



Silver – the Traditional Antiviral and Antimicrobial Agent

Silver is known as an effective antimicrobial agent and has therefore been used in medicine for centuries. This article explains where the antimicrobial effect comes from and why silver is experiencing a renaissance today.

The idea of using metals, including silver, against microorganisms must be considered ancient. Long before the introduction of antibiotics in the 1940s, people relied on the curative properties of silver. Hippocrates, Paracelsus and later Hildegard von Bingen recommended it as an essential health preservative. Thus, nobles and wealthy citizens' silverware and silver cutlery had a convenient effect: it protected them from germs. It was also common to put a silver coin in the milk jug to keep the milk longer fresh.

Silver ions damage viruses and bacteria

What exactly makes silver so effective against viruses, bacteria and fungi is still subject to ongoing research. In most of its applications, silver's mode of action is presumed to be dependent on silver ions (Ag⁺) that come into contact with the microorganisms, thereby interacting directly with viruses and bacteria. These silver ions are reactive, damaging the cell wall of the microbes and destroying enzymes that are necessary for the germs to survive. Unlike antibiotics, bacteria cannot become resistant to these effects.

Silver in many everyday objects

That is precisely why silver is used today in its most refined form as macrosilver, microsilver and nanosilver in numerous everyday products. For example, as embedded macrosilver in sportswear, in packaging and lacquers. And as nanosilver in coatings for refrigerators, various kitchen equipment, or in the medical sector.

In drugstores, we can find wound patches with silver and face masks, which are supposed to increase their protective effect against viruses and bacteria. Soaps and creams also contain so-called colloidal silver.

Now silver also protects eyeglass wearers

The latest application in virus protection comes from the ZEISS laboratories. Based on novel, innovative and patented coating process technology, ZEISS DuraVision AntiVirus Platinum contains silver as bound clusters of nano scale dimensions within the anti-reflective layer stack. From the bound silver depots within the coating silver ions migrate to the lens surface. If bacteria or viruses get onto the lens surface, they are deactivated by the [ZEISS DuraVision AntiVirus Platinum UV coating](#).¹

¹ Tested by ISO 21702:2019(E) for enveloped viruses and tested by ISO 22196:2011(E) for Gram-negative and Gram-positive bacteria. Efficacy proven after 24 hours as defined by ISO.



This protection is completely invisible thanks to the process developed by ZEISS. Silver is thus experiencing a renaissance, giving eyeglass wearers more prevention in everyday life and a new contribution to lens hygiene.