

## History of xerostomia

This is a part of the Encyclopedia of the History of Dentistry.

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*Initially submitted 28 March 2023; accepted for publication 15 April 2023*

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*Please cite this article as: **History of xerostomia. In: Encyclopedia of the History of Dentistry. Forrai J, Spielman AI eds. 2023. Doi: [10.32558/encyclopedia.dentistry.22](https://doi.org/10.32558/encyclopedia.dentistry.22); [10.17107/KH.2023.26.44](https://doi.org/10.17107/KH.2023.26.44)***

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## Abstract

Xerostomia means a decrease in saliva secretion and dryness of the oral mucosa. If the quality or quantity of saliva deviates from normal, it may be due to local or systemic disturbance with local and or systemic effects.

## Keywords

saliva, halitosis, salivary gland, tongue inflammation, dry mouth, xerostomia, secretion

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Dry mouth is often classified as a saliva-production disorder, but not all cases have a production deficiency. A dry mouth is a subjective symptom, and hyposalivation is measurable after a medical diagnosis. Based on its etiology, dry mouth can develop directly due to dysfunction of the salivary glands or due to indirect, non-salivary factors. The term is derived from the Greek ξηρός (xeros) "dry" and στόμα (stoma) "mouth". Saliva was one of the basic body fluids in the humoral pathology approach of ancient Greek medicine, besides phlegm, blood, and black and yellow bile. The interaction of the humors determined general health.

The direct cause of persistent dry mouth is the reduction or complete cessation of saliva production. The underlying causes are changes in hormone balance, endocrine diseases (i.e., diabetes mellitus, menopause), anemia, vitamin deficiency, and side effect of polypharmacy.

The Persian Avicenna, writing in *Al-Qanoon fi al-Tibb* (The Canon of Medicine), claimed a connection between dry mouth and the functioning of other organs. He proposed a three-pronged approach to treat xerostomia. The first is a lifestyle change. The second uses herbs and other natural remedies, and the third is treating with pharmaceutical preparations containing two or more bioactive substances (1).

Fauchard considered the changing composition and quantity of saliva to be one of the external causes of tooth decay. According to his theory, in addition to several harmful effects of tobacco, it also damages the

mucous membrane, and the smoke affects and reduces saliva production, which impairs the health of the teeth (2).

In 1887, Jonathan Hutchinson described a condition with symptoms of xerostomia and dysphagia, considering it a nervous system disorder (3). In 1888, Jan Mikulicz-Radecki (1850–1905), a surgeon, reported bilateral painless salivary and lacrimal gland swellings. The symptoms associated with keratoconjunctivitis sicca were called Mikulicz's disease. Later, it was reclassified as a variant of Sjögren's syndrome (4). Today, it is considered a benign plasma cell disorder. In 1888, WB Hadden (1856-1893) of London presented a similar case to the London Clinical Society: a woman unable to swallow with a dry mouth, dry, red, cracked tongue, and with so-called crocodile skin. No tears appeared when she tried to cry, but her condition improved with the cholinergic alkaloid pilocarpine. W. Stock (1874-1956), an ophthalmologist from Tübingen, described keratoconjunctivitis sicca in patients with extremely dry mouth (1924) (5). Three similar cases with uncertain etiology were described by Henri Gougerot (1881-1955) in 1925; dry mouth and conjunctival dryness. They were called Gougerot-Sjögren syndrome. In 1927, AW Mulock Houwer reported cases with a combination of keratoconjunctivitis sicca and chronic polyarthritis, and he recognized these symptoms as a syndrome (6).

The symptom of dry mouth due to non-oral causes was described by the Swedish ophthalmologist Sjögren (1899-1986); together with xerophthalmia and rheumatoid arthritis, the triad was called Sjögren's syndrome (7).

Xerostomia can also be caused by tongue inflammation, glossopyrosis, poor oral hygiene of denture wearers, fungal (*Candida*) infection, symptoms accompanying dermatological diseases, or consequent mucosal atrophy (lichen).

Several methods were devised to measure and diagnose dry mouth: sialometry, salivary gland scintigraphy, salivary gland biopsy, and various imaging diagnostic procedures (e.g., ultrasonography, MRI). They can be used non-invasively to examine the entire glandular and surrounding tissue and concurrently detect soft tissue pathologies.

## References

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1. Figure Side by side, dry (right side) and normal tongue.