Honey is one of nature's oldest folk remedies, having been used for at least 5,000 years for its healing properties. Ancient civilisations used honey to help heal wounds.

**Hippocrates of ancient Greece, the 'father of medicine', found that honey heals boils, ulcers on the lips and running sores.**

Indigenous cultures have dressed wounds with honey for thousands of years. In New Zealand the Maori people have used a particular kind of honey, *manuka*, for centuries for treating flu, fevers and colds and healing skin and stomach ailments.

But along came antibiotics and the sticky stuff was nudged aside by modern medicine. But now honey is making a comeback. New research has shown that manuka honey kills every type of bacteria that scientists can throw at it, including the antibiotic-resistant 'superbugs' plaguing hospitals and killing patients around the world.

These findings could lead to a range of honey-based products replacing antibiotic and antiseptic creams - that is, if the drug companies don't block this healing agent that they cannot patent.

**WHERE DOES MANUKA HONEY COME FROM?**

Manuka honey comes from bees which gather nectar solely from the New Zealand *Manuka* bush or tea tree (*Leptospermum scoparium*). It is also known as 'tea tree' manuka honey. In Australia it has the alternative name, 'jelly bush honey'. True manuka honey is unique to New Zealand.

The *Manuka* bush flowers only between December and January, so beekeepers have just six weeks to make a year's supply. Trickier still, not all *Manuka* bushes produce the medicinal honey. Honey is 25 percent sweeter than refined white sugar, and a lot healthier. Both white sugar and honey contain the simple sugars, glucose and fructose, but in white sugar they are combined to form sucrose, whereas in honey they exist separately and require no digestion. Further, white sugar has no healing properties and contains zero minerals and vitamins.

Another plus for honey is that it contains antioxidants.

**WHY IS IT SO SPECIAL**

Since 1981, research commissioned by Watson and Son, a major New Zealand producer of manuka honey, has been conducted by Professor Peter Molan, Associate Professor in Biochemistry at The University of Waikato in New Zealand.

[General reference for the Waikato Honey Research Unit, established 1995: http://bio.waikato.ac.nz/honey/. Prof Molan's key paper is entitled, 'The Unique Properties of Manuka Honey'.]

The antibacterial property of all honeys begins with the fact that when the bees take nectar back to the hive, they add an enzyme, called *glucose oxidase*, while they are concentrating the nectar into honey. When honey comes into contact with body moisture, the glucose oxidase slowly releases the antiseptic, *hydrogen peroxide*. This is released at sufficient levels to be effective against bacteria but not damaging to tissue.

Unfortunately, the hydrogen peroxide antibacterial activity can vary widely because the enzyme is easily destroyed by heat, fluid and sunlight, and because hydrogen peroxide can be broken down in bodily tissue and blood. However, some kinds of manuka honey have antibacterial activity that is much more potent than the peroxide effect. This extra antibacterial activity was labelled 'Unique Manuka Factor' or simply UMF, and is now known to be a compound called *methylglyoxal*. This compound is toxic on its own, but in honey it combines with unidentified compounds synergistically to be so strongly antibacterial that, as one researcher said, it causes "multi-system failure" in bacteria. Manuka honey is world famous for this very powerful antibacterial activity.

The UMF is a phyto-chemical property derived from the nectar of some, but not all, manuka flowers. For this reason it is found in only certain strains of manuka honey. Professor Molan says that, "There is nothing like UMF found anywhere else in the world."

Making manuka honey even more special is the fact that, unlike the hydrogen peroxide in regular honey, the methylglyoxal does not break down, so that the antibacterial activity of the honey remains intact. The UMF property is very stable to heat and bodily fluids and not easily destroyed.

Prof Dee Carter, of the University of Sydney's School of Molecular and Microbial Biosciences, said that these discoveries explain why the antibacterial activity of manuka is so effective and why bacteria fail to develop any of the resistance that is inevitable with conventional antibiotics. Professor Carter said that no immunity has been built up by any of the bacteria researchers used to test the honey, including superbugs such as the flesh-eating bacteria.

"Most bacteria that cause infections in hospitals are resistant to at least one antibiotic," she said, "and there is an urgent need for new ways to treat and control surface infections."

"New antibiotics tend to have short shelf lives, as the bacteria they attack quickly become resistant," stated Professor Carter. "Many large pharmaceutical companies have abandoned antibiotic production because of the difficulty of recovering costs. Developing effective alternatives could therefore save many lives."


In addition to being potent and stable, the UMF can reach deep-seated infections, which hydrogen peroxide cannot. The UMF antibacterial property can penetrate one centimetre into skin, fat and muscle overnight, whereas hydrogen peroxide does not penetrate beyond the skin's surface.

Although all honey is acidic - enough to slow down or prevent the growth of many species of bacteria - this acidity can be neutralised by body fluids. Because UMF is stable in moisture, it does not lose its potency.

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**manuka honey for healing wonders**

BY ROGER FRENCH
In laboratory tests the UMF property has been found to be effective against a wide range of bacteria including:

- *Helicobacter pylori* - this bacterium causes most stomach ulcers. (The hydrogen peroxide of other honeys is not effective against *Helicobacter pylori*.)
- *Staphylococcus aureus* and *Escherichia coli*, the most common causes of infected wounds.
- *Streptococcus pyogenes* - causes sore throats.

The UMF manuka honey is more powerful against some types of very resistant bacteria than ordinary honey, according to laboratory research. In particular, it has been found to be:

- Twice as effective as other honeys against *Staphylococcus aureus* (golden staph) and *Escherichia coli*, the most common cause of infected wounds.
- Eight times as effective against *Helicobacter pylori*.
- More effective against *Streptococcus pyogenes*.

[Reference: http://manukahoney.com/resources/research/secondagent.html]

### HOW DO WE FIND THE RIGHT KIND OF MANUKA HONEY

Genuine ‘UMF Manuka Honey’ is tested and rated for its antibacterial potency. Only tested and approved products are eligible to use the UMF trademark. The presence of the UMF property can be detected only by testing in a specially appointed laboratory. These tests determine the presence of and activity level of the UMF property. For a manuka honey to qualify to use the name ‘UMF’, it must have a rating of UMF 10 or more. The UMF rating indicates the antibacterial strength of the honey after the honey has been packed in New Zealand (it does not apply to honey packed outside New Zealand).

The higher the UMF rating, the higher the antibacterial activity. Products with a rating of 10 or higher are appropriate for therapeutic use. For serious wounds and illnesses, it is recommended to use medical grade manuka honey products. These have been sterilized by gamma irradiation in order to be used safely.

### JUST WHAT DOES THE HONEY DO?

The Waikato Honey Research Unit website provides clinical observations documenting manuka honey's effectiveness. Health benefits include not only the treatment of serious infections, but also the treatment of wounds, cuts, burns, ulcers, yeast infections, insect bites, various skin conditions such as acne, eczema and psoriasis, and fungal infections ranging from ringworm to athlete's foot.

[Reference: ‘Manuka honey as a medicine’ by PC Molan, 2001, on the website of the Honey Research Unit.]

As stated above, manuka has been shown to be effective against antibiotic-resistant strains of bacteria like MRSA, which is a serious problem for hospitals all over the world. Moreover, antibiotics have side effects, whereas this honey has none.

"We know it has a very broad spectrum of action," declared Peter Molan. "It works on bacteria, fungi and protozoa. We haven’t found anything it doesn’t work on among infectious organisms."

Studies are showing that high-level-UMF manuka honey could be very effective in:

- digestive upsets by helping relieve stomach ulcer symptoms and gastritis
- wound care by assisting the natural healing of skin ulcers, diabetic ulcers, wounds, burns, boils, cracked skin, pressure sores, MRSA, eczema, dermatitis
- relieving sore throats
- oral hygiene as it inhibits acid production and helps prevent cavities developing in teeth.

### Honey for Wound Care

Trials are showing that high-activity UMF manuka honey provides an optimum, germ-free, moist, wound-healing environment, which supports and facilitates the natural healing of varicose and skin ulcers, diabetic ulcers, pressure sores, wounds, burns, boils, cracked skin, cuts and grazes.

The honey is anti-inflammatory and reduces pain and swelling. It does not damage the surrounding tissue.

A moist wound environment speeds up the healing process, whereas tissue shrinkage is slowed if a wound dries. Moist healing also results in less scarring (a scar is the body’s natural attempt to keep a wound moist) and less pain.

Honey cleans wounds - its osmotic effect lifts dirt out of the wound. Dressings do not stick to the surface of the wound, allowing easy removal of dressings. Because the wound is kept moist, scarring is reduced.

### Cancer

Cancer specialist, Dr Glenys Round, has found honey to be an effective treatment for some associated cancer problems.

"We've been using honey to treat fungating wounds, where the cancer has broken through the skin," she said. "The results have been excellent."

Recently she has had success in using honey dressings on patients with wounds or ulcers resulting from radiation therapy. "Most of these patients in the past had tried various other conventional treatments without success," she says.

### A CLINICAL TRIAL AND ANECDOTAL EVIDENCE

A clinical trial was carried out in 1999-2000 at Waikato Hospital, Hamilton, New Zealand, using UMF-rated manuka honey on pressure sores and chronic wounds that were infected or had a history of recurrent infections. No antibiotics or other antibacterial agents were used. Successful healing was achieved with venous leg ulcers, leg ulcers of mixed causes, diabetic foot ulcers, pressure ulcers, unhealed graft donor sites, abscesses, boils, pilonidal sinuses and infected wounds from lower limb surgery. Infection was rapidly cleared, including in wounds infected with *Pseudomonas* or MRSA. Only wounds with arterial insufficiency did not heal.

The researchers concluded that, "With appropriate dressing techniques and using honey with assured antibacterial activity, it is possible to get excellent healing rates for infected chronic wounds." [Reference: 'A pilot trial of honey as a wound dressing has shown the importance of the way that honey is applied to wounds,' by JA Betts and PC Molan. Presented at the 11th European Wound Management Association conference. Dublin, 17 – 19 May 2001]

For gastroenteritis - it is claimed that when manuka honey is used to treat diarrhoea, it promotes the rehydration of the body and causes the earlier clearing of diarrhoea, vomiting and stomach upsets.

For eye infections like blepharitis - research is looking into the effectiveness of honey and the results look promising.

For dental health. Research is indicating that UMF Manuka Honey could be effective for oral hygiene as it inhibits acid production and helps prevent the development of cavities in teeth.

Peter Molan himself had a first-hand taste of the healing power of manuka honey applied to a wound. "When I cut my finger with a chainsaw quite deeply and quite a wide cut" he wrote, "I put the honey straight on it, wrapped it up and kept on working for the rest of the day. Now there's not a mark on the finger."

Gary Bain of Sydney Adventist Hospital's wound clinic is enthusiastic about manuka honey. For his patient, Geoff Pearce, it meant the saving of his leg. "It was a work accident," said Geoff. "I cut myself on some tin plate and what started out as a small scratch turned into a horrible ulcer." The wound was treated twice a week for six years with manuka-honey-impregnated dressings. These kept it free of infection and reduced the inflammation, allowing the wound to heal.

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