Entitlement Eligibility Guideline
Salivary Gland Hypofunction Disorder (Xerostomia)

Date created: 22 January 2025

ICD-11 **code:** DA04.6

VAC medical code: 52707 Salivary gland hypofunction disorder (xerostomia)

Definition

Any significant change in saliva flow is referred to as salivary gland dysfunction. Salivary gland dysfunction can be an increase (hyperfunction), or a decrease (hypofunction) in the flow of saliva.

- Salivary gland hyperfunction, an increase in the flow of saliva, is known as sialorrhea. A common symptom of sialorrhea is drooling.

- **Salivary gland hypofunction (SGH) disorder** is a significant measurable reduction in salivary flow, also known as hyposalivation. A common symptom of hyposalivation is oral dryness.

Xerostomia is the subjective feeling or sensation of a dry mouth. Xerostomia is a symptom of SGH disorder; however, individuals may also have the sensation of a dry mouth in the presence of normal salivary flow (for example, mouth breathing).

Certain circumstances such as with dehydration, mouth breathing, depression, and/or anxiety may add to the sensation or perception of a dry mouth/xerostomia as a symptom, rather than as an established diagnosis.

Note:

- While xerostomia and SGH disorder are distinct and independent, for the purposes of this entitlement eligibility guideline (EEG), a diagnosis of xerostomia will be accepted when it meets the diagnostic criteria for SGH disorder.
- Xerostomia in the absence of hyposalivation is not a disabling condition for Veterans Affairs Canada (VAC) disability benefits purposes.

Diagnostic standard

Diagnosis

VAC accepts the diagnosis(es) of salivary gland hypofunction disorder from the treating dentist (DDS, DMD).

Diagnostic considerations

A diagnosis of SGH disorder (hyposalivation) is confirmed in the presence of unstimulated salivary flow rate (sialometry) below 0.1 mL/min. Sialometry is a measurement of saliva flow.

Sialometry of unstimulated saliva flow is performed with a simple office procedure of collecting saliva at rest. The most commonly used sialometry method is the "draining method," which is internationally accepted as a standard for measuring unstimulated whole saliva. Patients are instructed to first swallow all saliva then incline head forward and let saliva drip from lips into a prepared container, collector vial or graduated cylinder for five minutes. The collected saliva is then measured with a syringe and converted into mL/min.

Note: Where sialometry results are not available, a diagnosis of SGH disorder may be accepted if substantiated by clinical findings consistent with hyposalivation.

Anatomy and physiology

Saliva is a clear fluid containing mostly water with some electrolytes, mucus and enzymes. Saliva cleanses the oral cavity, maintains neutral pH by buffering acids, provides antibacterial and antifungal protection, and lubricates oral tissues.

Saliva is produced and excreted into the oral cavity by salivary glands with daily production between 0.5 and 1.5 liters.

- Unstimulated salivary flow is saliva secreted without stimulation. Normal unstimulated salivary flow rates range from 0.3 to 0.5 mL/min while awake, with a dramatic decrease during sleep.

- Stimulated salivary flow refers to the increase in saliva secretion with stimulation (chewing, taste, or smell) controlled by the autonomic nervous system. Sensory signals are sent to the salivation center in the brain by receptors in taste buds; tooth periodontal ligament(s); nose/olfactory (smell); and thermal sensors (temperature) which activate both parasympathetic and

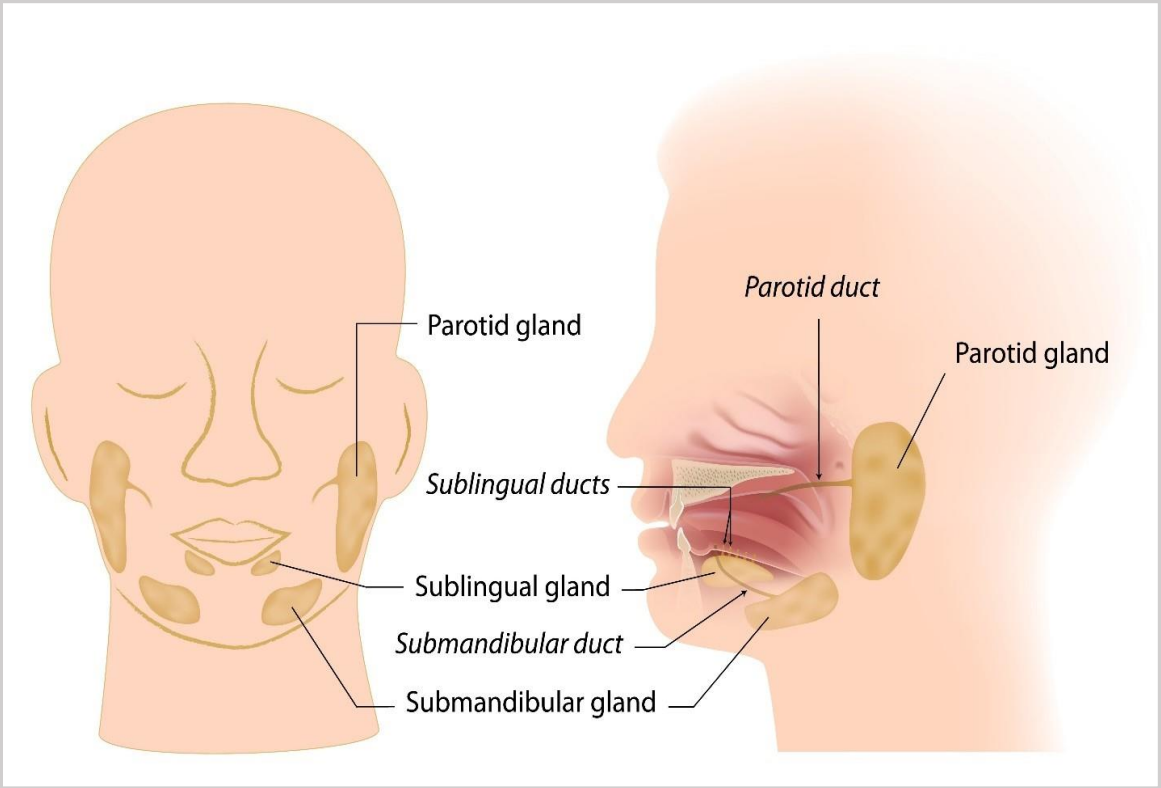
sympathetic innervation causing secretion of saliva from the salivary glands. The flow rate is dependent on the stimuli.

- Normal stimulated salivary flow rates range from 1.5 to 2.0 mL/min.

There are two types of salivary glands: the major salivary glands which produce most of the saliva, and minor salivary glands which produce less than 10% of saliva.

- Major salivary glands (Figure 1: Major salivary glands) include:
    - Parotid glands are located bilaterally in front of the ears. They secrete saliva from ducts known as *Stenson's ducts* opening near the upper second molar teeth. Parotid glands are the largest contributor to chewing-stimulated saliva secretion.
    - Submandibular glands are located bilaterally below the mandible. They secrete saliva from ducts known as *Wharton's ducts* opening below the tongue at the lingual frenum.
    - Sublingual glands are located bilaterally under the tongue, in front of the submandibular glands. They secrete saliva from multiple excretory ducts under the tongue directly into the floor of the mouth.
- Minor salivary glands are very small, numbering in the hundreds, and located throughout the mouth lining the oral mucosa of the lips, cheeks, tongue, and the roof of the mouth.

Figure 1: Major salivary glands



Illustrations of a front and side view of the human head, showing the location of the major salivary glands and ducts. These include the **parotid glands** (in front of the ears), the **submandibular glands** (beneath the mandible), and the **sublingual glands** (under the tongue). Saliva is released into the mouth through the parotid, sublingual, and submandibular ducts. Source: Veterans Affairs Canada (2024).

Clinical features

SGH disorder is a salivary gland dysfunction with a measurable reduction in salivary secretion (hyposalivation) causing oral dryness.

Clinical findings of oral dryness may include:

- mirror sticks to buccal mucosa and/or tongue
- frothy saliva
- tongue is lobulated/fissured
- tongue shows loss of papillae
- no saliva pools on floor of mouth
- glassy appearance of palatal mucosa

- smooth or altered gingiva
- food debris is found on palate (excluding debris under dentures)
- no saliva flow is noted with palpation of parotid gland and/or submandibular gland
- active or recently restored (within the last six months) cervical dental caries of more than two teeth.

SGH disorder can be caused by systemic diseases, medication, and radiotherapy of the head and neck.

Medication-induced SGH disorder/xerostomia occurs due to an adverse drug reaction to medications that affect the salivary glands. Certain medications that are anti-cholinergic, sympathomimetic, or diuretic in action, dependent on the dose, may affect the salivary glands. Any reduction in salivary flow is reversible and salivary gland function returns to normal after withdrawal of the medication.

Note: The prevalence of SGH disorder/xerostomia in patients receiving chemotherapy is about 50%, with salivary gland function typically restored within 6 to 12 months after treatment.

Radiation-induced SGH disorder/xerostomia occurs when the salivary gland tissues are damaged during radiotherapy of the head and neck. The tissue damage depends on the cumulative dose of radiation and the amount of salivary gland tissue included in the field. Salivary glands are affected within the first week of treatment and salivary secretion continues to decrease up to three months after radiotherapy. Doses higher than 60 Gray (Gy) usually lead to an irreversible severe SGH disorder.

Historically, epidemiological studies have not distinguished between the subjective feeling of dry mouth (xerostomia) and SGH disorder (hyposalivation). This has resulted in wide variation in the reported prevalence, with estimates ranging from 1% to 65% of the population. At the time of publication of this EEG, the scientific and health related literature estimates hyposalivation present in 10% to 20% of the adult population, with 30% of those individuals reporting xerostomia.

The prevalence of hyposalivation is more common in females and increases with age, particularly in individuals taking more than one medication.

Entitlement considerations

Section A: Causes and/or aggravation

For VAC entitlement purposes, the following factors are accepted to cause or aggravate the conditions included in the Definition section of this EEG, and may be considered along with the evidence to assist in establishing a relationship to service.

The factors have been determined based on a review of up-to-date scientific and medical literature, as well as evidence-based medical best practices. Factors other than those listed may be considered, however consultation with a disability consultant or medical advisor is recommended.

The timelines cited below are for guidance purposes. Each case should be adjudicated on the evidence provided and its own merits.

Factors

1. Having **systemic disease** at the time of clinical onset or aggravation of SGH disorder. Examples include but are not limited to:

    - Sjögren's syndrome
    - cystic fibrosis
    - primary biliary cholangitis
    - graft-versus-host disease
    - immunoglobulin G4-related sclerosing disease
    - amyloidosis
    - sarcoidosis
    - tuberculosis involving the salivary gland(s)
    - human immunodeficiency virus (HIV)
    - hepatitis C
    - end-stage renal failure requiring dialysis.

2. Having **hormonal disturbance** at the time of clinical onset or aggravation of SGH disorder. Examples include:

    - bilateral oophorectomy
    - menopause.

3. Having a **salivary gland condition** at the time of clinical onset or aggravation of SGH disorder. Examples include:

    - salivary gland aplasia or agenesis
    - parotidectomy.

4. Receiving external beam **radiation therapy** to the head and neck region involving one or more of the major salivary glands prior to the clinical onset or aggravation of SGH disorder.

5. Using prescribed **medication** known to cause or contribute to SGH disorder prior to clinical onset or aggravation.

For VAC purposes, medications considered are those causing adverse drug reactions affecting the salivary glands. These medications include, but are not limited to, the following:

- urological overactive bladder:
    - oxybutynin
    - tolterodine
    - solifenacin.
- antidepressants and antipsychotics:
    - amitriptyline
    - bupropion
    - citalopram
    - duloxetine
    - escitalopram
    - fluoxetine
    - imipramine
    - lithium
    - mirtazapine
    - olanzapine
    - paroxetine
    - quetiapine
    - sertraline
    - trazodone
    - venlafaxine.

6. Inability to obtain **appropriate clinical management** of SGH disorder.

Section B: Medical conditions which are to be included in entitlement/assessment

Section B provides a list of diagnosed medical and dental conditions which are considered for VAC purposes to be included in the entitlement and assessment of SGH disorder (xerostomia).

- Hyposalivation
- Hypoptyalism

Section C: Common medical and dental conditions which may result, in whole or in part, from salivary gland hypofunction disorder (xerostomia) and/or its treatment

Section C is a list of conditions which can be caused or aggravated by SGH disorder (xerostomia) and/or its treatment. Conditions listed in Section C are not included in the entitlement and assessment of SGH disorder (xerostomia). A consequential entitlement decision may be considered where the individual merits and the medical evidence of the case support a consequential relationship.

Conditions other than those listed in Section C may be considered; consultation with a disability consultant or dental advisor is recommended.

- Dental caries
- Oral candidiasis (fungal infections)

Links

Related VAC guidance and policy:

- Pain and Suffering Compensation - Policies
- Royal Canadian Mounted Police Disability Pension Claims - Policies
- Dual Entitlement – Disability Benefits - Policies
- Establishing the Existence of a Disability - Policies
- Disability Benefits in Respect of Peacetime Military Service – The Compensation Principle - Policies
- Disability Benefits in Respect of Wartime and Special Duty Service – The Insurance Principle - Policies
- Disability Resulting from a Non-Service Related Injury or Disease - Policies
- Consequential Disability - Policies
- Benefit of Doubt – Policies

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