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Tongue Diagnostics: The Hidden Code that Speaks about Your Body

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Abstract

The tongue is an important organ of the oral cavity, playing a role in digestion, speech formation, and taste perception. Changes in its color and structure reflect the internal environment of the body and have diagnostic significance. Tongue diagnostics has been widely used in ancient medical practices, and modern research also confirms its role in the early detection of various diseases. According to traditional Chinese medicine, the tongue reflects the condition of different internal organs and serves as an important tool in diagnosis. Studies have found that changes in the tongue's color, coating, and structure are linked to the function of internal organs, metabolic disorders, and systemic diseases. This article examines the theoretical foundations of tongue diagnostics, its clinical significance, and its role in both modern and traditional medicine.

Keywords: Language diagnostics, language color, tongue coatings, traditional medicine.

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Introduction.

Historical Background. Tongue diagnostics was used as a key indicator in ancient medicine: by doctors from China, India, Tibet, and especially Central Asia. The works of Central Asian scholars such as Ar-Razi (865-925), Abu Nasr al-Farabi (873-951), and Abu Ali ibn Sina (980-1037) also recognized the importance of changes in the tongue in diagnosing diseases. Hippocrates, an ancient Greek physician and the father of medicine, noted that observing the condition of the tongue could be used to identify and diagnose diseases.

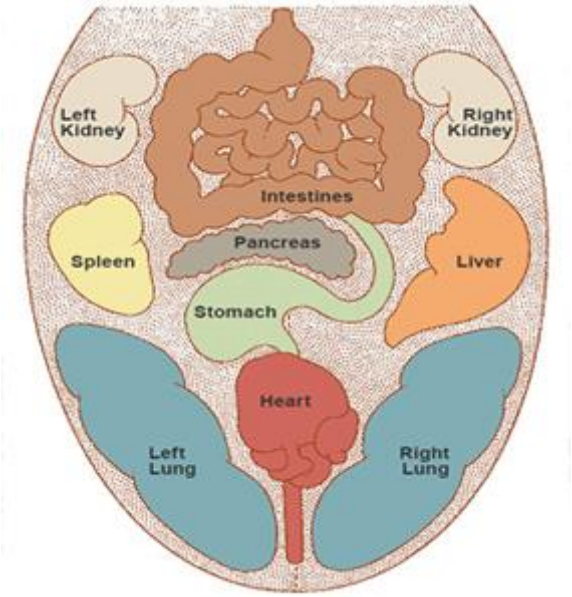


Figure 1. The connection of the tongue with organs [14]

Tongue assessment has been practiced since the Shang Dynasty (1600–1000 BC), and involves visually inspecting the color, shape, moisture, and movement of the tongue body, as well as assessing the color, thickness, distribution, and root characteristics of the tongue coating. According to traditional Chinese medicine theory, the tongue provides a geographical map of the organ systems [1].

According to traditional Chinese medicine, our tongue is divided into sections that correspond to a specific body organ. It is said that if there is any disturbance in the functioning of a body organ, this symptom will be reflected in the tongue.

That is why doctors have relied on tongue diagnostics to diagnose diseases. The tongue is like a mirror of the internal organs, meaning that pathological changes in the internal organs are reflected in the characteristics of the tongue. According to Traditional Chinese Medicine, the tip of the tongue is associated with the heart and lungs, the root of the tongue is associated with the kidneys and intestines, the left and right sides of the tongue are associated with the liver and gallbladder, and the middle part of the tongue is associated with gastrointestinal function (Figure 1) [2].

Diagnostic features of the tongue. The tongue is a muscular organ located in the oral cavity of the human body, which is involved not only in taste perception and the direction of food, but also in the formation of the speech process. The tongue of a healthy person is light pink in color and is covered with numerous suckers (papillae filiforme et conicae, papillae foliatae, papillae fungiformes, papillae vallatae) on the surface, tip, and edges of the tongue, giving it a woolen appearance [3].

The structure, blood supply, and innervation of the mucosa determine the clinical manifestations of pathological processes affecting the tongue. Most diseases of internal organs and body systems cause inflammatory processes in the oral mucosa, including symptomatic glossitis [4].

Examination of the tongue can provide clinical information about conditions associated with general systemic diseases and local changes that the patient can detect during self-examination. Identifying changes in the tongue as benign or as a sign of systemic disease is an important clinical skill. It is important for the physician to know and recognize the various diseases that affect the tongue [5].

When analyzing the condition of the tongue, it is important to pay attention to the quality and quantity of the existing coating. A healthy person may have a thin, white coating that is easily removed with a toothbrush or tongue cleaner. A white, dense coating, depending on the area of the tongue, can be a sign of an inflammatory process in a particular organ. It can also be a sign of endogenous intoxication

(constipation, accumulation of toxic and conditionally toxic macro- and microelements in the body, renal and hepatic failure, etc.) [6]. In gastrointestinal diseases, in particular, in the case of a stomach ulcer, a yellow coating is observed, in cases of gastric bleeding, dryness and yellowness of the tongue, while a dense white coating covering the entire surface of the tongue is observed in stomach cancer [7]. Normally, a healthy tongue is pink, and deviations from this norm can indicate various pathological conditions.

- A bluish tongue may indicate a lack of oxygen in the blood. This condition can be caused by a variety of factors, including insufficient oxygen delivery from the lungs, blood disorders, vascular diseases, or kidney disease [8].
- A red tongue can be caused by a deficiency in essential nutrients, such as vitamin B12 and iron, or dehydration [9].
- Poor oral hygiene or dry mouth can lead to bacterial accumulation on the tongue, which can cause it to turn green. Certain medical conditions, such as heart and respiratory diseases, hypotension, or vascular pathologies, can also cause the body's need for oxygen to be insufficient, causing the tongue to turn purple [10].

In addition, there is macroglossia, a rare condition characterized by an enlarged tongue. This enlargement can be caused by a variety of causes, including congenital defects and acquired diseases. The most common causes are vascular anomalies and muscle hypertrophy [11].

Also, atrophic tongue (smooth, red or pink tongue, shiny appearance) is observed in patients with iron, vitamin B12, folic acid, riboflavin deficiency; patients with Down syndrome, psoriasis, Melkersson-Rosenthal syndrome have a fissured tongue (deep fissures, bad smell, and food is trapped in the fissures) [12].

Patients with insomnia, which is associated with impaired digestion, have also been observed to have specific changes in the color and coating of the tongue. In an experiment conducted by Korean researchers, it was found that the color of the tongue of patients with insomnia was more yellowish than that of normal people, and the distribution of the coating of the tongue of normal people was narrower than that of those with insomnia [13].

Despite the above information, the accuracy of tongue diagnostics has been the subject of much debate and discussion among doctors, as the accuracy of tongue diagnostics depends on the patient's overall health, eating habits, medications, and environmental factors, and can vary between individuals.

Research Objective: To determine the compatibility of tongue-based diagnosis in traditional medicine with modern medical diagnoses and to study the possibilities of early diagnosis of diseases and early elimination of adverse conditions by determining the color, coating and shape of the tongue. Modern diagnostic methods, such as clinical examination methods, laboratory and instrumental examinations, use of tongue diagnostics.

A language depiction of one of the female patients in the rheumatology department. proving that together they help to increase reliability and accuracy.

Materials and research methods. 50 (100%) patients (24 (48%) men and 26 (52%) women) aged 18-77 years were randomly selected from the departments of Nephrology, Cardiology, Rheumatology and Vascular Surgery of the "National Medical Center" multidisciplinary clinic in Tashkent. However, 2 of them, female patients, refused to participate in the study. The tongue pictures of the remaining 48 patients were compared with the diagnoses made in their medical history using modern clinical and laboratory-instrumental examination methods, and the results were compared.

Below is a sample of the language description of one of the patients studied:

Patient No. 1.

Complaints: pain in the knees and joints, pain in the heart area, headache, general weakness, increased blood pressure, heartburn, abdominal distension, occasional pain in the abdomen, complaints of constipation.

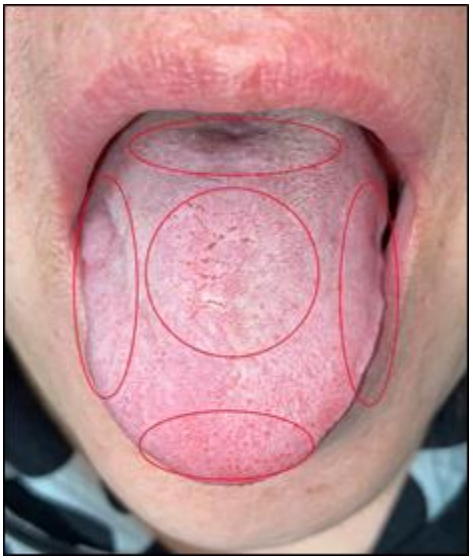


Figure 2. Tongue image of one of the female patients in the rheumatology department.

Diagnosis made using modern examination methods and laboratory tests:

Main: Bilateral coxarthrosis, rheumatoid arthritis.

Competitor: Diabetes mellitus stage 1, ischemic heart disease, Stable angina pectoris.

Complications: Chronic heart failure

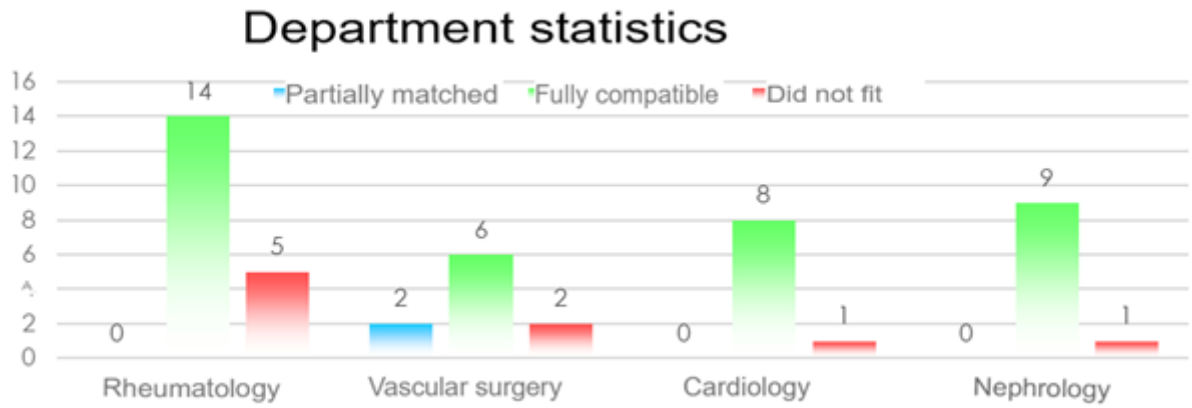
During the interview with the patient, the patient stated that he had cysts in the liver and kidneys, but he had no complaints. When the changes in the patient's tongue were compared with the image above (Figure 1), it was clear that the parts of the tongue where the changes occurred were exactly the same as the parts associated with those organs.

In this way, the complaints and diagnoses of the remaining 47 patients were carefully studied, and it was determined whether the changes in the tongue coincided with the part of the tongue associated with the diseased organ, and statistical data were compiled.

Results.

The statistical results are as follows:

The results were divided into 3 groups: partial matches, full matches, and no matches at all. Accordingly, out of 19 patients in the Rheumatology department, 14 matched, and 5 did not match. Out of 10 patients in the Nephrology department, only 1 patient's tongue image did not match the main diagnosis, while out of 10 patients in the Vascular Surgery department, 2 patients partially matched, 6 patients fully matched, and the remaining 2 patients did not match at all. It was found that out of 9 patients treated in the Cardiology department, only 1 patient did not match. According to general statistics, out of a total of 48 (100%) patients, 2 (4%) of the changes in the language partially corresponded to their diseases, and 36 (75%) of them fully corresponded, while the pathological conditions in the language of the remaining 10 patients did not correspond to their diagnosis.



Also, during the study, pathological conditions related to the digestive system were detected when examining the tongues of patients in the Rheumatology Department. Additional questioning revealed that they also had problems with the gastrointestinal system, but the patients themselves did not complain. Studies have confirmed that rheumatological patients also have gastropathies caused by the nonsteroidal anti-inflammatory drugs they are taking (These drugs cause dyspeptic syndrome, organic damage to the mucous membrane, and pathologies of the small and large intestines in patients taking them [15].). Although the patients did not complain of pain, after an esophagogastroduodenofibroscopy examination, due to changes in the tongue, it was confirmed that they had gastropathies. This has reduced the risk of future complications.

Conclusion: As we have already noted, not all changes in the human tongue may reflect a pathological process, because not all changes in the tongue are related to diseases, but also to the diet of people, chemicals and pigments in food products (the color of the tongue of a healthy person can also change under the influence of coloring substances in the food consumed), and medications taken. However, despite this, the patient's tongue can provide sufficient primary information about what is happening in his internal body. This allows us to quickly draw conclusions about the patient's condition and prevent them from undergoing unnecessary tests, thereby preventing them from wasting money. However, doctors still do not pay enough attention to tongue diagnostics. We can also learn this from the patients' words during our conversations, "No matter how many doctors we have visited so far, we almost never remember a single one of them saying, 'Show me your tongue.'" This was actually the purpose of the study, namely to further increase doctors' attention to tongue diagnostics, to prove that it is possible to save time by correctly selecting the necessary diagnostic tests based on the tongue condition of patients who come to the emergency room.

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