

## NANO SILVER EXPLAINED

**Nano-Silver** is pure de-ionized water with silver (Ag) in suspension. Approximately 80% of the silver is in the form of metallic silver nano-particles. The remaining silver is in ionic form. Though similar to colloidal silver, generally, a colloid is a suspension of particles of from 10 nm to 1 micron in diameter and the **silver particles in Nano-Silver are less than 2 nm in diameter** and therefore too small to be considered in "colloidal" suspension. They are rather, in a "nano-suspension," a much more stable state.

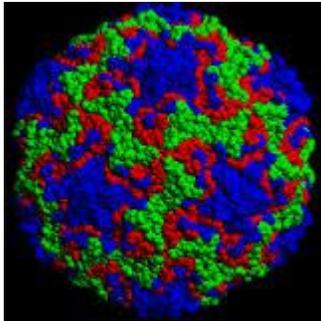
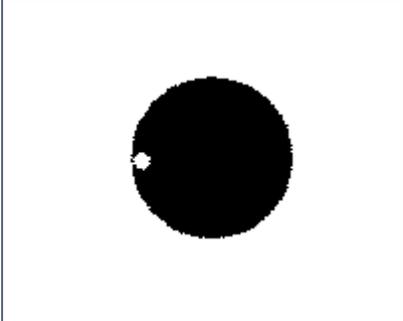
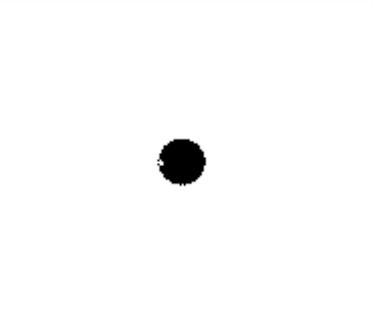
Because of the small size of the particles, the total **surface area of the silver exposed in solution is maximized**, resulting in the **highest possible effect** per unit of silver. As a result, the 20 PPM concentration of silver in Nano-Silver provides **more effectiveness inside the body** than silver solutions in the colloidal class, of many times greater concentration.

Another characteristic of Nano-Silver which amplifies its effectiveness inside the body above that of common colloidal silver products is the **high percentage of silver in particulate (metallic) form**. This relationship is key because ionic silver becomes silver chloride in the stomach or bloodstream. Silver chloride is only slightly soluble and far less effective than metallic or ionic silver. Were it not for this chemical reaction, ions would be preferable to metallic particles as they are in vitro. **Only metallic particles survive the hydrochloric acid of the stomach** to remain effective inside the bloodstream and body tissue. Most colloidal silver solutions are no more than 5-10% particles with the remainder in the form of ions.

Combining **high particulate concentration with ultra small particle size** results in a silver solution which is **without peer**. Doing the math on a comparison between Nano-Silver and common colloidal silver solutions reveals a **striking contrast in particle surface area**, and therefore, effectiveness. Comparing the **best** common colloidal silver product (a theoretical formula of 20 PPM silver, 10% particles of 10 nm), we get an 8 fold advantage for percent concentration for Nano-silver and a 5 fold advantage for particle size. Multiplying the two factors to arrive at the difference in potency yields **an astounding advantage of 40 times**. This calculation does not take into account the advantage of small particles from the standpoint of penetration into capillaries, cells, pathogens and "backwater" body tissues. Though not readily calculable, mathematically, a knowledge of the body and its structure brings readily to mind the **great advantage** of particles a tenth the size of those of other products.'

With an **advantage of 40 to 1 in potency** per unit of silver, one can choose to use less of the product or expect better results or a combination of the two. Because of the potency of Nano-Silver, one can take less than the 350 mcg/day allowed by EPA as a maximum daily reference dose and **still maintain a robust component of bio-available silver in the bloodstream**. We have experienced very effective prophylactic benefit from 1-2 teaspoons/day of Nano-Silver over several years of usage by **10's of thousands of customers**. That equates to 100-200 mcg/day, well **under the amount referenced by EPA** for public water supplies in the US. That enables users to be as secure with daily use of Nano-Silver as a dietary supplement as one can be with EPA approved drinking water. **The properties of Nano-Silver, then, completely put to rest any concern with Argyria** or other perceived toxicity concerns.

To illustrate the **particle size advantage of Nano-Silver** over pathogens and over the next best silver solutions (10 nm colloidal silver), consider the illustration below. In the left panel is a rhinovirus, the pathogen which causes colds and one of the smallest viruses. In the center panel is a 10 nm particle from a very good conventional colloidal silver. In panel 3 is a representation of a Nano-Silver particle.

		
(1) Rhinovirus 25 nm	(2) 10 nm particle	(3) 2 nm Nano-Silver particle

It is easy to see the **particle size advantage of Nano-Silver** in this example. A staphylococcus bacteria is roughly 40 times the size of the Rhinovirus. It is an easy victim of Nano-Silver.

Only in the last few years has nano-technology begun to evolve into a valuable science. Only in the last few years has the technology existed to produce this cutting edge silver suspension. Only now has silver arrived as the natural immune system assistant it was in the early days of mankind when it was plentiful in its metallic form in ground water. For optimum function of body immunity, everyone needs Nano-Silver circulating in their bloodstream.