

## REVIEWS

## WINE AS A MEDICINE IN ANCIENT TIMES

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## ABSTRACT

The history of wine use as a medicine dates back to antiquity. However, it has been rediscovered and reliably confirmed by current medical research. It is believed that wine is among the first documented remedies known and used by humans dating back to a period before 5000 BC. Preserved to date evidence of the medical use of wine in ancient times is very limited and is related to the development of different cultures and ancient civilizations. The article chronicles the more important periods of the history of the use of wine for medical (healing and prophylactic) purposes.

The first evidence dates back to the time of the Mesopotamian culture, when the world's oldest Sumerian Pharmacopoeia - clay tiles, some of which contain wine prescriptions for therapy, was created. The next important documentary evidence is found in the Sino-Tibetan Pharmacopoeia, the Egyptian Medical Papyri, the Bible, the Sacred Book of the Jews *Talmud*, and the ancient Indian medical texts of Ayurveda. In ancient Greece, the first evidence of the healing effects of wine is found in the two poems of Homer *Iliad* and *Odyssey*. With the development of medical knowledge at the time of Hippocrates, the therapeutic use of wine expanded. Hippocrates included wine in the diet of almost all diseases, especially during the recovery period. Afterwards, the principles of wine therapy continued to be topical, although they were the subject of a heated debate during the Greco-Roman period, Galen's era, and even the Byzantine era, when the influence of Arab medicine began to manifest itself more and more.

**Keywords:** *wine as a medicine, ancient times, ancient wine, therapeutic effects of wine, medicinal use of wine, medicinal drink*

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Knowledge of the healing properties of wine and its use in medicine dates back to ancient times, but it has been rediscovered and scientifically confirmed in modern age. Archeological evidence suggests that wine is among the first documented healing means used by humans dating back to a period before 5000 BC.

Since ancient times wine has been seen as a sacred drink that acts as a link to the divine. It is no accident that one of the most ancient civilizations on the Balkans - that of the Thracians whose love for

wine is proverbial - has raised the wine into a cult, using it as a mandatory attribute during feasts and divine rituals. That is why the people of the ancient world believed that Dionysus, the god of wine, was a Thracian, and, in his honor, the Thracians placed images of him on coins, amphorae, rhytons and other wine vessels. The earliest information about Thracian wine is revealed in the earliest ancient Greek poem by Homer *Iliad*, which mentions how every day ships from Thrace loaded with wine carried it to the Greek camp in front of Troy. In Homer's *Odyssey*, the wine of the Thracian king Maron, grandson of Dionysus, emits a wonderful scent and is called a „divine drink“.

Although the ancient authors praised the unique qualities of the Thracian elixir, the ancient Greeks considered Thracian wine to be dangerous, even „poisonous“ and therefore diluted it with water (even seawater). Aside from adding water to make it „more cultivated,“ they added healing herbs, spices and honey for therapy. A little later, recipes of wine mixed with herbs used both for therapeutic purposes and for food processing were also found on the papyri of ancient Egyptians.

The existing literary evidence of the healing properties of wine known from antiquity is very limited. In most literary sources of that time, only separate paragraphs or separate pages are found on the subject. In the *Ancient Egyptian Medicine* of Nunn, a prominent physician and egyptologist (1), for example, there is a paragraph in which wine is included in three lists of drugs whose action is, respectively, cleansing, spasmolytic (relaxing uterine muscle contractions) or recommended for symptomatic cough treatment. The fourth chapter of Riollay's book (1783) about Hippocrates, called *For the Wounds and Ulcers*, discusses the beneficial effect of wine on tears and other types of wounds (2), and in Galen's *Hygiene* there is a separate chapter of three pages describing the medicinal qualities of wine known at that time (Chapter V “A Chapter of Wine”) (3). Some aphorisms that have been preserved since Hippocratic medicine (4) are also devoted to wine. Comprehensive publications on the subject have only appeared in the last century - Professor Beven (5), Dr. Peter Bourke (6), Dr. Eric Skovenborg (7), but the only more profound study on this subject was made by Dr. Salvatore Lucia (8). As a well-known research-

er of the history of wine in medicine and an excellent clinician, he devoted several wine monographs to the wine: “Wine as Food and Drug” (1954), “Wine and Digestive System” (1970), “Wine and Your Welfare” (1971).

## CHRONOLOGY OF THE MEDICAL USE OF WINE IN ANCIENT TIMES

The use of wine for medical purposes has a long history that covers many cultures and ancient civilizations. It is usually assumed that the first wine was produced in the Balkan countries - on the east coast of the Black Sea, in today's Georgia, around 9000 BC, and according to other sources - in ancient China (9,10). From the Middle East along the rivers Tigris and Euphrates traditions related to the cultivation of varieties of grape vines and grapes, as well as wine production, were transported to Mesopotamia and thence to Persia (today's Iran) (9). According to Sir John Malcolm (1789-1833), the first authentic historical evidence of wine production came from the age of ancient Persian culture (9). In Persia there is a belief that wine was discovered by chance at the time of King Jamshid, who tasted the fermented fruit juice of grapes enclosed in jars and experienced so much delight that he named the „poisonous“ liquid „Royal medicine“.

## MESOPOTAMIAN CULTURE (C. 5000 - 1400 BC)

First data on the medicinal use of wine are found in the most ancient medical document - the *Sumerian Pharmacopoeia* found in Nippur only at the beginning of the last century. It contains stylized paintings, known as pictograms, dating back to about 2100 BC. Pictograms are clay tiles with prints and signs printed on them that resemble architectural ornaments or some sort of decoration. It turns out, however, that these signs are part of an ancient and advanced written system - the Sumerian writing. Some of the pictograms have documented the earliest information about the medical use of wine. Wine mixed with other medicinal ingredients was recommended for the treatment of certain diseases, for example, sweet wine with honey for cough or wine ointments for skin diseases (11). „Tabatu“ is the first medicinal drink documented in the *Babylonian Pharmacopoeia*, prepared from small amounts of fer-

mented fruit juice or wine mixed with water (6). The Babylonian pharmacopoeia is extremely extensive. It includes 250 types of medicinal plants, 120 minerals and 180 types of medicinal preparations, as well as solvents of the active ingredients called menstruum, including wine (6,12).

### ANCIENT CHINA (C. 3800 BC - 220 AD)

In ancient China, alcoholic beverages, including wine, were also used as menstruum to dissolve other ingredients: plant, mineral, some medicines, and even internal organs of animals thought to have a curative effect. Franz Hübotter (1957) in his *Sino-Tibetan Pharmacy and Recipes* includes 87 recipes, 19 of which are prepared with wine (13). More popular examples include: a mixture of wine, lizard liver and locust skin to induce abortion by rubbing on the navel; placenta of donkey and wine for alcoholism; black cat liver, mixed with wine for malaria; a strong mix of hash and wine for narcosis (14). At that time opium, which was still not applied in European medicine, in China was usually mixed with wine to achieve a stronger drug effect. Hübotter (13) also notes that the wines used for curative purposes are produced from cultivated grapes from the European grape vine (*V. Vinifera*) and not from grain or local wild grapes.

### ANCIENT EGYPT (C. 3000 - 332 BC)

Wine is an integral part of ancient Egyptian medicine. In Egyptian medical papyri dating from around 2000 BC wine is also known as menstruum for various medicinal ingredients - plant, animal or mineral. The Egyptian medical papyri of that time, containing data on the healing properties of wine, are:

- ◆ Kahun Gynecological Papyrus, written in 1900 BC
- ◆ Edwin Smith Papyrus – c. 1550 BC
- ◆ Ebers Papyrus – c. 1500 BC
- ◆ Hearst Papyrus – c. 1500 BC
- ◆ Papyrus from London - 1350-1100 BC
- ◆ Papyrus from Berlin - 1350-1100 BC
- ◆ Brugsch Papyrus - 1350-1100 BC

The curative wines of ancient Egypt were made mainly from grapes, but some were obtained from

dates or palms (15, 16). Apart from data on the beneficial properties of wine, Egyptian medical papyri are an important source of information about the development of Egyptian medical practice as a whole. They contain hundreds of specific prescriptions with wine, some of which even feature combinations of healing preparations. Some of these prescriptions have been found to be copied from even earlier medical records dating back to 2550-3400 BC. This makes them the most ancient medical evidence for the use of wine as a medicine (8).

In the Ebers Papyrus (1500 BC), for example, wine or medicinal ingredients dissolved in wine are recommended for asthma, constipation, epilepsy, even for the prevention of jaundice when “rather than drinking contaminated water it is useful to use wine” (8,9). It was believed that wine improved digestion and cleansed toxins (8).

The alcohol content of healing grape wines at that time was high enough to better extract the plant alkaloids. This is shown, for example, in recipe no. 287 from the Ebers Papyrus. It is recommended to tone the heart, but to achieve this effect it is necessary before drinking, the wine with the wheat germ set in it “to stay overnight to make it better” (8). Thus, the wine has a stronger effect and at the same time “reduces the unpleasant sensation of the drug, and the mild intoxication that is caused relieves the burden of many other complaints” (8). Prescription no. 804 in the Ebers Papyrus also includes wine and is recommended to stimulate delivery, and the toning (restoring) effect of wine is appropriate for “severe weakness” (Ebers 326-35). Wine was an indispensable ingredient in prescriptions for anorexia, for the treatment of cough (Ebers 190, 305-325, Berlin 29, 31-34, 36-47, Hearst 61) (7). It was used therapeutically in the form of ointments, enemas, „in dressings to prevent infections“. Externally applied skins of pressed grapes were also effective and used for example in fever or “limb swelling” (Ebers 162-163).

### BIBLICAL TIMES (C. 1220 BC - 70 AD)

During the Biblical era, wine was mainly used as a sedative and antiseptic agent, but was also known as menstruum. This is documented in the *Sacred Hebrew Book Talmud* (536 BC - 427 AD), in the *Old Testament* (c. 400 BC) and in the *New Testament* (c. 1st

century BC). In the Old Testament (Genesis 9: 20-21) there is a statement that after the Flood Noah planted the first vines and was intoxicated by the fermented fruit juice of the grapes. Jacob uses wine to reduce Isaac's vigilance, and according to King Solomon, wine is the second greatest pleasure for man after the kiss between two lovers (9). It is not accidental that one of the first miracles of Christ is the conversion of water into wine at the wedding in Cana. The healing power of wine is perceived in the words with which St. Peter turns to Timothy: „Do not drink more water, but use wine for your stomach.“ In the parable of the Good Samaritan (Luke 10: 30-37), Jesus also points out the healing properties of wine: „The good Samaritan bound the wounds of the injured, and poured over them a mixture of wine and olive oil to prevent the infection.“

In the biblical documents it is reflected that the correct use of wine is of importance for its healing effect. Isaac condemns people who start drinking in the morning and get drunk (9). A quote from the Old Testament reads: „Wine consumed within normal limits is a joy for the body and the heart“ ... „A moderate drink is health for the body and the soul“ (9). One of Talmud's postulates claims: „Wine, taken in moderation, stimulates appetite and has a beneficial effect on health ... Wine is the best medicine ... When there is no wine, drugs are needed“.

### ANCIENT INDIA (C. 2000 BC - 1000 AD)

The earliest information about the development of medicine in India dates back to around 2000 BC. Medical practice in ancient India is believed to have developed independently of Mesopotamia, Egypt and Greece. During the Vedic period of Indian history (2500 - 200 BC), wine whose origin is associated with the region around the Valley of the Indus River was revered as a liquid God Soma, which had high healing properties. In *Charaka Samhita*, one of Ayurveda's ancient medical texts, it is postulated that the wine „revives the mind and body of man. It is an antidote to insomnia, grief and fatigue ... it causes hunger, happiness and good digestion ... If it is taken as a medicine rather than for intoxication, it acts like Amrita (Soma) and heals the flow of fluids in the human body. Wine is a natural food, but when it is taken in an unlimited amount, it is a disease, and when

it is taken properly, it is like Amrita, an immortal drink (17).

Ancient Indians are known as avant-garde surgeons. They had a large number of healing preparations and knew about 760 medicinal plants that they used during operations, in enemas, gargles, or prescribed in diets, baths or inhalations. They were among the first to apply wine as an anesthetic. This is illustrated in a quotation from an ancient Sanskrit medical text: „... the patient must eat whatever he wishes and drink wine before the operation, so that he does not lose consciousness or feel the operation“ (18).

### ANCIENT GREECE (C. 900 - 100 BC)

Ancient Greeks saw wine as an integral part of their daily diet, as it stimulated appetite and was a source of valuable nutrients for the health. These qualities of wine are noted in the ancient Greek poems of Homer *Iliad* and *Odyssey*.

### HOMERIC TIMES (C. 850 BC)

In both Homeric poems, wine is mentioned not only for its curative properties, but heroes such as Achilles and Odysseus recommend it as a means of keeping the tone of the body and for more strength.

### HIPPOCRATIC TIMES (C. 450 - 300 BC)

Hippocrates, one of the leading physicians of antiquity, recognized as the father of modern medicine, used wine extensively for various healing and prophylactic purposes: in wound dressings, as a nourishing drink, a fever-reducing agent, a cleansing agent or a diuretic. In his work on the treatment of various types of wounds, Hippocrates notes that „wounds should not be moistened with anything other than wine.“ Wine is „a good remedy for wounds as it protects against infections“, and the polyphenols and alcohol in it are good anesthetics (6). Since infections were the most common cause of death in the ancient world, doctors in that period were the first to treat wounds with surgical probes disinfected with wine or vinegar (19).

„White wines are more diuretic, and wines rich in tannin - antidiarrheal ... Sweet red wine compared to the white better helps expectoration.“ According to Hippocrates, dark wines are „drier“ because

“they are not completely eliminated from the body - neither with feces nor with urine or saliva, but because of the heat they emit, they draw liquids from the body.” This is the earliest hypothesis for the anti-diuretic action of tannin-high wines - an ingredient that suppresses intestinal motility, saliva release and other glandular secretions (20).

According to Dr. Salvatore Lucia (8), Hippocrates' healing prescriptions are based primarily on his rational observations on the patients' condition during their therapy and following strict hygienic rules. Hippocrates recommended the use of wine in the regimen of almost all acute and chronic diseases, especially during the recovery period. He also used wine for diseases of the nervous system, for example in meningitis, when it was “important to add sufficient water to the wine even if the patient has no fever to ensure normal fluid exchange in the body.” He believed that by varying the proportions of water “the dose of wine changes” and did this according to the patient's illness and needs.

Hippocrates also believed that in order to restore harmony to the body after illness, three conditions were needed: proper diet, fresh air and exercise. In his *Regiment* he advises to take the “Kykeon” nutritional dish, prepared from wine, barley and milk during the convalescing period (21,22).

Other prescriptions of Hippocrates for healing and prophylactic use of wine are:

“Infants should be bathed in warm water for a long time and given a little diluted wine. The wine must be of a type that does not cause stomach stretching and cooling. This is necessary to prevent convulsions, for better tanning of the skin and for faster growth” (22).

“For a stubborn ulcer, sweet wine and much patience are enough” (7).

“Wine removes the feeling of hunger” (4).

“The pains in the eyes are treated with wine by cleansing and bathing ... In eye pain after receiving pure wine and washing with warm water, the vein needs to be opened” (4).

“During the illness it is useful for the patient to take honey and water, and occasionally wine” (2).

The ancient Greek philosophers Socrates, Plato and Aristotle, contemporaries of Hippocrates, were also well known connoisseurs of wine. Aristotle, like

Hippocrates, believed that mental illnesses were not caused by “evil spirits” but were physical disabilities, and claimed that melancholy was treated with wine, aphrodisiacs and music (21,22).

After Hippocrates, the medical doctrine in ancient Greece was further developed by many of its disciples and followers who managed to preserve the classic principles of wine therapy.

Theophrastus of Eresus (372 - 287 BC), a student of Aristotle, is the author of two major scientific works on medicinal plants. They summarize his knowledge of the healing properties of various plant species whose mixes with wine are prescribed for therapy (6).

Mnesitheus (320-290 BC) was a well-known physician from Athens and the author of the *Diet and Drink* treatise. In it, he notes about wine: ... “In medicine, it is most useful, it can be mixed with other liquid medications and helps in illness ... While dark wine is most beneficial for body growth, white wine is the best diuretic, and yellow wine is dry and better for digestion” (8). On the basis of these observations and conclusions, Mnesitheus, for the first time, predicted the higher content of vitamins in red wines - a fact that was scientifically confirmed by Margan only in 1939.

Athenaeus (170-230 BC), a Greek-Egyptian physician from Naucratis, discussed the healing properties of wines from the region of Mareo, highlighting their strong diuretic effect (7).

Between 300 and 50 BC, the center of ancient Greek medicine moved to Alexandria, where Erasistratus (300-260 BC) founded a school for progressive doctors called Erasistrateans. They favored and prescribed “light laxatives, barley and water mixtures, and wine in low doses” for therapy. In the 1st century BC, the followers of Erasistratus founded a medical school in Smyrna, which was run by another famous ancient Greek physician Hicesius. He wrote the book *De Conditura Vini*, which described the way of preparing the curative wines. Apollonius of Citium (81-58 BC), a contemporary of Hicesius, was also the author of a treatise on the healing properties of wine. Cleophantus, a well-known physician from Alexandria, recommended wine diluted with cold water as antipyretic fever therapy (8).

On the basis of wine the Greeks also developed their healing antidotes known as Theriacs and Alexipharmics - preparations that continued to be used in medical practice even in the Middle Ages. Theriacs were recommended for poisonous bites or stings, and Alexipharmics were antidotes for poisoning with food and drink. Both terms were introduced for the first time by Nicander (190-130 BC), a famous Greek physician and poet. Another great defender of the use of healing antidotes was King Mithridates (132-63 BC). Empirically, by using wine as a menstruum, he created his own antidote called Mithridatum, neutralizing the action of various poisons in the body (6).

In summary, Hippocrates' followers broadened and further developed the medical knowledge of the curative effects of wine and defended its use as a prophylactic and therapeutic tool. Their views remained relevant during the Greco-Roman period when wine became a most important therapeutic agent.

### GREEK MEDICINE IN ROME (C. 100 BC – 100 AD)

With the establishment of Greek medicine in Rome (after the destruction of Corinth by the Romans), the therapeutic use of wine became a topic of heated debate (23). Doctors who supported the Greek principles of therapy and recommended wine for healing purposes were known as Physikos oinodotes. The more popular among them are: Cato the Elder (234-149 BC) who widely recommended wine for the therapy of various diseases; Asclepiades (c. 200 BC) was known for its wine prescriptions; Zopyrus (around 80 BC) used wine as a menstruum for the preparation of the medicinal herb „Ambrosia“; Menecrates of Tralles (c. 1st century BC) was the doctor of the Roman Emperor Tiberius. He was also a fan of wine therapy, thus demonstrating approval of the Greek influence in medicine; Celsus (25 AD - 37 AD) is the author of *De Re Medicina*, which summarizes the therapeutic effects of wine. He drew attention to the various healing properties of wines from different regions in Greece and Italy; Pliny the Elder (23-79 AD), a famous Roman scientist, statesman and doctor, is the author of a treatise on wine *Naturalis Historia*; Dioscorides (c. 77 AD), a Greek army surgeon, recommended wine as „Materia Medica“ for various types of injuries. In his work

*De Universa Medicina* he describes over 1,000 types of drugs, including a preparation from the mandrake plant, whose roots are boiled in wine. Approximately 200 years later, another Greek physician Apuleius (24) reported the widespread use of this drug in the amputation of limbs.

### THE ERA OF GALEN (C. 100 – 400 AD)

Galen (131-201 AD) was a prominent Greek physician who has made a significant contribution to the development of ancient Greek medicine and this places him alongside Hippocrates. As a doctor of the gladiators, he handled the various types of wounds, tears, and amputations with wine to prevent infection (6, 22). His wine blends, called „Galenicals,“ dominated European medicine until the late Middle Ages. He created a catalogue of wines from different regions, describing their specific chemical characteristics and physiological effects. In his work *De Sanitate Tuenda* wine is recommended as particularly suitable for the treatment of the elderly. Galen notes: “for old people wine is most useful” (3).

Other physicians from Galen's time, followers of the therapeutic use of wine are: Athenaeus of Attalia (41-54 AD), Aretaeus of Cappadocia (2-3 century AD), Athenaeus of Naucratis (3 century AD), Oribasius (325-403 AD) and others. Athenaeus of Attalia founded a medical school where wine was studied as the main therapeutic and recovery remedy: “In small doses, the wine awakens the Pneuma or breathing and has a good tonic and restorative effect”. The views of Athenaeus found continuity with other Greek doctors such as Archigenes, followed by Aretaeus (the most famous physician after Galen). Aretaeus is the author of a comprehensive medical textbook, *The Therapeutics of Chronic Diseases*, which became famous for the very precise description of the diseases. Italian wines were recommended there as a main therapeutic agent.

With the expansion of the Roman Empire, the traditions of growing different grape varieties and winemaking also spread to other areas of Europe. During this process, Roman generals, such as Julius Caesar, advised their soldiers to drink wine in order not to get sick, for more power and against dysentery (8).

**BYZANTINE ERA (C. 400 – 700 AD)**

After the transfer of the Byzantine capital to Constantinople, there remained few prominent doctors, followers of Galen, who continued the Greco-Roman traditions in medicine. They spread the principles of wine therapy even during the era of total intellectual stagnation that covered Europe after the fall of the Western Roman Empire. One of the more commonly known physicians from this period is Aëtius of Amida (502-575 AD), author of the medical text *Tetrabiblion*, which recommends the use of red wines for „better health and recovery“ (25). „An old sweet aromatic wine with a slightly sour taste“ was recommended against nausea in pregnant women, (25). Alexander of Tralles (525-605 AD) was another famous Byzantine doctor who „prescribed“ wine for some mental illnesses. Against dandruff he recommended ointments with wine, then washing with salty water. Paul of Aegina (625-690 AD) continued the ancient Greek tradition of wine therapy at a time when Arab culture was spreading ever wider and had a strong influence on the development of Western medicine.

In conclusion, the therapeutic effects of wine known and used in ancient times and during antiquity are summarized as follows:

1. Antiseptic;
2. Sedative;
3. Hypnotic;
4. Anesthetic;
5. Appetite-stimulating;
6. Toning;
7. Antianemic;
8. Improving digestion;
9. Cleansing;
10. Antidiarrheal;
11. Diuretic;
12. A medium for dissolving other therapeutic ingredients;
13. For making compresses;
14. Improving the general health of the elderly.

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