

Honey Treatment Dating Back to Sumerians Saves Limbs

BRANDON KEIMI - Wired

[Thanks to Judy Tart.]

When Jennifer Eddy first saw an ulcer on the left foot of her patient, an elderly diabetic man, it was pink and quarter-sized. Fourteen months later, drug-resistant bacteria had made it an unrecognizable black mess.

Doctors tried everything they knew -- and failed. After five hospitalizations, four surgeries and regimens of antibiotics, the man had lost two toes. Doctors wanted to remove his entire foot.

"He preferred death to amputation, and everybody agreed he was going to die if he didn't get an amputation," said Eddy, a professor at the University of Wisconsin School of Medicine and Public Health.

With standard techniques exhausted, Eddy turned to a treatment used by ancient Sumerian physicians, touted in the Talmud and praised by Hippocrates: honey. Eddy dressed the wounds in honey-soaked gauze. In just two weeks, her patient's ulcers started to heal. Pink flesh replaced black. A year later, he could walk again.

"I've used honey in a dozen cases since then," said Eddy. "I've yet to have one that didn't improve."

Eddy is one of many doctors to recently rediscover honey as medicine. Abandoned with the advent of antibiotics in the 1940s and subsequently disregarded as folk quackery, a growing set of clinical literature and dozens of glowing anecdotes now recommend it.

Most tantalizingly, honey seems capable of combating the growing scourge of drug-resistant wound infections, especially methicillin-resistant *Staphylococcus aureus*, or MRSA, the infamous flesh-eating strain. These have become alarmingly more common in recent years, with MRSA alone responsible for half of all skin infections treated in U.S. emergency rooms. So-called superbugs cause thousands of deaths and disfigurements every year, and public health officials are alarmed.

Though the practice is uncommon in the United States, honey is successfully used elsewhere on wounds and burns that are unresponsive to other treatments. Some of the most promising results come from Germany's Bonn University Children's Hospital, where doctors have used honey to treat wounds in 50 children whose normal healing processes were weakened by chemotherapy.

The children, said pediatric oncologist Arne Simon, fared consistently better than those with the usual applications of iodine, antibiotics and silver-coated dressings. The only adverse effects were pain in 2 percent of the children and one incidence of eczema. These risks, he said, compare favorably to iodine's possible thyroid effects and the unknowns of silver -- and honey is also cheaper.

"We're dealing with chronic wounds, and every intervention which heals a chronic wound is cost effective, because most of those patients have medical histories of months or years," he said.

While Eddy bought honey at a supermarket, Simon used Medihoney, one of several varieties made from species of *Leptospermum* flowers found in New Zealand and Australia.

Honey, formed when bees swallow, digest and regurgitate nectar, contains approximately 600 compounds, depending on the type of flower and bee. *Leptospermum* honeys are renowned for their efficacy and dominate the commercial market, though scientists aren't totally sure why they work.

"All honey is antibacterial, because the bees add an enzyme that makes hydrogen peroxide," said Peter Molan, director of the Honey Research Unit at the University of Waikato in New Zealand. "But we still haven't managed to identify the active components. All we know is (the honey) works on an extremely broad spectrum."

Attempts in the lab to induce a bacterial resistance to honey have failed, Molan and Simon said. Honey's complex attack, they said, might make adaptation impossible.

Two dozen German hospitals are experimenting with medical honeys, which are also used in the United Kingdom, Australia and New Zealand. In the United States, however, honey as an antibiotic is nearly unknown. American doctors remain skeptical because studies on honey come from abroad and some are imperfectly designed, Molan said.

In a review published this year, Molan collected positive results from more than 20 studies involving 2,000 people. Supported by extensive animal research, he said, the evidence should sway the medical community -- especially when faced by drug-resistant bacteria.

"In some, antibiotics won't work at all," he said. "People are dying from these infections."

Commercial medical honeys are available online in the United States, and one company has applied for Food and Drug Administration approval. In the meantime, more complete clinical research is imminent. The German hospitals are documenting their cases in a database built by Simon's team in Bonn, while Eddy is conducting the first double-blind study.

"The more we keep giving antibiotics, the more we breed these superbugs. Wounds end up being repositories for them," Eddy said. "By eradicating them, honey could do a great job for society and to improve public health."