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**DENTAL TREATMENT-RELATED PROCEDURES IN
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<https://doi.org/10.5281/zenodo.18373951>**ARTICLE INFO**Received: 18th January 2026Accepted: 25th January 2026Online: 26th January 2026**KEYWORDS**

Stomatology, doctor, Ancient Egypt, India, China, Central Asia, treatment, dental diseases, prevention, caries, treatment, ointment.

ABSTRACT

This article analyzes and classifies the initial research on the study, development, and treatment methods of stomatology, one of the important branches of medicine, in ancient Eastern medicine. In particular, the specific features of dental diseases, their treatment, and prevention in ancient China, India, and Central Asia are shown. The article also focuses on the emergence and development of dentistry in Central Asia and some aspects of natural treatment methods.

As is known from scientific literature, research, and available sources, dentistry is considered a branch of medical science, and the Greek word "stoma" means "mouth" and "logos" means "study." That is, dentistry is an important branch of science aimed at treating and preventing pain in human teeth, their structure, oral cavity, jaw, and facial area. Along with the term "dentistry," the term "dentist" (from Latin dens, dentis - tooth. There is also a dentist from the French dentiste - tooth treatment), who is mainly engaged in the treatment and prosthetics of teeth. The difference between them is that a dentist is considered a qualified, highly educated doctor who fully treats the client and can even perform surgical operations. A dentist is a specialist with secondary and specialized secondary education who performs relatively simple therapeutic procedures.

It is known that teeth serve to tear off, chew, and hold food. Their health is of great importance for human health. A person has 32 permanent teeth, 16 on each of the jaws, which are divided into three types, each of which performs a certain function. Human teeth also play an important role in the precise pronunciation of speech sounds.

Treatments related to human health, in particular, toothache and its treatment, have existed since ancient times. In this case, people used various natural ointments. According to the data, the first dental treatments appeared 8-9 thousand years ago. As a result of archaeological excavations conducted in Pakistan in 2001, the oldest dental drill was found. Information was also obtained from the remains of 11 graves, indicating signs of treating people's teeth [1].

In the IV th century BC, the ancient Indian physician Susruta (Sushruta) provided information about dental diseases and their treatment methods, as well as more than 100



instruments used to treat these ailments, along with details on over 60 different diseases [2]. In medical science, Sushruta is known as the "Father of Surgery" [1].

The field of dentistry was also well developed in ancient Egypt. It was in Egypt that dental fillings and artificial tooth placement were first performed. It is known that in Egypt, toothpaste was made from eggshells. Later, dentistry began to develop in China, Japan, and Central Asia. In ancient times, treatment methods were used, starting with direct primitive, i.e., the simplest method of tooth extraction, through natural herbs and ointments. For example, 400 years ago, the German physician Cardanus treated a patient by exposing their mouth to moonlight for several hours, while Pliny of Rome preferred to mix sparrow or crow droppings with oil in the patient's aching dental ear. In ancient China, painful teeth were treated with an ointment containing a mixture of partially arsenic. In Japan, the teeth were moved with a small hammer and pulled out with a clamp or by hand.

In Central Asia, as in many other regions, in the past, medicinal herbs, folk remedies, **cauterization** (*pressing a damaged tooth with heated iron*) were used to treat teeth. Today, the term "**coagulation**" is used instead of the term "cauterization") and methods of tooth extraction. Unlike Europe, where archaic dentistry developed, in Central Asia, traditional methods based on knowledge of plant properties for pain and inflammation were preserved for a long time.

The main treatment methods are:

Traditional treatment: Various herbs and plants, such as tree bark, roots, or plant seeds, were used to relieve inflammation and toothache.

• **Using heated instruments:** If the pain was severe, cauterization, one of the oldest methods of affecting the dental nerve, was used.

• **Tooth extraction:** If other methods failed, dentists or related specialists, including barbers and blacksmiths, removed the diseased tooth using the simplest primitive tools.

• **Disease prevention:** Regular rinsing and cleaning of the mouth and oral cavity with medicinal plants is recommended. In ancient times, including in Egypt, dental hygiene existed, and the first toothpastes, consisting of various natural ingredients, were created [3].

Vivid examples of the high level of organization of public healthcare in Central Asia date back to the Samanid (IX th – X th centuries) and Karakhanid (XI th centuries) periods. In the most populous cities of this period, there were many hospitals and pharmacies where experienced doctors and pharmacists worked. In the VIII th – XIII th centuries, various caliphs and other rulers, in order to immortalize their names and strengthen their authority among the population, began to build state healthcare institutions for citizens not only in the capital and central areas, but also in the middle and small cities of the caliphate, including Merv, Bukhara, Samarkand, Gurgench [4].

The earliest surviving information about dental treatment is found in **Ali ibn Sahl Rabban at-Tabari's** treatise "*Garden of Wisdom*". The treatise describes the formation and growth of teeth, as well as tooth powder recipes and methods for treating bad breath. **Abu Bakr Muhammad ibn Zakariya ar-Razi's** work "*Kitab al-Hawi*" is also considered a famous work on dentistry in the Arab world. In his treatise "*Kitab al-Mansuri*" for the



first time since ancient times, the structure of teeth and the mechanism of the lower jaw are described. At the same time, ar-Razi cites various recommendations for methods of treating teeth and the oral cavity (for example, he knew that injecting various solutions and infusions into the ear supposedly helped prevent toothache, fumigated cavities with steam when burning teeth, and treated them with boiled oil).

The ideas of al-Razi were further developed by **Ali ibn Abbas al-Mayusi** in his book, which became famous in Europe under the name "*Book of the King*". In the chapter devoted to diseases of the entire tooth and oral cavity, Ali ibn Abbas also recommended burning diseased teeth and preferred this treatment to tooth extraction.

Known throughout Europe and the world as Ibn Sina, **Abu Ali Husayn ibn Abdullah ibn Hasan ibn Ali ibn Sina** entered the history of world civilization as a great philosopher, naturalist, poet, and statesman. At the age of sixteen, Ibn Sina reached the point of consulting with the most famous physicians of Bukhara. Ibn Sina's "*Canon of Medicine*" is a collection of all medical knowledge.

In his work "The Canon of Medicine," Ibn Sina gives several of his recommendations for the treatment of toothaches. Specifically, speaking about the anatomy of the human oral cavity and tongue, he emphasizes the presence of symptoms such as long teeth, sharp teeth, sensitive teeth, weak teeth, loose teeth, and tooth grinding, and also indicates their occurrence and treatment methods. According to the doctor, teeth can be treated, first of all, by maintaining a proper diet, using medications, and finally, by surgical treatment.

Among the causes of toothache, he mentions that the "tooth gnawing" - the "dental worm" - is a disease that makes its way between teeth. To remove the "worm," he recommended the following procedure: "Take four pieces of flax grass, two and a half onions, mix them with goat fat until they become dough-like, then prepare this dough weighing one dirham each, and place the heated ointment under the curtain covering the patient's head." To maintain the health of teeth, he recommended constant cleaning, rinsing the mouth after eating, avoiding the use of strong cleaning agents that destroy tooth enamel, instructed mothers to refrain from chewing hard objects, and recommended massaging the gums with fingers [5].

Ibn Sina recommended crushing aloe leaves and pouring the mucilage into the injured gums. The procedure was to be performed in the morning and evening before going to bed. A decoction prepared from the aerial part of mint is recommended for the treatment of mouth pain and gum inflammation. To prepare the mint decoction, 5-20 grams of dried mint were ground, and this powdered mint was boiled in water over low heat for 10-15 minutes. Then, it was prescribed to rinse the mouth several times a day using gauze [6].

Abu Ali Ibn Sina, in his work "The Canon of Medicine," emphasizes the importance of remembering eight rules for maintaining the health of teeth [7]:

- be careful when consuming perishable (prone to spoilage) beverages and foods (milk, salted fish);
- avoidance of permanent registration;
- beware of any halva and sticky fig-like tooth-clinging sweets;
- not to break hard objects with teeth;



- Avoid tooth-relieving substances as much as possible;
- not to drink extremely cold things, especially not to consume hot and cold things consecutively;
- constant cleaning of teeth without causing damage;
- also avoid other types of things that harm teeth

During his career, Ibn Sina recommended more than 800 medicines. Of these, 150 were used in subsequent periods. The methods described by Ibn Sina have been used for many centuries and have remained almost unchanged even in modern times, and his advice on the prevention of dental diseases remains relevant today.

Medieval medical institutions were also well-developed during the reigns of **Timur and the Timurids**. In the XIV th century, hospitals called "*Dor ush shifo*" ("*House of Healing*", "*Hospital*") were opened in Samarkand by Amir Timur. In these hospitals, experienced doctors not only treated patients but also taught them medical science.

Indeed, during the reign of Timur and the Timurids, state hospitals were built and operated in cities. In particular, the renowned scholar M.E. Masson noted that in the XV th century there were several hospitals in Herat, including two built by individuals related to the royal family. According to Khondamir (was a medieval historian, a contemporary of Navoi), these hospitals were restored in good condition during the time of Alisher Navoi [8]. Also, during this period, Timur organized the work of physicians and healers among his troops, which is reflected in the Tuzuk. In particular, Timur built mosques, madrasas, khanqahs, and hospitals for experienced physicians in all cities characteristic of his time [9].

According to sources, in 1480-1485, **Alisher Navoi** built a hospital called "*Shifoiya*" a madrasah called "*Ikhlosiya*" and a bathhouse called "Safoiya" in Herat. This hospital was considered a specialized medical institution, where treatment, disease prevention, cleanliness, hygiene, and separate classes for students were conducted [10]. In our opinion, this medical institution provided comprehensive treatment to patients. It is also possible that the treatment of dental diseases existed.

In short, various methods and treatments were used in different countries for dental treatment, pain relief, and prevention of its complications. In the conditions of Central Asia, where we live, there were modern forms of human dental treatment [11]. They used traditional treatment methods, from natural herbs and ointments to tooth extraction, to treat various diseases in the human body, including diseases associated with toothache.

It should be noted that Eastern medicine and the philosophy of the Islamic world prioritize a healthy lifestyle and cleanliness in the treatment and prevention of diseases in the human body. For instance, they believed that such vices as overeating, lack of movement, and excessive sleep lead to increasing illness, but a healthy lifestyle, namely eating in moderation, physical exercise, walking in fresh air, good mood, and cleanliness etiquette, are factors guaranteeing a person's continued health.

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