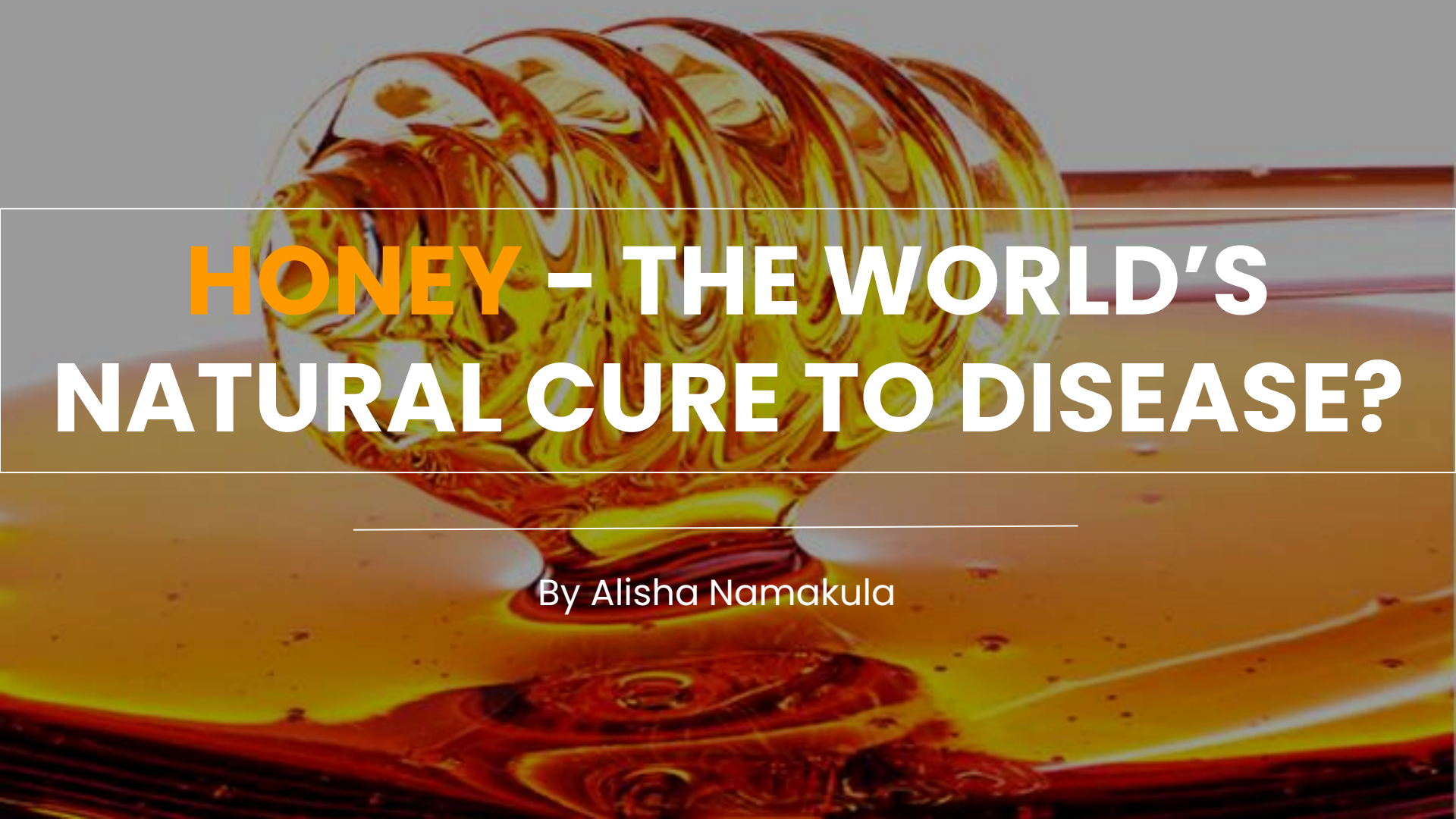
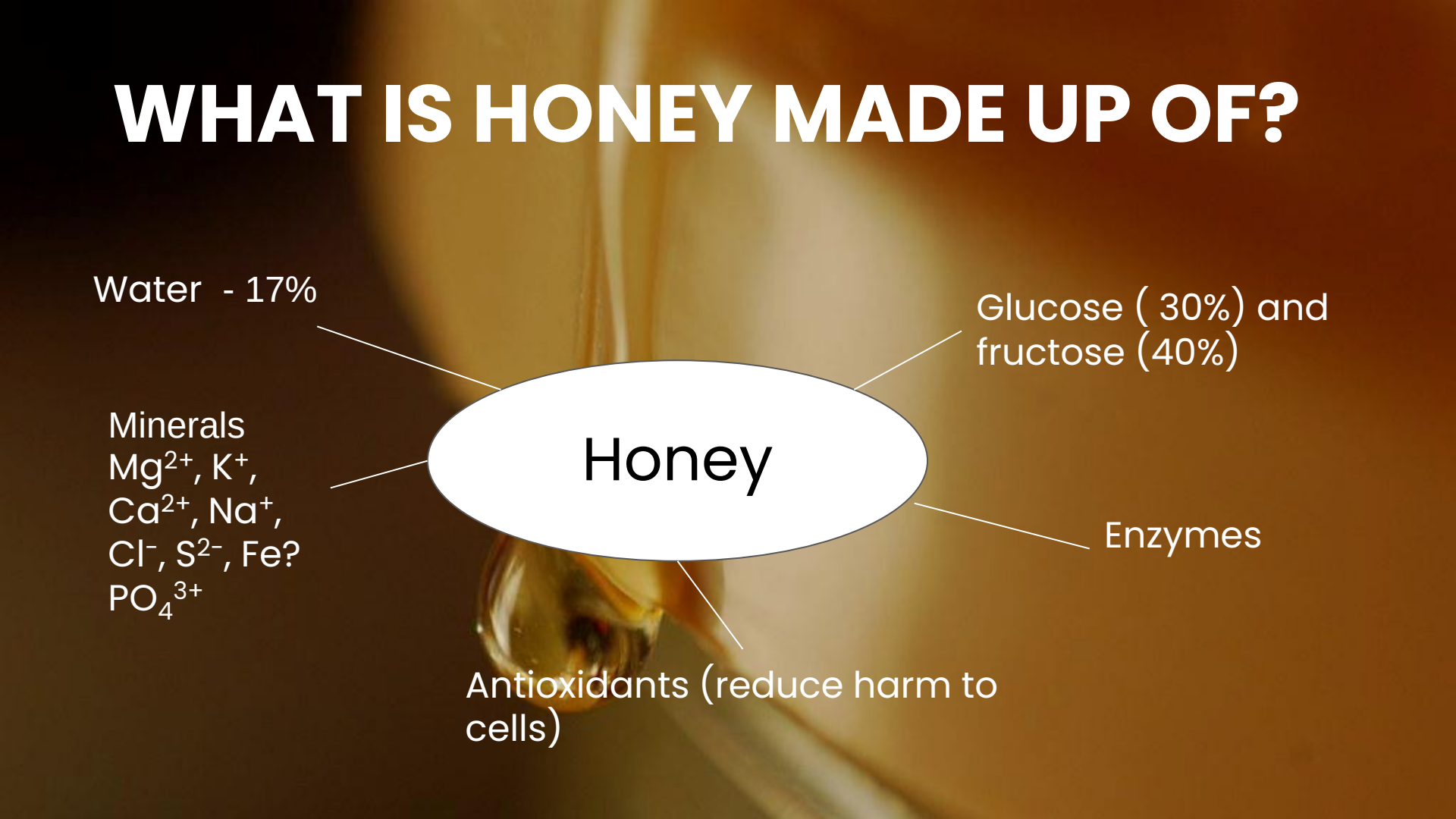


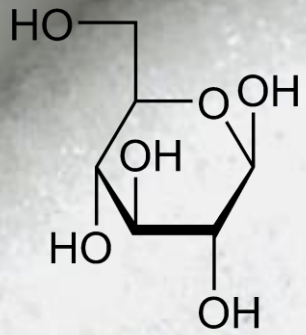
HONEY – THE WORLD'S NATURAL CURE TO DISEASE?

By Alisha Namakula

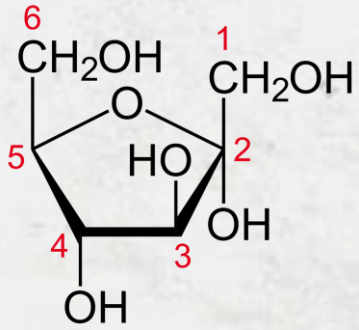
WHAT IS HONEY MADE UP OF?



HONEY'S MAIN (ISOMERIC) SUGARS



- Glucose
- 6 carbon ring



- Fructose
- 5 carbon ring
- (Sweeter!)

- Its structure is what is perceived by our taste buds as 'sweet'.

MORE SUGAR, LESS WATER, NO BACTERIA

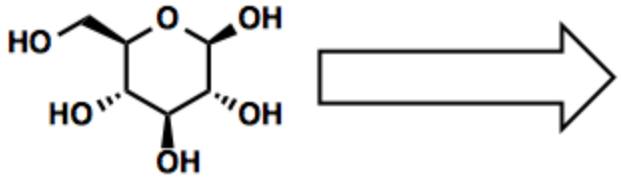
Both molecules are **polar** due to OH groups - form hydrogen bonds with H_2O

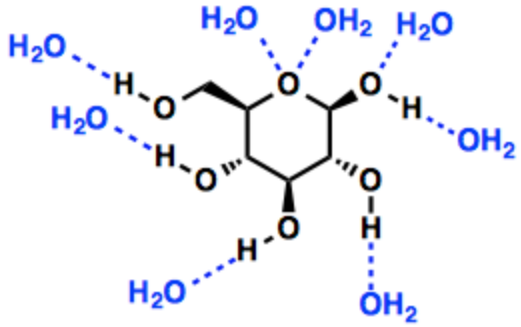
A **surprisingly high** amount of glucose and fructose dissolves in **low water content**

Low water content - bacteria **can't survive**

Water moves by **osmosis** towards 'more negative water potential'

Water is **sucked** out of cell!

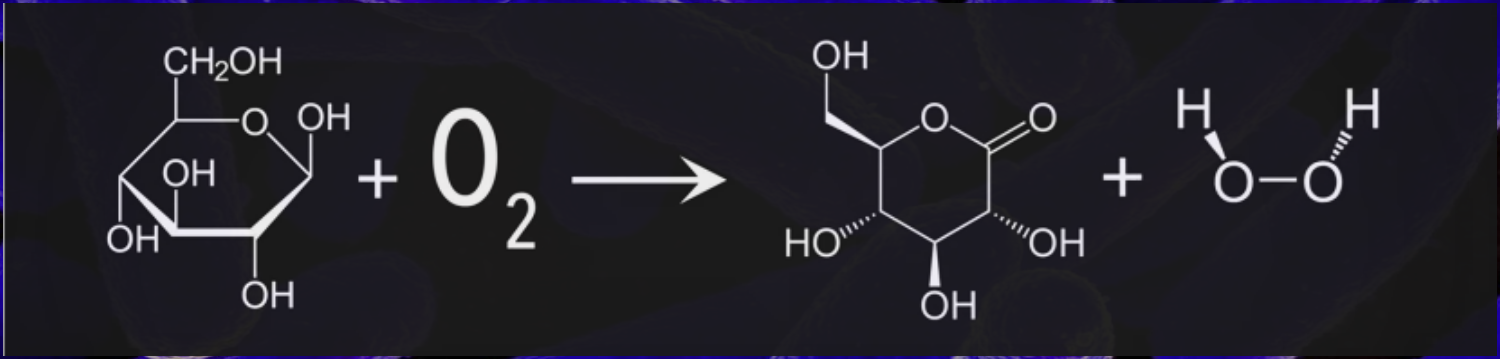




DESTROYING BACTERIA

Honey contains something called **glucose-oxidase**
It is an **enzyme**. (if it ends in 'ase' it's most likely an enzyme)

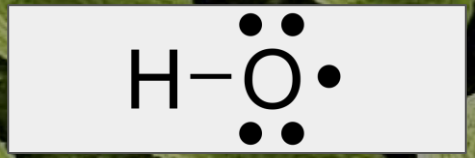
It **catalyses** THIS reaction:



NOTE: It is **not active** due to honey's low water content and acidity, but once e.g. the body's fluids **dilute** it, it'll become active.

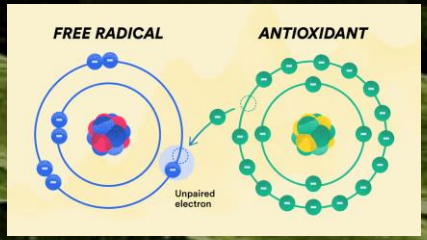
LET'S BREAK IT DOWN...

Hydrogen Peroxide
- **Decomposition produces 'OH radicals'**
-**Attaches** onto organic molecules
-**Breaks down** bacterial cell wall



Gluconic acid
-**Acid** with a pH below 1.82
-Bacteria can't survive in **acidic conditions.**
-Bacteria dies

Antioxidants
-Get rid of harmful by-products of reactions
-'Stabilize' **free radical**s, making them non toxic in body.



NATURAL HEALER

One way it's used in medicine (and has been used for a long time) is **treating wounds.**

Many reports that honey is effective in:

- dressing of wounds
- Burns
- Skin
- ulcers
- Inflammations

Antibacterial properties **speed up growth** of epidermal cells/**new** tissue - **heal** the wound.

Ability to **absorb moisture** from the **air** - **prevents scarring** and kills bacteria.

Tested against '**conventional modern therapeutic agents'** - some fail

E.g. silver sulfadiazine, the **antibacterial ointment** against Honey.

MANUKA - THE BEST HONEY IN THE WORLD?

Destroy - pathogenic bacteria such (S. aureus) (H. pylori)
Promising for treatment of wounds or stomach ulcers.

Scientists **suggest** antioxidants (e.g. galagin) **prevent heart problems** and **cancer** or slow the course of **neurological diseases** (HD).

LIMITATIONS

Infant Botulism

- **Clostridium botulinum** - Grow in spores
- D**ried out** - 'water sucking properties' are futile
- Adapted to withstand acidic conditions
- **Botulinum toxin** produced when they become **mature** bacteria
- **Honey** has **spores** in it - **adults immune system** intercept it
- Shouldn't feed honey/honey water to infants under one year old.

64 calories

Spikes blood sugar levels - **Heavily saturated** sugar solution

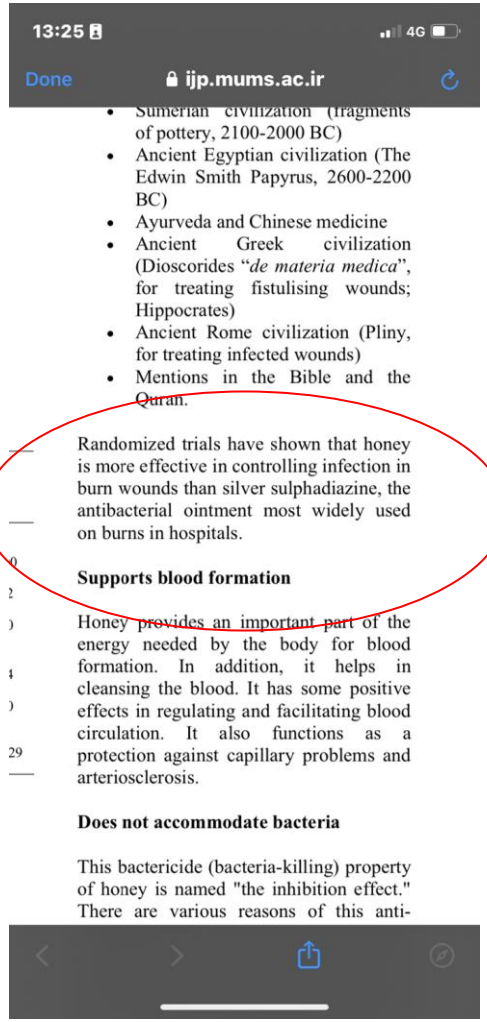
- Problem for diabetics
- weight gain risk
- type 2 diabetes
- heart disease

Honey in Islam

Narrated Ibn 'Abbas: (The Prophet said), **"Healing is in three things: A gulp of honey**, cupping, and branding with fire (cauterizing)." But I forbid my followers to use (cauterization) branding with fire."

The Prophet (SAW) said, "Do not give **honey** to an **infant child** ." (Sahih al-Bukhari)

Tahneek - ‘soften’ or ‘moisten’ the Islamic and Arabic practice of, rubbing, usually softened dates, on the roof of the mouth.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Sumerian civilization (fragments of pottery, 2100-2000 BC)
Ancient Egyptian civilization (The Edwin Smith Papyrus, 2600-2200 BC)
Ayurveda and Chinese medicine
Ancient Greek civilization (Dioscorides "de materia medica", for treating fistulising wounds; Hippocrates)
Ancient Rome civilization (Pliny, for treating infected wounds)
Mentions in the Bible and the Quran.
Randomized trials have shown that honey is more effective in controlling infection in burn wounds than silver sulphadiazine, the antibacterial ointment most widely used on burns in hospitals.
Supports blood formation
Honey provides an important part of the energy needed by the body for blood formation. In addition, it helps in cleansing the blood. It has some positive effects in regulating and facilitating blood circulation. It also functions as a protection against capillary problems and arteriosclerosis.
Does not accommodate bacteria
This bactericide (bacteria-killing) property of honey is named "the inhibition effect." There are various reasons of this anti-


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Review
The effects of honey compared to silver sulfadiazine for the treatment of burns: A systematic review of randomized controlled trials
Zoriah Aziz et al. Burns. 2017 Feb.
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Abstract
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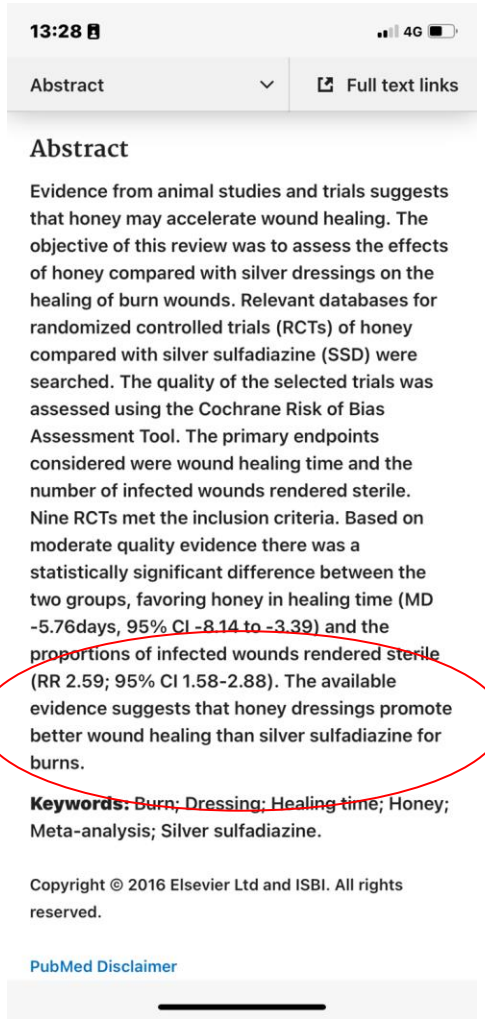
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Abstract
Full text links
Abstract
Evidence from animal studies and trials suggests that honey may accelerate wound healing. The objective of this review was to assess the effects of honey compared with silver dressings on the healing of burn wounds. Relevant databases for randomized controlled trials (RCTs) of honey compared with silver sulfadiazine (SSD) were searched. The quality of the selected trials was assessed using the Cochrane Risk of Bias Assessment Tool. The primary endpoints considered were wound healing time and the number of infected wounds rendered sterile. Nine RCTs met the inclusion criteria. Based on moderate quality evidence there was a statistically significant difference between the two groups, favoring honey in healing time (MD -5.76days, 95% CI -8.14 to -3.39) and the proportions of infected wounds rendered sterile (RR 2.59; 95% CI 1.58-2.88). The available evidence suggests that honey dressings promote better wound healing than silver sulfadiazine for burns.
Keywords: Burn; Dressing; Healing time; Honey; Meta-analysis; Silver sulfadiazine.
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