

Honey May Be a Natural Way to Beat Bacteria

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STORY AT-A-GLANCE

- › Lab tests have shown Manuka honey to be a powerful inhibitor of bacteria that develop on medical devices such as catheters, of which 100 million are sold worldwide every year
- › Up to 90% of urinary tract infections (UTIs) are caused by Escherichia coli (E. coli) bacteria, but other infections also leave patients open to life-threatening health problems
- › Manuka honey has proven to be powerful against E. coli, even when diluted to 3.3%. Unlike other “therapeutic” compounds doctors prescribe, bacteria have not yet developed a resistance to Manuka honey

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If you've ever heard of Manuka honey (scientific name *Leptospermum scoparium*), perhaps you're already aware that it's been used for millennia as a remedy for inflammation and bacterial infections.

A study at the University of Southampton in the U.K. reported that the honey from Down Under could be useful for decreasing the risk of infections and helping to prevent pathogenic bacterial colonies known as biofilm from developing on catheters and other medical devices.

Catheters are generally used to either monitor how much urine a patient releases or to drain it. According to *The Journal of Pathology*:

“Indwelling medical devices harbor biofilms which have been shown to cause infections and act as reservoirs for pathogens. Urinary catheters are often in place for considerable periods of time and are susceptible to both encrustation and biofilm formation.

Strategies for minimizing biofilm occurrence underpin an active research area in biomedicine. Manuka honey has, (among other things), well-established antibacterial properties.”¹

The study entailed placing Manuka honey with bacterial cultures including Escherichia coli (E. coli), the cause of up to 90% of urinary tract infections (UTIs),² and Proteus mirabilis, bacteria that under certain conditions can escape from the intestine and cause a urinary tract infection,³ to observe the honey’s effect on biofilm development. Medical News Today reported:

“After 72 hours, the team found the highest dilution of honey – 16.7% – had reduced the stickiness of bacteria by 77%, and all other dilutions had reduced stickiness by at least 70% by that point.

In terms of biofilm growth, the researchers found all concentrations of Manuka honey had reduced growth after [four] hours; the highest concentration decreased growth by 38% after [four] hours, increasing to 46% after 24 hours.”⁴

Manuka Honey in the Real World

Part of the protocol in the study involved diluting the Manuka honey to various concentrations and testing it against different bacteria. Even at the weakest level, 3.3%, it was still able to slow down biofilm development and prevent bacteria from clustering.

Researchers concluded that in all cases, the honey “significantly inhibit(ed) bacterial attachment” – at least it did in lab tests.

In real life, biofilms can become **hotbeds of infection** that make the initial medical problem pale in comparison. Around 100 million catheters are sold around the world

every year, so they're a natural purveyor of UTIs and other infections.

Scientists still want to conduct further testing, however, before they advise using honey on catheters in real hospital settings, but as a Time article noted:

*"Antibiotic resistance is a major problem worldwide. Bacteria can naturally become resistant to drugs used to treat it, and widespread use of antibiotics through the years in medicine and agriculture have contributed to the problem."*⁵

They say that doing the same thing over and over and expecting a different result is the definition of insanity, yet doctors keep applying and prescribing the same ineffective methods and drugs to and for their patients with UTIs and other health problems, often making their diseases, pain and suffering worse. And all the time, honey was right under their noses.

Lack of Research Doesn't Minimize Manuka Honey's Effectiveness

As impressive as the clinical trials on Manuka honey appear to be, some medical entities claim lack of evidence that it would be useful in medical settings, as it hasn't been "proven" in the right settings.

In the face of resounding success in the trial, the Southampton researchers could only assert that the honey was as valuable as any other substance they might have investigated. In fact, unlike some other compounds they looked at (which are, incidentally, still in use), bacteria have not yet developed a resistance to Manuka honey.

The study concluded that, "In fact, no drug or dressing receives ringing endorsement, suggesting that the field is under-investigated or difficult to address." A similar study at Cardiff in the U.K. in late 2011 was found to have very similar results. Microbiology Society reported:

"Manuka honey has broad spectrum antimicrobial activity and its use in the clinical setting is beginning to gain acceptance with the continuing emergence

of antibiotic resistance and the inadequacy of established systemic therapies; novel inhibitors may affect clinical practice.”⁶

Mixing Manuka honey and *Streptococcus pyogenes* bacteria together netted “significant cell death and dissociation of cells from the biofilm.” This trial offered further evidence of the advantages of this honey for topical wound application.⁷ According to Oxford Journals:

*“Since the late 1980s, a resurgence of severe invasive infections due to *Streptococcus pyogenes* (also known as group A streptococci) has been reported worldwide.*

The two most severe invasive manifestations are streptococcal toxic shock syndrome (STSS) and necrotizing fasciitis, both of which are associated with high morbidity and mortality.”⁸

Honey’s potential for natural defenses and disease treatment could be a simple solution that more of the medical world – as well as anyone wanting to apply natural treatments at home – should pay attention to.

Honey – Naturally Antiseptic, Antibiotic and Anti-Inflammatory

The flower nectar you use for food, also known as honey, is concentrated through dehydration inside beehives and “has a very complex chemical composition that varies depending on the botanical source,” one study says.

“Honey has been reported to have an inhibitory effect on around 60 species of bacteria, some species of fungi and viruses.

Antioxidant capacity of honey is important in many disease conditions and is due to a wide range of compounds including phenolics, peptides, organic acids, enzymes and Maillard reaction products.

Honey has also been used in some gastrointestinal, cardiovascular, inflammatory and neoplastic states.”⁹

Depending on their origin and providing they comply with regulatory standards in the U.K., the Food and Drug Administration (FDA) in the U.S. and elsewhere, a wide range of “medical grade” honey-based products are currently available.

However, only Manuka honey was used in the Southampton trial and, since then, tests of similar scale. This darker-than-regular honey is specifically collected from bees that have been feasting on the Manuka tree, found primarily in New Zealand. Dr. Bashir Lwaleed, a member of the Southampton team, noted that his was the first team to propose using Manuka honey for decreasing infection risk and helping to prevent biofilm development on catheters.

Still, some scientists and wound-care experts are waiting for better evidence. BBC Health reported the response from wound care expert Dame Nicky Cullum, Ph.D., who looked at the evidence and responded, “People like things that are natural, but they are not always more effective.” As reported in BBC Health, she said:

“This work from Southampton is at a very early stage so we shouldn't get too excited. But it is an interesting avenue that is worth pursuing ... Obviously, we'd need more studies to check that it wouldn't irritate the bladder or cause any other problems.”¹⁰

Honey Helps

You may have already learned that honey is very effective for sore throats and coughs. It forms a protective film over the area, relieving inflammation and irritation, making it a bona fide demulcent, according to the World Health Organization (WHO).¹¹ It's even been shown to be helpful for genital herpes¹² and cancer.

Burns, cut and bug bites of all kinds have been successfully treated with raw honey for the last few thousand years. Before penicillin came along, it was a go-to remedy for wound healing, and more uses have been discovered by modern medicine.

U.S. News recounted the story of a woman with a “cratering” spider bite on her toe, for which conventional doctors suggested skin grafts and the possibility of losing her foot. Instead, she gravitated toward the doctor who wanted to treat the wound with honey-infused bandages. Within about five weeks, the wound was gone. The report added:

“Using honey to treat wounds is hardly a new idea. Anthropologists have found evidence showing ancient Egyptians used the approach as far back as 5,000 years ago. Aristotle wrote of using the sweet stuff as a salve for wounds around 350 B.C. The practice has persisted to the present day in certain tribal areas in Africa. Yet the bulk of the 2 million Americans with chronic foot ulcers probably aren't aware of honey's curative power.”¹³

Today, antibacterial Manuka honey is the only type of honey approved for use as a medical device.¹⁴

Raw Honey – An Antifungal, Antibacterial and Antimicrobial Super-Substance

While plain, raw and unfiltered honey is reportedly not quite as powerful, it too has benefits. In fact, raw honey is antimicrobial. It promotes the right environment for growing healthy bacteria in your digestive tract while fighting harmful bacteria such as those involved in chronic sinusitis.

Pure honey also promotes topical wound healing for things like ulcers and sunburn, help fight viruses like herpes and even support a healthy heart by lowering homocysteine levels and helping to [control allergies](#).

One study listed its effectiveness against *Pseudomonas aeruginosa*, which between approximately 1960 and the early 1980s was a tough pathogen to knock down, instigating infections “among patients with burn wounds, cystic fibrosis, acute leukemia, organ transplants and intravenous-drug addiction.”¹⁵

There are some amazing ingredients in honey. Scientists are just beginning to sort out some of them. One study¹⁶ explains that the healing powers of honey come from its antibacterial activity and its ability to keep the wound moist while healing and repairing tissue.

Additionally, the antimicrobial action (in most honeys) is because of the enzymatic manufacture of hydrogen peroxide. Manuka honey can be called non-peroxide honey because the antibacterial action remains even if the hydrogen peroxide action is blocked.

Part of those actions could be because of the high sugar and low pH levels that hinder the growth of microbes. The study adds that Manuka honey “has been reported to have an inhibitory effect on around 60 species of bacteria, including aerobes and anaerobes, gram-positives and gram-negatives.”¹⁷

Not All Honey Is (Manufactured) Equal

The same study observes:

“The medical grade honeys have potent in vitro bactericidal activity against antibiotic-resistant bacteria causing several life-threatening infections to humans. But, there is a large variation in the antimicrobial activity of some natural honeys, which is due to spatial and temporal variation in sources of nectar.”¹⁸

Be careful when purchasing honey because not every honey on the shelf is the pure, raw and unfiltered kind that will have these properties. In fact, **highly processed honey** is altered to the point that healing compounds may not be left. Much of this type comes from China and doesn't even have any pollen particles. To know how honey is faked, read my article [“Honey Laundering: Is Your Honey Real or Fake?”](#)

One final note: In a review titled, "A Comparison Between Medical Grade Honey and Table Honeys in Relation to Antimicrobial Efficacy," WoundResearch.com concludes that

“both patients and practitioners should understand the limitations of self-medication with supermarket honeys and the benefits of proprietary wound care products.”¹⁹

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