Note recent important antiviral silver and copper references


"Safety of Colloidal Silver" at American Chronicle at http://www.americanchronicle.com/articles/view/49272


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Nand S; Sengar GK; Nand S; Jain VK; Gupta TD “Dual use of silver for management of chronic bone infections and infected non-unions”, GSVM Medical College, Kanpur, J Indian Med Assoc, 94(3):91-5 1996 Mar

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Ohno, Y. The Effects of Magnetised Mineral Water on Memory Loss Delay in Alzheimer’s Disease by, Journal of Center for Frontier Sciences.


Russell AD; Hugo WB “Antimicrobial activity and action of silver”, Welsh School of Pharmacy, Prog Med Chem, 31():351-70 1994, University of Wales College of Cardiff, U.K

Sanderson-Wells T. (1916) "A Case of Puerperal Septicemia... Treated with... Collosol Argentum" Lancet, Feb. 16, p.258.


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White Thomas J. , “Swimming Pool Disinfection: Efficacy of Copper/Silver Ions with Reduced Chlorine Levels,”, (Journal of Environmental Health ); 05-01-1999.


Williams N; Gardner I “Absence of symptoms in silver refiners with raised blood silver levels”, Occup Med (Oxf), 45(4):205-8 1995 Aug


Links:
"Colloidal silver gaining ground as a proven, effective antibiotic remedy", July 26, 2005 by Dani Veracity, at http://www.naturalnews.com/010038.html


Abstract: All chronic wounds are colonized by bacteria. Increased bacterial burden or critical colonization can be deleterious to wound healing. In view of the ubiquitous presence of microbes, the clinician must discern whether bacterial balance (contamination or colonization) or bacterial damage has occurred. Silver is a common topical agent used to combat bacterial burden in chronic wounds. Given the wide array of silver-related wound care products, it is difficult to determine which product should be used. By reviewing relevant scientific evidence, we propose an acronym SILVER© to address the key contentious issues. These issues are summarized as SILVER: Signs of bacterial damage, the need for Ionic silver, Log reduction of bacteria, Vehicle (importance of moisture balance), Effect on normal cells, and Bacterial Resistance. at www.surgicaltechnology.com/17-050-WH-Abstract.html


Water Science and Technology 35:11-12 (1997) 87-93 - R. Pedahzur et al. - Silver and hydrogen peroxide as potential drinking water disinfectants: their bactericidal effects and possible modes of action


Accumulation of copper and silver onto cell body of and its effect on the inactivation of Pseudomonas aeruginosa

J Water Health - (2006) - David Collart et al. - Efficacy of oligodynamic metals in the control of bacteria growth in humidifier water tanks and mist droplets

Silver Institute at www.silverinstitute.org

Ions are positive, particles are negatively charged at http://www.silver-colloids.com/Papers/IonsAtoms&ChargedParticles.PDF

"Scientists to tackle illness (MRSA) with 'silver nanobullet' at http://www.physorg.com/news63004522.html


"Nanowires common in bacteria? Microbes may use electrically conductive nanowires, 10-20 nm diameter, to help transport electrons, (could be inactivated by silver nanoparticles)" at http://www.thescientist.com/news/daily/23924/

"Cadbury failed to inform food watchdogs about salmonella contamination at one of its factories, despite nine cases of the bacterium being identified in chocolate over a four-month period", could have been prevented by silver nanoparticles, at http://www.telegraph.co.uk/news/main.jhtml?xml=/news/2006/06/25/ncadbury25.xml&DCMP=EMC-new_25062006.

"Efficacy of oligodynamic metals (silver and copper) in the control of bacteria growth in humidifier water tanks and mist droplets" by David Collart, Sharifeh Mehrabi, Liah Robinson, Bryan Kepner and Eric A. Mintz, Department of Biological Sciences, Clark Atlanta University, Atlanta, GA, 30314, USA, Tel: +01 404 880 6854, Fax: +01 404 880 6640, dcollart@cau.edu, J. Water Health (2006) 149-156 at http://www.iwaponline.com/jwh/004/jwh0040149.htm

"Colloidal Silver Ceramic Filters for Household Water Treatment; Porous ceramic filter coated with colloidal silver • Ceramic material provides physical filtration • Silver acts as a bactericide" at www.who.int/entity/household_water/resources/Elliot.pdf Solutions Benefiting Life Institute Ltd.


The bactericidal effect of silver nanoparticles "Our results indicate that the bactericidal properties of the nanoparticles are size dependent, since the only nanoparticles that present a direct interaction with the bacteria preferentially have a diameter of ~1–10 nm" at http://www.iop.org/EJ/abstract/0957-4484/16/10/059

Antimicrobial powder coatings at: http://www.pfonline.com/articles/020401.html


Bugs trigger attack on heart, New Scientist vol 180 issue 2422 - 22 November 2003, page 20

Heart-breaking bugs; Infections trigger heart disease?, New Scientist vol 169 issue 2284 - 31 March 2001, page 18


"The Role of Antimicrobial Silver Nanotechnology”, A new silver nanotechnology chemistry can prevent the formation of life-threatening biofilms on medical devices. by Bruce Gibbins and Lenna Warner at Medical Device Link, August, 2005 http://www.devicelink.com/mddi/archive/05/08/005.html

"Metallic elixir: Silver may fight what ails you" at http://www.amsilver.com/dnews1.htm

"BACTERIA TESTING of a broad spectrum antimicrobial agent" at http://vitaminlady.com/Special/ASAP_%20SilverSolution.asp

"Gold Powder" at http://www.twinflamedistribution.com

"Scientists work to block bacterial communication by zapping blood" at http://www.msnbc.com/news/858649.asp#BODYor at bacterial communities

Colloidal Silver Database Web Site at http://www.silvermedicine.org/

University study documents the results of a quality colloidal silver product tested against a wide range of illness-causing pathogens. The study proves that colloidal silver is effective as an antibacterial agent against Staphylococcus, Candida, Salmonella and Pseudomonas in laboratory studies (in-vitro) at http://www.silvermedicine.org/colloidalsilverstudytexas.html

Article on CS http://www.curezone.com/foods/silver.html

"Brigham Young University study shows colloidal silver is as good as penicillin" at http://www.amsilver.com/dnews2.htm

"Metalllic elixir: Silver may fight what ails you" at http://www.amsilver.com/dnews1.htm

"BACTERIA TESTING of a broad spectrum antimicrobial agent" at http://vitaminlady.com/Special/ASAP_%20SilverSolution.asp

There are thousands of links and several chat lines on the Internet about Colloidal Silver, such as www.silvermedicine.org or colloidalsilver2@yahooogroups.com or silver-digest-request@eskimo.com


"Scots firm unveils lasting anti-MRSA soap containing silver" at http://news.scotsman.com/topics.cfm?tid=303&id=882602006

"Effects of Silver on Wound Management" by Robert H. Demling, MD; Professor of Surgery, Harvard Medical School; Director, Burn-Wound Center, Brigham & Women’s Hospital; Leslie DeSanti, RN.; Director, Burn and Wound Care Program, Health South Braintree Rehabilitation Hospital, Research Associate, Brigham & Women’s Hospital, Boston, Massachusetts at WOUNDS. Demling RH, DeSanti L. Effects of silver on wound management. WOUNDS 2001;13(1 Suppl A):1–15. "addition to antibacterial properties, there appears to be a prohealing property to silver". http://www.2012.com.au/Colloidal_SilverB.html

"Researchers Examine the Environmental Effects of Silver Nanoparticles: Now used in bandages, clothing, cosmetics, car wax, laundries, plastic tubing in beverage plants, hospital operating rooms, toys, food preservative, sewage treatment, drinking water" at http://www.physorg.com/news97944800.html

"Colloidal silver gaining ground as a proven, effective antibiotic remedy" at http://www.newstarget.com/010038.html
"Garments treated with metallic silver nanoparticles prevent colds and flu" at http://www.physorg.com/preview97384337.html

"Antibacterial silver products finally begin to emerge after years of FDA oppression" at http://www.newstarget.com/010761.html

"EPA uses nanotech regulation ploy to target colloidal silver while ignoring all other nanotech particles" at http://www.newstarget.com/021231.html

"Colloidal silver antibacterial liquid sprayed on Hong Kong subways as public health measure" at http://www.newstarget.com/020851.html

"A Small Supplement Company's Fight for Health Freedom" The persecution of Utopia Silver began five years or so ago. It is Utopia Silver’s contention that the actions to restrict them are unconstitutional restraints on the freedom of commercial speech at http://www.naturalnews.com/023719.html


Laboratory results of a sample of our meso-silver and meso-gold showing particle size range from 1 to 8 nanometres at concentration of 24.2 ppm using high frequency pulse modulation, alternating polarity and constant current. Particles of less than 1 nanometre (such as mono-atomic) are likely present but beyond the range of the measuring equipment. Bacteriological analysis shows killing of Methacillin Resistant Staph Aureus (MRSA) in 8 minutes. MRSA is lethal bacteria commonly found in hospitals.

Colloidal Silver Bacteriology Study Results from http://www.silver-colloids.com/Pubs/biostudies.html

Challenge tests were performed on ten pathogens listed below. The testing was performed by EMSL Analytical, Inc. Microbiology Division. The tests were designed and conducted by Lori L. Daane, Ph.D., Director of Microbiology and Elizabeth Lewis Roberts, Ph.D., Microbiologist-Special Projects.

Aspergillus niger
Candida Albicans

Trichophyton rubrum

Escherichia coli

Escherichia coli 0157H7 (hemorrhagic e.coli)

Vancomycin resistant Enterococcus faecalis (VRE)

Methicillin resistant Staphylococcus aureus (MRSA)

Pseudomonas aeruginosa

Vancomycin resistant Staphylococcus aureus (VRSA)

Staphylococcus aureus

Safety of Silver

The World Health Organization’s (WHO) guidelines for drinking water quality indicate that there are no adequate data with which to derive a health-based value for silver in drinking water. These guidelines state that, “where silver salts are used to maintain the bacteriological quality of drinking-water, levels of silver up
to 0.1 mg/liter (0.1 parts per million) can be tolerated without risk to health.” Silver is regulated by US Environmental Protection Agency (EPA) National Secondary Drinking Water Regulations.

The maximum permissable contaminant level of ionic silver salts in public water supplies is 0.1 mg/liter, which is a non-enforceable guideline based on possible cosmetic effects, such as skin discoloration. The safe level for non-ionic silver is much higher.

Surgical wound dressings; The following contain silver

Acticoat 7, Acticoat Absorbent, Acticoat Burn, Acticoat moisture control, Actisorb, AlgideX Ag, Aquacel AG, Arglaes Film, Arglaes Island, Arglaes powder, Calgitrol Ag (foam), Calgitrol Ag Plus, Contreet Hydrocolloid, Contreet® Foam, Covaclear Ag, Flamazine, Silvadene, SSD Cream, Maxorb Extra Ag, Mepilex Ag, Optifoam Ag, PolyMem Silver, Prisma, Silvadex Ag, Silvadex Gel, Silvadex Perforated, Silvadex Sheet, Silvadex Site, Silver Derm, Silvercel, Silverlon calcium alginate, Silverlon island wound dressings, Silverlon negative pressure dressing. Silverlon Wound Packing Strips, Silverlon wound pad dressings, Tegaderm Ag mesh, Urgotul SSD.

Ion versus Particles:


Safety of Colloidal Particulate Silver versus risks of Ionic Silver:


This article reports the clinical findings in a work force of 30 individuals who were exposed to silver nitrate and silver oxide. Six individuals had argyria and 20 had argyrosis (deposition of silver in the eye). Measurements of blood silver levels were included as part of the examination. The results of this examination generally support the benign nature of argyria, although the question of silver causing a decrement in kidney function and night vision is not settled. Periodic slit lamp examinations as well as monitoring of silver air concentrations are necessary to assure that engineering controls are actually limiting worker exposure to ionic silver salts. PMID: 469606 [PubMed - indexed for MEDLINE]

Silver in Food As reported by the Silver Institute, First Quarter 2004
AgIONS Technologies incorporated received approval by the FDA in October 2003 for use in the food industry. The FDA informed AgIONS Technologies that the product has been added to the FDA's list of food contact substances. The AgIONS Type AK product is comprised of 5% silver contained within an inert crystalline carrier. When subject to small amounts of moisture, AgIONS begins to release silver ions, which then act to eliminate bacterial growth on treated surfaces. AgIONS is specifically designed and engineered as a surface treatment system, with wide applications in the food processing industry. Since most food processing plants have a zero tolerance policy for bacterial spoilage, the use of silver to treat surfaces and equipment used in food processing will greatly reduce bacterial growth, even under the most challenging food processing conditions.

BOOKLETS FOR DISTRIBUTORS AVAILABLE in bulk from Biophysica or Amazon:

"Colloidal Silver: The Wonder Cure Time Forgot" by Tonita d'Raye, ISBN 1-889887-03 Price $5 US


"Natural Alternatives to Antibiotics" by Ray C. Wunderlich MD, Page 24, Keats Publishing Inc. Price $5 US

'The New Silver Solution" by Dr Kenneth Friedman, Ph.D., 2000 price $6 US

"Nature's Silver Bullet" by Dr Howard Fisher B.Sc., B.Ed., D.C.  115 pages, $12.95 US

Laboratory results suggest that Colloidal Silver solution is a broad spectrum antimicrobial agent—it is able to effectively stop the growth of, and in fact kill, a variety of bacteria at http://www.amsilver.com/bacteria.htm Specifically Staphylococcus aureus (Pneumonia, eye infections, skin infections (boils, impetigo, cellulitis, and post-operative wound infections), toxic shock syndrome,
meningitis, food poisoning, osteomyelitis, and many others) inhibited @ 2.5 ppm and killed @ 5 ppm. 1/22/99 BYU Report.

Shigella boydii (Bacillary dysentery—characterized by severe cramping abdominal pain and bloody diarrhea) inhibited @ 1.25 ppm and killed @ 2.5 ppm. 1/22/99 BYU Report.

Salmonella arizona (Food poisoning, etc.) inhibited @ 2.5 ppm and killed @ 5 ppm. 1/28/99 BYU Report.

Salmonella typhimurium (Food poisoning and enteric fever) inhibited and killed at a concentration of 2.5 ppm. 6/7/99 BYU Report.

E. coli (Food poisoning, urinary tract infections, traveler’s diarrhea, diarrhea in infants, respiratory tract infections, and wound infections) inhibited and killed @ 2.5 ppm. 1/22/99 BYU Report.

Haemophilus influenzae (Otitis media (ear infection), pneumonia, meningitis, throat and sinus infections (including epiglottitis in children and sinusitis), and suppurative arthritis in children) inhibited and killed @ 1.25 ppm. 1/22/99 BYU Report.

Enterobacter aerogenes (wound infections, urinary tract infections, bacteremia, and meningitis) inhibited and killed at a concentration of 2.5 ppm. 6/7/99 BYU Report.

Enterobacter cloacae (causes illnesses similar to the E. aerogenes) inhibited and killed at a concentration of 5 ppm. 6/7/99 BYU Report.

Klebsiella pneumoniae (lower respiratory tract infections, nosocomial infections (infections spread in hospitals), urinary tract and wound infections, and bacteremia) inhibited and killed @ 2.5 ppm. 1/28/99 BYU Report.

Klebsiella oxytoca, (Similar to those infections caused by K. pneumoniae) inhibited and killed at a concentration of 2.5 ppm. 6/7/99 BYU Report.
Pseudomonas aeruginosa (severe burn and wound infections, keratitis, pneumonia, meningitis, nosocomial infections, urinary tract infections, etc.) inhibited @ 2.5 ppm and killed @ 5 ppm. 1/22/99 BYU Report.

Streptococcus pneumoniae (pneumonia, meningitis, sinusitis, otitis media (ear infection) inhibited @ 2.5 ppm and killed @ 5 ppm. 4/21/99 BYU Report.

Streptococcus pyogenes (skin infections, upper respiratory infections (i.e. strep throat) impetigo, hospital-acquired infections, scarlet fever, etc.) inhibited and killed @ 1.25 ppm. 1/22/99 BYU Report.

Streptococcus faecalis (Urinary tract infections, endocarditis, wound infections, etc.) inhibited @ 2.5 ppm and killed @ 5 ppm. 1/22/99 BYU Report.

Streptococcus mutans (A major cause dental plaque and tooth decay etc.) inhibited and killed @ 5 ppm. 2/3/99 BYU Report.

Streptococcus gordonii (Tooth decay, also implicated in infective endocarditis-an infection of the heart valves) inhibited and killed @ 5 ppm. BYU Report 2/12/99.

Selected Abstracts

"Assessment of the Antiviral Properties of Zeolites Containing Metal (silver & copper) Ions" Kelly R. Bright, Enue E. Sicairos-Ruelas, Patricia M. Gundy and Charles P. Gerba1 Department of Soil, Water and Environmental Science, The University of Arizona, Building 38, Room 429, Tucson, AZ 85721, USA, December 2008 Food and Environmental Virology

Abstract The antiviral properties of zeolite (sodium aluminosilicate) powders amended with metal ions were assessed using human coronavirus 229E, feline infectious peritonitis virus (FIPV), and feline calicivirus F-9. Zeolites containing silver and silver/copper caused significant reductions of coronavirus 229E after 1 h in suspension. The silver/copper combination yielded a >5.13-log10 reduction within 24 h. It was also the most effective (>3.18-log10) against FIPV after 4 h. Other formulations were ineffective against FIPV. On plastic coupons with incorporated silver/copper-zeolites, >1.7-log10 and >3.8-log10 reductions were achieved for coronavirus 229E and feline calicivirus within 24 h, respectively. Silver/copper zeolite reduced titers of all viruses tested, suggesting that it may be effective against related pathogens of interest [i.e., SARS coronavirus, other coronaviruses, human norovirus (calicivirus)]. Of note, it was effective against both
enveloped and nonenveloped viruses. Metal-zeolites could therefore possibly be used in applications to reduce virus contamination of fomites and thus the spread of viral diseases.

“Dual use of silver for management of chronic bone infections and infected non-unions” Nand S; Sengar GK; Nand S; Jain VK; Gupta TD, GSVM Medical College, Kanpur, J Indian Med Assoc, 94(3):91-5 1996 Mar

Abstract: Broad spectrum antibacterial effect of electrically generated silver ions has been fully established. Present work consists of clinical evaluation of beneficial antibacterial effect of silver ions liberated electrically with the help of locally manufactured power pack in 920 proved cases of chronic osteomyelitis with or without pathological fractures and septic non-unions. Wound debridement, silver iontophoresis, proper immobilisation and subsequent wound care yielded not only control of bone infections in 85% cases, but also produced healing of pathological fractures in 83% patients. Results remained unaffected by age or sex of patient, type of bone involved, duration of previous illness or type of previous treatment. Follow-up varied from 6 months to 10 years. This technique is likely to open a new chapter in treatment of chronic resistant bone infections and septic non-unions due to open fractures particularly in developing countries of the world.

Disclaimer: The information conveyed here is based on records and research for your information which is for horticultural, educational, sacramental and research purposes only. No statement should be taken as medical advice. It is not claimed or implied here that Mono-atomic GOLD or SILVER-MAX or Colloidal mineral waters