Silver has germicidal effects and kills many lower organisms effectively without harm to higher animals.”<sup>10</sup> In 1994, Russell and his team of researchers conducted a comprehensive review of the medical literature that confirmed pure silver’s safety.<sup>11</sup> UPOSH is pure silver particles of the tiniest size that modern nanotechnology can make placed only in water. Because no silver compounds are present, it is not known to be toxic to humans.

Having shown that UPOSH is not harmful to humans, how effective is it? And how can it defend us from super-germs? For several years, scientists have been looking closely at silver as the best candidate to thwart the looming epidemic of super-germs. Silver belongs to the family of metals that include copper and gold. As you may already know, copper is an essential nutrient, and gold has been used widely to treat a form of arthritis. Another researcher by the name of Samuni stated that this family of metals are indispensable for bringing about a key reaction within our body’s defense system, the production of a chemical “radical” lethal to germs but harmless to human cells called superoxide radical.<sup>12</sup> If we have plenty of antioxidants in our diet, such as selenium, vitamin E and amino acids like N-acetyl cysteine, we are safe from any harmful effects from this family of metals. Germs, however, are not. Jansson confirmed silver’s ability to increase the production of another superoxide radical that you know as hydrogen peroxide, which is also lethal to germs but not harmful to healthy human tissues loaded with antioxidants.<sup>13</sup>

Silver’s anti-germ effectiveness extends even deeper. In 1989, Thurman and Gerba concluded that metal ions, such as silver ions, can destroy germs located both inside and outside of our human cells.<sup>14</sup> Once a germ has entered human cells—such as HIV, which invades white blood cells—it becomes more difficult for drugs to attack the infection without becoming toxic to those cells. It wasn’t until 2000 that the precise reason why silver worked so well was finally made clear by a researcher in China named Feng. This researcher and his team found that silver ions basically work like three antibiotics combined. Normally, any single antibiotic is able to attack only one of the germ’s three vulnerable targets: (a) the germ’s outer membrane, (b) its internal components, or (c) its delicate gene pool. When a germ becomes resistant, it has learned how to fortify the one target that the single antibiotic attacks. It becomes necessary to use several antibiotics to attack more than one of the germ’s targets simultaneously. As this newsletter has mentioned several times, as antibiotics travel deep into the intestinal track, they destroy the good “protective” bacteria and often cause secondary yeast infections that can make you chronically sick. Taking multiple antibiotics can compound these problems unless your doctor knows how to use probiotics wisely.

Silver ions work without causing a secondary yeast infection because pure silver particles of the tiniest sizes in nothing but water (such as UPOSH) will be absorbed in the stomach well before it can travel into the intestinal track. Therefore, the good bacteria that inhabit your intestinal track way down past the stomach, such as acidophilus, remain perfectly safe. As an added bonus, UPOSH simultaneously works against germs by attacking all three of the germ’s vulnerable targets. The rich amounts of silver ions found in UPOSH easily rupture a germ’s outer membrane when present in the right amounts, causing the germ’s vital internal components be exposed in the bloodstream to our white blood cells. While the white bloodstreams attack the inner components, UPOSH continues to

destroy these vital internal components by cutting up its vital enzymes. Furthermore, Feng showed that silver ions can easily reach into the nucleus of the germ, where its vital gene pool is located. Once silver ions combine with these genes, the genes become paralyzed, and the germ cannot replicate itself.<sup>15</sup> Most recently, another researcher found that silver, when tied to oxygen, can actually *electrocute* the germ which has turned out to be a powerful way to destroy viruses such as HIV!<sup>16</sup> It is very difficult to imagine that germs can develop resistance to the onslaught made possible with UPOSH when it is properly delivered to the locations of the infection.

Up until now we have been talking about bacterial germs. But what about the flu, one of the most common viruses that we face every year? What we really need is a broad-spectrum antiviral agent, because most upper respiratory tract infections are caused by viruses.<sup>17</sup> A number of emerging medical studies confirm the antiviral properties of silver ions both in the laboratory and in real human studies against some of the most formidable viral organisms, such as HIV and herpes.<sup>18, 19, 20</sup> In one study in 1991, Zhang and his team found that both zinc and silver ions strongly inhibited HIV infection.<sup>21</sup> In 1993, the Washington Post reported that laboratory tests showed a new Japanese silver ion powder not only inhibited but destroyed both HIV and herpes.<sup>22</sup>

Silver ions have also been shown to be effective in destroying fungal infections like candida. Beginning in the 1970's, several independent researchers found that silver ions easily destroy candida and other fungi.<sup>23, 24, 25</sup> In 1992, Simonetti updated these findings.<sup>26</sup> However, it was not until a pilot study during the mid 1990's that included human patients suffering from terminal AIDS that medical researchers amassed solid evidence regarding just how quick and effective silver ions can be in the treatment of candida as well as HIV infection. The process and results of this pilot study are explained next.

This pilot study was basically the equivalent of a "best case series," which are often used to evaluate cancer trials utilizing alternative medical treatments. Since holistic doctors sometimes consider it unethical to treat one group of patients with the real therapeutic agent, but treat the other group of suffering or near-death patients with an inactive placebo, the best case series was developed to handle this ethical dilemma. At the same time, "best case series" have not been generally accepted by the medical establishment when dealing with non-cancerous diseases, such as terminal AIDS cases, although there is no justification to support this point of view. In this study, nine individuals expected to die shortly from their illness were divided into two subgroups. One group suffered from a terrible candida infection in addition to the HIV virus. The other group suffered from both HIV and extreme malnutrition called "Wasting Syndrome." The studies were conducted at a medical facility in Lucha Contra el Sida, Honduras. Quoting from the study, "Said [silver tied to oxide in water] are capable of killing pathogens and purging the bloodstream of immune suppressing moieties [ISM or germ defenses] whether or not created by the AIDS virus (HIV); so as to restore the immune system."<sup>27</sup>

One of the most exciting aspects of both this study and one other AIDS study that used colloidal silver is that the severe blood disorders present in AIDS cleared up dramatically. For example, it is well known that certain populations of immune cells called CD4 and CD8 cells are greatly altered and deficient in people who have AIDS. Although silver ions may initially and temporarily worsen the status of the patient's blood cell counts, within 24 to 72 hours, the deficiency in the CD4 and CD8 cells was rapidly corrected. This is called the "rebound effect," and various aspects of it have been noted in authoritative medical literature over the past 80 years.

Silver ions still have more to offer to help stimulate our immune systems. In 1916, silver-based drugs were observed to increase the numbers of immune cells called leucocytes, while at the same time checking staphylococcus septicemia.<sup>28</sup> Bechhold reported that available evidence suggested silver ions could rapidly increase both red and white blood cells. He was careful to note that this increase only came about after an initial further decrease in such cells—another instance of the "rebound effect." He went on to say that this decrease was transitory and typically uneventful.<sup>29, 30</sup> It wasn't until 2001 that a single pilot study reported that high concentrations of a certain kind of colloidal silver induce the same

phenomenon—at first, a dramatic and sharp decrease of the good blood cells, but then a rebound effect rapidly kicked in which resulted in a total recovery.<sup>31</sup> The drop in blood cell counts to the extent that occurs with silver, however, is never life-threatening. In fact, it appears that the bloods cells die because they are loaded inside with germs that have turned the cell against itself, serving only the master invader and no longer your body.

On a related train of thought, certain vital functions of immune cells that destroy germs is the ability of the immune cells to swallow and digest germs. How fast or how slow these immune cells carry out this vital defensive action is called the Phagocytic Index. In 1909, the Journal of The American Medical Association was the first medical journal to point out that colloidal silver could favorably influence our immune cells' Phagocytic Index. What is remarkable about this article is that it was otherwise highly critical of the usefulness of the crude colloidal silver agents of its day.<sup>32</sup> Notwithstanding, several British medical journals highlighted this ability.<sup>33, 34</sup> Later in America, Bechhold produced a retrospective report in 1919 again highlighting silver ions' remarkable ability to stimulate the Phagocytic Index.<sup>35</sup> In the past few years, separate researchers such as Therba, Feng and Jansson already referenced above have brought forth evidence that the essential second part of the Phagocytic Index, where the germ is digested, is indeed greatly enhanced by silver ions.

Silver ions also may help certain types of immune cells called lymphocytes to more speedily travel and identify an immune target. This action is called the Opsonic Index.<sup>36</sup> The Opsonic Index can be induced from die-off of the germs, and this die-off can produce discharge symptoms called Jarisch-Herxheimer Effects (JHEs).<sup>37, 38</sup> Specific kinds of immune cells become highly excited by the residue of germ die-off, and respond by secreting inflammatory chemicals to help clear the debris from our bodies. It is becoming well-known that because UPOSH is so effective at inducing a rapid die-off effect, that this may be the cause behind silver ions' ability to bring on JHEs.<sup>39</sup> More work needs to be done to confirm this action of silver during JHE events. What is known at present is that such die-off debris may be at least partially rendered more inert by a secondary effect of silver ions.

This secondary effect involves silver's ability to become an antidote to at least two die-off debris molecules. One is bacterial toxin called staphylococcus endotoxin, and the other is a fungal endotoxin.<sup>40, 41</sup> Once silver ions rupture a bacterial staph infection or certain fungal infections, the remaining silver ions can begin to act as an antidote to the resulting poisons. Such endotoxins are likely a part of why JHEs can be so uncomfortable during the first 12 to 72 hours after treatment, but it appears that UPOSH can help check these.

In conclusion, UPOSH may be the best tool yet to come out of nanotechnology in the battle against the super-germ epidemic. UPOSH appears readily able to super charge and restore our immune systems, while at the same time dissecting bacterial, viral and even fungal germs. Perhaps most importantly, it may be the agent of choice to defend us against super-germs, as well as from the looming threat of the next influenza pandemic. UPOSH may be taken orally at the first sign of infection, with a recommended 1 teaspoon is ingested every 15 to 60 minutes on an empty stomach, up to 7 or more times daily. But your doctor can also administer UPOSH in other ways in advanced infectious states to help bring about a lasting recovery.

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