

Background in the traditional use of honey in medicine: Honey, a thick, viscous, sugary food substance, produced by honeybees has a history of use since thousands of years. The holy Qur'an vividly illustrates the potential therapeutic value of honey: "And thy Lord taught the bee to build its cells in hills, on trees, and in (men's) habitations; Then to eat of all the produce (of the earth), and find with skill the spacious paths of its Lord: there issues from within their bodies a drink of varying colours, wherein is healing for men: verily in this is a sign for those who give thought". Moreover, the Muslim prophet Mohammad (SA) recommended the use of honey for the treatment of diarrhea[9]. Avicenna, the great Iranian scientist and physician, almost 1000 years ago, had recommended honey as one of best remedies in the treatment of tuberculosis [10]. Honey in Christian The biblical traditional diet including date honey in addition to figs, wheat, grapes, barley, olives, and pomegranates has been associated with low rates of cardiovascular diseases along with obesity and other non-communicable diseases. [10] Additionally, to its traditional therapeutic uses, honey also has a traditional use in cosmetic. Honey is arguably the oldest skin care ingredient currently in use, as testified by many traditional uses in different countries. In East Asia, Japanese women are thought to maintain their hands devoid of wrinkles through a daily use of honey. Chinese women mix crushed seeds, particularly those of orange, to make a softening and cleaning cream for pimples and other anaesthetist. In Louisiana, Creole women rub them bodies with a lotion consisting of honey and water mixed with various herbal substances. Such a treatment is used as a cosmetic, as a remedy for skin ailments, and as a protective potion against evil ghosts. Women from the Arab Peninsula prepare antigen face masks consisting of honey mixed with egg yolk, avocado, lemon, and yogurt.[2] The medicinal use of honey for skin disease is cited in several ethno pharmacological and ethno medical surveys. In these medicaments, honey is frequently used as a binder or vehicle for the external application of herbal extracts; however, specific therapeutic properties are also recognized. According to traditional Chinese medicine, honey prevents scars, removes discoloration and freckles, and improves the general appearance of skin. In Arab medicine, honey is used for fungal infections of the skin,[2]while in Burkina Faso; it is used as a skin cleansing agent by labourers, probably due to its bactericidal and sterilizing properties.[11] A review of remedies from the Eastern Mediterranean based on animal products, reports uses of honey in skin diseases dating back since the Middle Age.[12] An ethnobotanical study carried out in the state of Assam, India, has reported that honey is used for the topical application of disinfectant plants ground to powder or, alternatively, is mixed with rice flour and egg yolk to obtain a paste that is layered on the face for skin smoothing and spot removal [13]. Similarly, in women communities of Northern Pakistan, creamy honey is used as a base of herbal mixtures for skin smoothing, eyelid, and face protection, and the treatment for freckles and white spots. [14] In the Balkan region, special balms of Bosnia and Herzegovina known as "mehlems" are prepared by mixing fresh herbal parts with warmed conifer resins, lard, olive oil, and honey, and used as cosmetic or to cure skin and other external injuries or rheumatism.[15] Overview of wound types and the challenges in their healing processes Type of wounds: Cutaneous wounds are defined as damaging skin integrity because of some external factors (e.g. accidental injuries) or internal factors (e.g. diabetics' injuries).[12] E. Lev, "Traditional healing with animals (zootherapy): medieval to present-day Levantine practice," J Ethnopharmacol, vol. 85, no. 1, pp. 107–118, Mar. 2003, doi: 10.1016/S0378- 8741(02)00377-X. 13. [13]

A. P. Saikia, V. K. Ryakala, P. Sharma, P. Goswami, and U. Bora, "Ethnobotany of medicinal plants used by Assamese people for various skin ailments and cosmetics," *J Ethnopharmacol*, vol.[26] D. A. Dubay and M. G. Franz, "Acute wound healing: the biology of acute wound failure," *Surgical Clinics of North America*, vol. 83, no. 3, pp. 463–481, Jun. 2003, doi: 10.1016/S0039– 6109(02)00196–2 . 27. [27] G. Chu, L. Vlok, C. Zwaag–Pijls, C. M. Houser, and B. de Groot, "Emergency Department Management and Follow–up of Children with Bicycle Spoke Injuries," *J Emerg Med*, vol.[7] V. Bansal, B. Medhi, and P. Pandhi, "Honey—a remedy rediscovered and its therapeutic utility.," *Kathmandu Univ Med J (KUMJ)*, vol. 3, no. 3, pp. 305–9, 2005. 8. [8] P. Zou, "Traditional Chinese Medicine, Food Therapy, and Hypertension Control: A Narrative Review of Chinese Literature," *Am J Chin Med (Gard City N Y)*, vol.[22] T. Mustoe, "Understanding chronic wounds: a unifying hypothesis on their pathogenesis and implications for therapy," *The American Journal of Surgery*, vol. 187, no. 5, pp. S65–S70, May 2004, doi: 10.1016/S0002–9610(03)00306–4 . 23. [23] C. Xue, A. Friedman, and C. K. Sen, "A mathematical model of ischemic cutaneous wounds," *Proceedings of the National Academy of Sciences*, vol. Also, he utilized honey for baldness, contraception, wound healing, laxative action, cough and sore throat, eye diseases, topical antisepsis, prevention and treatment of scars[7] Honey in China In Traditional Chinese System of Medicine or Traditional Chinese Medicine (TCM), honey has been used to treat cough, bronchitis, burns, open wounds, scars, dry skin, dry mouth and throat, and constipation and for boosting immune system. Its prescription for a standard wound salve discovered in the Smith papyrus (an Egyptian text dating from between 2600 and 2200 B.C.) calls for a mixture of mrht (grease), byt (honey) and ftt (lint/fibre) as transliterated from hieroglyphic symbols [5]. Ischemic Wounds are another type of chronic wounds caused by the restriction of blood supply to the tissues resulting in the shortage of oxygen and glucose required for cellular metabolism.[23] Acute wounds are the wound cause by external factors Generally acute wounds are classified into two categories: 1. Hippocrates, the great Greek scientist, prescribed a simple diet, favouring honey given as oxymel (vinegar and honey) for pain, hydromel (water and honey) for thirst, and a mixture of honey, water and various medicinal substances for acute fevers [5] . The ancient Egyptians, Assyrians, Chinese, Greeks and Romans employed honey for wounds and diseases of the gut.[2] Honey in Indian system of Ayurveda Ayurveda is a compound word i.e., ayus meaning 'life' or 'life principle', and the word Veda, which refers to 'a system of knowledge'. Various cultures including Vedic, Egyptian, Roman, Greek, Mayans, Babylonians, and Chinese have been consuming honey and beeswax since ancient time.[1] Honey has been used in medicine for thousands of years across various cultures due to its natural healing properties. Lacerations Irregular or jagged tears in the skin like childbirth or punching body.[30] Burn Wounds – Description: Injuries caused by heat, chemicals, or electricity, ranging from minor (first–degree) to severe (third–degree) burns. Ancient Egyptians did not know about microorganisms, but they knew that honey could prevent infections from dirt in burns healing.[6] Honey in ancient Greece Oenomet is an ancient Greek beverage consisting of honey and unfermented grape juice. Additionally, traditional Ayurvedic experts recommend honey for skin disorders (such as wounds and burns), cardiac pain and palpitation, all imbalances of the lungs and anemia. Venous/Vascular Ulcers (also known as stasis ulcers or dermatitis) are chronic form of wounds occurring in the lower extremity (i.e. legs) and account for more than 70% of chronic wounds.[20]

2. Because of immobility of body in paralysis, tissues become ischemic as pressure on the tissue becomes greater than in capillaries, and blood flow gets restricted in specific tissues mostly muscles. Due to its concentrated sweetness and energy condensed properties, it is used as food ingredient since millennia. It is also used as a common ingredient in capsules, pills, herbal preparations, and other formulas as a flavouring agent. During the long historical course of its association with human feeding habits, it has also been endorsed for religious rituals. Chronic wounds are the wounds caused by metabolic disorders.[18] These wounds are classified into three categories: 1. Pressure Ulcers (Bedsore) is the third form of chronic wounds, which occur normally in people having paralytic conditions. The following six categories of acute traumatic or surgical wounds have been found in the literature.[24], [25], [26] 1. – Risk of Amputation: Severe cases may require amputation if revascularization is not possible.[34] Pressure Ulcers (Bedsore) ?Hence 'Ayurveda' roughly translates as the 'knowledge of life' [3]. Traditionally, according to the texts of Ayurveda, honey is a boon to those with weak digestion. Honey is regarded by Ayurvedic experts, as valuable in keeping the teeth and gums healthy [16]. Moreover, honey is regarded as useful in the prevention of cataract. Honey was utilized for its antibacterial properties that helped heal infected wounds. It is sometimes used as a folk remedy for gout and certain nervous disorders. Another category is also included in chronic wounds called as ischemic wounds.[19] 1. Abrasions or Scrapes are kind of wounds when a rough surface is rubbed with skin causing friction.[27] 2. The ancient vedic civilization considered honey one of nature's most remarkable gifts to mankind. Also, it has been emphasized that the use of honey is highly beneficial in the treatment of irritating cough. It has been used for centuries for the treatment of insomnia because it has hypnotic action. 2.2.