

# The Different Attributes of Colloidal Silver, Nano Silver and Ionic Silver



## History and background of silver

The precious metal silver has long been known for its antibacterial, antiviral, anti-fungal, and anti-parasitic benefits. From coins in milk to silverware for eating, the use of silver has been a predominant staple for bio protective needs throughout history.

The introduction of antibiotics as a medicine has largely overtaken the use of colloidal silver solutions as the common treatment for bacterial infections. However, colloidal silver solutions, as well as advanced technologies using silver nano particles of differing sizes, shapes, and concentrations, are making a comeback, showing amazing results in many studies done over the last 20 years. The reality of antibiotic resistant bacteria has brought awareness of this old technology back to the forefront.

Everyday people attempt to use DC current and some silver wire in an attempt to make their own colloidal solutions, without the proper scientific understanding. Consequently, they consume

large amounts of unsafe silver particles. More than one million people have suffered from the tell-tale effects of Argyria, the permanent toxic condition of blue or grey-colored skin from the consumption of poor quality silver solutions.



**Many of the harmful effects of silver shown by some studies are due to the chemicals used in the production of the silver, not the silver itself.**



So, what processes make colloidal silver or even nano silver particles safe? There is so much data from hundreds of studies that it is difficult to boil down which products are harmless or harmful, and which products are effective or not because of all of the variables in processing.

Silver solutions have long been believed safe for use inside the body, but this turns out not to be entirely true.

For instance, Ionic silver and silver nanoparticles have the ability to interact with cellular activities like metabolism, cell signaling, protein synthesis, membrane integrity, cellular management, and many other cellular processes. Its ability to interact makes it both good and bad.

Wading through all of the pertinent requirements for a bio protective silver solution that doesn't damage cells can be a difficult prospect. The following attributes seems to be the most important characteristics that a potential silver solution must check off:

### **Size...7-10 nm. Check.**

The manufacturing process produces silver particles from sizes you can see all the way down to the size of atoms.

As it turns out, several studies suggest the most interactive silver nano particle size is between **5nm** and **20nm**. Particles smaller than 5nm, and on down to ionic silver, can cause interference with cellular mechanisms and cause free radical damage in healthy tissue. Particles larger than 160 nm are not interactive with bacteria and

viruses and tend not to be effective in the body. Particles under 200nm are not stable and want to increase or reduce their size.

### **Shape...Spherical. Check.**

Studies also show the shape most effective for bio protection is **spherical**. There are many different shapes, but spherical, when made at 7-10 nm, also resonates a frequency known as "**membrane bending energy**" that allows the silver nano particle to attract to and attach to many harmful elements in the body. This sort of resonant charge not only attracts itself to the bacteria and viruses, but also ignores the good bacteria and normal cells from interaction.

### **Membrane bending energy... Check.**

### **Purity...Check. Stability... Check.**

Most all of the manufacturing processes for silver solutions require harmful chemicals to maintain stability in the reducing of the particles. A particle sized smaller than 160nm, which is the most bioactive, is also the least stable.

So, a manufacturing process that only uses silver and water, and uses a special process to stabilize the product, is required to have a safe silver.



## In conclusion

Based on the conclusions of the studies done on silver solutions, we would expect that AVINI Health's spherical nano silver would have the same benefits. Why? Because ours is free of harmful stabilizing chemicals and is the right size, shape and charge to have.



## Anti bacterial properties

Because of the size, shape and charge of the nano silver particles, a frequency is emitted at 850 to 950 terahertz. It is believed this causes the bacteria to 'unzip', spilling out it's contents and dying.

## Anti-viral properties

Nano silver is the correct size and shape to attach to the GP120 receptor on viruses, removing their ability to attach to your cell's receptors. Due to its size and shape and membrane bending energy, the silver nano particles may attach to the virus glycoprotein receptors, blocking the ability of reverse transcriptase mechanisms of viral mRNA transfer.

More studies are needed to identify all mechanisms for virus inactivation by silver nano particles.

## Anti-parasitic properties

Parasites hide in the body and release thousands of eggs and excrete chemicals that weaken the immune system. Nano silver is the correct shape & size to interact with the parasite and make the body a non-hospitable host.

## Anti-fungal properties

Nano silver disables mold spores and mycotoxins that hide in our bodies and cause a hyper-immune response.



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## AVINI Health's spherical nano silver checks all the requirements.

Our patented special process creates a 2 atom thick tetrahedral coating of silver oxide around the pure silver particle, bonding it with an electron on the oxygen in the surrounding water. This process stabilizes the silver particles at the exact size and shape and creates a stable concentrated solution that doesn't require any of the hundreds of other potential harmful chemicals used to stabilize other silver products.

When choosing a silver product for bio protective use, it is important to choose the most safe, effective, and economical product that has been proven to leave the body and not interfere with cellular processes.

