

TZAFDINAH: A TALMUDIC SCURVY?

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As early as the Talmudic era, the great Rabbis in Jerusalem and Babylonia dealt with the complexities of the vitamin C deficiency, more commonly known as scurvy. As centuries passed, physicians continued to grapple with deadly effects of the disease until its source was discovered by James Lind, the Scottish physician, in 1747 [1].

In an attempt to discover the source of the disease, Dr. Lind performed an experiment on twelve patients, each of whom had scurvy. He provided each patient with different acidic supplements, such as lemons, garlic or vinegar. The garlic had no effect, those treated with vinegar recovered much slower, and the patients provided with the citrus fruits were cured quickly and efficiently [1].

After Dr. Lind's findings, it became common practice for sailors to travel with crates of lemons, limes and kale to prevent the widespread malady throughout their long voyage. As a result, thousands of lives were saved. Captain James Cook is most noted for never losing a passenger to scurvy due to the meticulous precautions he took before embarking on each voyage. Before each departure, he loaded crates of lemon juice onto the ship, eventually causing the nickname "limeys" to become the prevalent term used for describing sailors.

However, well before sailors were afflicted, the Rabbis looked to find cures for the devastating illness, caused by a deficiency in vitamin C (ascorbic acid), existent amongst their villages. In the Babylonian Talmud, a disease known as *tzafdinah* is characterized through bleeding gums as its primary symptom. *Rashi* notes that *tzafdinah* is a life threatening disease originating in the mouth and ending in the intestines, and in essence it is "a sickness of the teeth and gums" [2]. Rabbi Judah, a sage familiar with the first hand effects of scurvy suffered seven years from its brutal effects. In this instance, however, the Talmud uses the word *tzipparana*, indicating a variation of scurvy [3].

In Yoma (84a), *tzafdinah* is discussed in reference to Rabbi Yochanan's suffering. The *Talmud Yerushalmi* (Shabbat, 14:14,30) delineates the story in which Rabbi Yochanan met with a Roman matron to receive a remedy for his discomfort caused by scurvy. She prepared a special

remedy that consisted of "the water of leaven, olive oil, and salt," according to Rabbi Acha, and "geese fat smeared with a goose feather" according to Rav Ashi. Abaye mentions that he tried all these suggestions, but remained uncured until an Arab passerby suggested "tak[ing] the stones" of unripe olives, burning them in a fire and placing them along the gum line. The *Gemara* attributes the disease to the ingestion of "hot wheat foods and remnants of fish hash and flour [2]." Dr. Fred Rosner references a cure for *tzafdinah* noted in Berachot 40a by Rabbi Yochanan who taught: "he who becomes accustomed to eating mustard every thirty days keeps illnesses out of his houses (abdomen)" in regard to scurvy [*Shabbat* 65a] [3].

The Talmud *Yerushalmi* (Shabbat, 14:14,30) delineates the story in which Rabbi Yochanan met with a Roman matron to receive a remedy for his discomfort caused by scurvy.

Since *tzafdinah* can be fatal, the Torah takes measures to protect its believers. In the *Mishna Yoma* (8: 6) the laws of the Sabbath are taken into account when dealing with a life-threatening illness. In this passage, Rabbi Matthia ben Cheresch teaches that if one has a pain in his throat, he may medicate himself on the Sabbath. Maimonides interprets this to mean that the disease in question pertains to rotting gums and if left untreated, the palate will rot as well. Thus, one may use medication for *tzafdinah* on the Sabbath since it is an issue of life and death [2].

Although scurvy and its deadly effects are no longer a mystery of the past, the disease is still quite prevalent in the lives of "the urban poor, the elderly, and chronic alcoholics" [4]. Those with cancer and chronic renal failure are

especially subject to the disease [4], and smokers increase their needed daily intake of vitamin C from 30% to 50% [5]. “Pregnancy, breast-feeding, and surgery” additionally increase the level of vitamin C necessary for everyday functions. Furthermore, scurvy may occur in those who exclusively consume particular foods such as “dried meat, tea, toast, and canned vegetables” [5].

Scurvy adversely affects “blood vessels, eyes, gums, kidneys, muscles [and] teeth” [1]. In its early stages, after several months of dietary inadequacy, the vitamin deficiency can be manifest as bleeding around the gums and under the skin [5]. The gums become swollen and inflamed and appear spongy [6]. Further vitamin C deficiency may result in “irritability, depression, weight loss, fatigue” [5]. A patient may also encounter “malaise and weakness” [4].

It is uncommon for infants to develop scurvy, as breast milk and infant formulas contain sufficient levels of vitamin C [5]. However, if infants do in fact contract the disease, severe complications ensue and include “fever, diarrhea, loss of weight, and vomiting” [6].

In general, progression of the disease leads to the fragility of small blood vessels in the skin and other tissues potentially leading to bruising and breakage of these areas [6]. Cases that detail a severe inadequacy of the vitamin can result in a depressed blood volume as a result of intestinal hemorrhages [6]. Advanced stages of scurvy can lead a person to become edentulous while kidney and intestinal malfunction can be fatal [1]. Anemia may occur and wounds will heal slower. Late manifestations of vitamin C deficiency are most commonly noted by “edema, oliguria, neuropathy, intracerebral hemorrhage, and death” [4]. However, patients without teeth do not have their gums affected and those with good dental hygiene may not encounter gum lesions [7]. Scurvy can be diagnosed through ascertaining a decreased

plasma vitamin C level, generally below 0.1 mg/dL [4].

Vitamin C is necessary for the body to function as it “is essential for the formation of bone and connective tissue [which binds other tissues and organs together]” [5]. Additionally, it acts as an aid in absorbing iron into the body as well as healing burns and wounds. Because vitamin C is an antioxidant, it enables the body to protect itself from free radicals which are “reactive by-products of normal cell activity” [5]. Furthermore, vitamin C is crucial in producing the hormone necessary to regulate metabolism speed [1] and is integral for proper collagen synthesis, which leads to effective “dentine formation” to prevent the loss of teeth [8].

Twenty-first century recommendations for the protection against scurvy require the daily intake of 10 mg of vitamin C [7]. Diagnosed patients should increase their daily intake from 100 to 200 mg and 500 mg in severe cases. Upon intensive treatment, symptoms should disappear within two to three days and bone disorders are expected to heal in up to three weeks [9]. Suggested sources of vitamin C include broccoli, Brussels sprouts and green peppers. One should take note that vegetables do not retain their vitamin C content when cooked [6] and subsequently canned vegetables lose large portions of their healthful content [5].

Current suggestions indicate that mustard may be used as a possible cure for Scurvy, in sync with a fourth century remedy prescribed by Rabbi Yochanan [3]. Thanks to the brilliant minds of the Talmudic sages, experienced sailors, and early physicians, scurvy’s life threatening effects remains a nightmare of the past. Today, it is rare to develop scurvy except in impoverished communities due to malnutrition. Fortunately, we now know that vitamin C, available in simple citrus fruits, is the answer to this age-old public health dilemma.

ACKNOWLEDGEMENTS

I would like to extend my sincere gratitude to my parents for their constant support and encouragement throughout my educational career. I would also like thank Dr. Harvey Babich for his guidance throughout the writing of this article as well as Rabbi Gershon Gewirtz for editing this manuscript and reviewing it for its Torah content.

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