



Honey

Western research and Traditional usage

What is honey? Nectar procured from flowers is then stored in a special 'stomach' or 'crop', brought back to the hive, and transferred to other bees (through regurgitation). Whilst in the crop, the nectar mixes with enzymes. When transferred to the honeycomb cells, the nectar/enzyme mix is then fanned by bee wings to evaporate residual water, then encased with beeswax in the honeycomb and stored for future use.

What is honey's chemical composition? Honey is made up mainly of carbohydrates, specifically monosaccharides (single-sugar units) and glucose (specific single-sugar which creates energy molecules in the body), disaccharides (double-sugar units), oligosaccharides (multiple sugar units), as well as, proteins, amino acids, vitamins, minerals, enzymes, antioxidants (specific and unique to honey/bee pollen is pinocembrin), and organic acids (J, Loveridge 2001).

Western Research: (not an exhaustive list)

Anti-bacterial/wound-healing

"All bacterial species tested were susceptible to different combinations of bactericidal factors in honey, indicating that these bacteria were killed via distinct mechanisms. This clearly demonstrates the

Written & Researched by Shannon Hobson, Certified East West Herbalist, founder of Natural-Know How
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importance of the multifactorial nature of honey for its potent, broad-spectrum bactericidal activity.”
(Kwakman, Paulus HS, et al. 2010)

“We have demonstrated for the first time that honey contains an antimicrobial peptide, bee defensin-1, and that this peptide substantially contributes to the bactericidal activity.” (Kwakman, Paulus HS, et al. 2010)

“Microbial resistance to honey has never been reported, which makes it a very promising topical antimicrobial agent against the infection of antibiotic-resistant bacteria (e.g., MDR S. maltophilia) and in the treatment of chronic wound infections” (Mandal, Manisha Deb, and Shyamapada Mandal, 2011)

“high sugar concentration, hydrogen peroxide, and the low pH are well-known antibacterial factors in honey and more recently, methylglyoxal and the antimicrobial peptide bee defensin-1 were identified as important antibacterial compounds in honey.” (Kwakman, Paulus HS, and Sebastian AJ Zaat, 2012)

“When ingested, honey also promotes healing and shows antibacterial action by decreasing prostaglandin levels, elevating nitric oxide levels, and exerting prebiotic effects. These factors play a major role in controlling inflammation and promoting microbial control and healing processes.” (Al-Waili, Noori S., et al. 2011)

“The accelerative effect of honey in the wound, ulcer and skin burn healing process is related to its physical properties of hygroscopicity, hypertonicity, lower pH, and complex chemical composition”
(Abeshu, Motuma Adimasu, and Bekesho Geleta, 2016)

Anti-cancer

“honey has anticancer effect through its interference with multiple cell-signaling pathways, such as inducing apoptosis, antiproliferative, anti-inflammatory, and antimutagenic pathways. Honey modulates the body immune system.” (Ahmed, Sarfraz, and Nor Hayati Othman, 2013)

“Some simple and polyphenols found in honey, namely, caffeic acid (CA), caffeic acid phenyl esters (CAPE), chrysin (CR), galangin (GA), quercetin (QU), kaempferol (KP), acacetin (AC), pinocembrin (PC), pinobanksin (PB), and apigenin (AP), have evolved as promising pharmacological agents in prevention and treatment of cancer” (Othman, Nor Hayati, 2012)

“Honey has showed antineoplastic activity in experimental bladder cancer treatment” (Eteraf-Oskouei, Tahereh, and Moslem Najafi, 2013)

Immune-boosting/modulating

“Although a possible application of honey and its active compounds as drugs against cancer is still far away from clinical practice, scientific results highlight that they could be used as immune booster for patients undergoing chemotherapy.” (Badolato, Mariateresa, et al, 2017)

“Honey has anti-inflammatory, antioxidant and immune boosting property attributed to the high sugar concentration and the resulting osmotic effect, low PH and acidity, and hydrogen peroxide.” (Abeshu, Motuma Adimasu, and Bekesho Geleta, 2016)

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“findings indicated that honey glycoproteins and glycopeptides significantly interfere with molecules of the innate immune system” (Mesaik, M. Ahmed, et al. 2015)

Digestive system

“Honey has prebiotic effects, increasing the population of bacterial microflora important for the health of gastrointestinal tract.” (Abeshu, Motuma Adimasu, and Bekesho Geleta, 2016)

“Oral administration of honey to treat and protect against gastrointestinal infection such as gastritis, duodenitis and gastric ulceration caused by bacteria and rotavirus has been reported” (Eteraf-Oskouei, Tahereh, and Moslem Najafi, 2013)

“honey decreased the duration of diarrhea in cases of bacterial gastroenteritis as compared to group using sugar in replacement fluid. In rehydration fluid, honey adds potassium and water uptake without increasing sodium uptake. It also helps to repair the damaged intestinal mucosa, stimulates the growth of new tissues and work as an anti-inflammatory agent (Eteraf-Oskouei, Tahereh, and Moslem Najafi, 2013)

Diabetes

“Studies have shown that honey consistently produces a lower glycemic effect when compared to glucose and sucrose in normal volunteers and type I diabetics” (Abeshu, Motuma Adimasu, and Bekesho Geleta, 2016)

“long periods of honey intake seem to reduce fasting glucose levels in humans, suggesting that honey consumption influences plasma glucose regulation, mainly through a normo- or hypoglycemic effect. Therefore, honey may be proposed as a nutritional dietary supplement for healthy individuals and for those suffering from alterations in glycemic regulation” (Cortés, Manuel E., Pilar Vigil, and Gloria Montenegro, 2011)

“it was found that honey stimulates insulin secretion, decrease blood glucose levels, elevates hemoglobin concentration and improves lipid profile” (Eteraf-Oskouei, Tahereh, and Moslem Najafi, 2013)

Anti-allergen

AR (Allergic Rhinitis) “Honey ingestion at a high dose (1g/kg body weight) improves the overall and individual symptoms of AR, and it could serve as a complementary therapy for AR.” (Asha'ari, Zamzil Amin, et al, 2013)

BPH (Birch Pollen Honey) “The results should be regarded as preliminary, but they indicate that BPH could serve as a complementary therapy for birch pollen allergy.” (Saarinen, K., J. Jantunen, and T. Haahtela, 2011)

“The results of this systematic review have demonstrated that honey is effective in alleviating nasal allergy symptoms in numerous mediums including nasal spray as well as oral intake when produced in the geographic area in which the patient population resides.” (Ditzel, Arielle N. 2019)

Continues...

Traditional Use: (not an exhaustive list)

Ayurvedic: (Madhu = Sanskrit for honey) for insomnia, weak digestion, cough, eye care (cataracts), gum/teeth care, wound healing, anemia, heart conditions, used for Kapha imbalance (reduces Kapha) and should be avoided by Pitta types (too heating).

Traditional Chinese Medicine: (Feng mi = honey) nourishes the yin (prevent dryness), effecting the Lungs, Spleen, Large intestine, and Stomach Organs, herbs are cooked in honey to increase yin effects, reduce toxicity (used for aconite poisoning), or to stimulate a specific organ system (specific to Spleen/Stomach, tonifying), as well as restore qi. Also used as a laxative, emollient for the skin, to bind herbal powders in formulations, aid in taste in formulations, and as a demulcent on inflamed mucous membranes like gums.

Other cultures: wound healing, embalming the dead, gout treatment, for nervous disorders, fevers, oxymels (honey and vinegar combo) for pain, hydromel (water and honey combo) for thirst, baldness, cough, laxative, as a healthy drink, and TB infections.

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