I recently attended a meeting of the Sjögren’s Society of Canada where I met many medical and dental professionals, as well as quite a few well-informed Sjögren’s patients. While at this meeting, I noticed that most introductions were accompanied by the question, “When were you diagnosed?” This greeting was usually followed by shared accounts of their travails before they were finally diagnosed with Sjögren’s Syndrome. I am proud to say that some of these individuals told me their dental hygienist instigated referral, and facilitated diagnosis. Prompt diagnosis allows access to treatment to relieve symptoms, minimize complications, and enhance vigilance for lymphoma.

Research at the University of Toronto found a median delay of four years (range 0-28 years) between onset and diagnosis. Much of this delay is related to the heterogeneous symptoms, which make diagnosis difficult, plus a lack of awareness of the condition on the part of various health-care professionals encountered by the Sjögren’s patient. They often fail to “connect the dots” regarding the multiple signs and symptoms affecting various body systems.
Sjögren’s Syndrome is a rheumatic autoimmune disease, in which intense lymphocytic infiltration occurs in the exocrine glands. This causes inflammation, which damages glandular tissue and impairs function. Primary Sjögren’s Syndrome is diagnosed in the absence of any other connective-tissue disease, while Secondary Sjögren’s Syndrome is accompanied by other autoimmune diseases, such as rheumatoid arthritis, lupus erythematosus, scleroderma, or in rare cases, Behçet’s disease. Secondary Sjögren’s Syndrome comprises approximately 60 percent of cases.

Clinical features of Sjögren’s Syndrome
Sjögren’s Syndrome is mainly characterized by dry eyes and a dry mouth, and may also affect other mucosal tissues such as the nose, larynx, gastrointestinal system, and vagina. The systemic autoimmunity associated with Sjögren’s Syndrome can also result in dry skin, fatigue, low-grade fever, constipation, myalgia, and joint pain. Other conditions that might occur include small-vessel vasculitis, Raynaud’s phenomenon, pulmonary symptoms, nephritis, neuropathy, thyroiditis, and even lymphoma. Sjögren’s patients have a 16 times greater than normal risk of developing lymphoma.

Mental impact of Sjögren’s Syndrome
Brain fog is becoming increasingly recognized as a symptom of central nervous system involvement in Sjögren’s Syndrome: it is characterized by mildly impaired short-term memory and concentration, and slower cognitive processing. Little is currently known about the pathogenesis of brain fog, but it is thought that it might involve inflammation of the cerebral small blood vessels. In common with many chronic medical diseases, depression or anxiety might accompany Sjögren’s Syndrome, related to its adverse effects on the quality of life. This is shown by its score on the Devin’s Illness Intrusiveness Scale, where its negative impact on quality of life is comparable with that of multiple sclerosis, or kidney dialysis. Inflammatory cytokines have also been implicated in mood disorders.

Prevalence
Sjögren’s Syndrome is the second-most-common rheumatic autoimmune disease. Approximately four million Americans are affected, and 90 percent of Sjögren’s patients are women. Most are diagnosed in their late forties, but the disease can also affect children and men. Men are usually diagnosed later than females.

Diagnosis
Oral Symptoms—a positive response to at least one of the following questions can denote Sjögren’s.
1. Have you had a daily feeling of dry mouth for more than three months?
2. Have you had recurrently or persistently swollen salivary glands as an adult?
3. Do you frequently drink liquids to aid in swallowing dry food?

Ocular Symptoms—a positive response to at least one of the following questions can denote Sjögren’s.
1. Have you had daily, persistent troublesome dry eyes for more than three months?
2. Do you have a recurrent sensation of sand or gravel in the eyes?
3. Do you use tear substitutes more than three times a day?
The American College of Rheumatology’s current classification criteria for diagnosis of Sjögren’s Syndrome specifies that patients have oral and ocular symptoms, and meet two of the following criteria: \(^{10}\)

1. **Autoantibodies**, such as positive blood tests for anti-nuclear antibody (ANA), plus anti-SSA (Ro), and/or anti-SSB (La), or positive rheumatoid factor. \(^{11}\)
2. **Histopathology**: Biopsy of the labial minor salivary glands, which shows focal lymphocytic sialadenitis.
3. **Ocular signs**: an ocular staining score, such as a rose Bengal test score of \(\geq 4\), which shows keratoconjunctivitis sicca, or a Schirmer’s test with a lachrymal flow rate of \(\leq 5\) mm/5 min.
4. **Evidence of salivary gland involvement** includes a resting salivary flow rate of \(\leq 0.1\) ml/min, parotid sialography showing dilation of the ducts (sialoectasias), or scintigraphy that shows low uptake and delayed excretion of an intravenously administered marker.

However, diagnostic criteria are still evolving—at the 13th International Symposium on Sjögren’s Syndrome in May 2015, the American College of Rheumatology and the European Union League Against Rheumatism presented updated consensus diagnostic criteria. \(^{12}\)

Each objective criterion is allocated points. Anti-SSA positivity, and a positive minor salivary gland biopsy each score three points, while a Schirmer’s test \(\leq 5\) mL/5 min, an ocular staining score \(\geq 4\), and a resting salivary flow \(\leq 0.1\) mL/min each score one point. For a diagnosis of Sjögren’s Syndrome, oral and ocular symptoms must be present, plus a total of four points.

**Exclusion criteria**

The following conditions, which also cause dry eyes and dry mouth comprise the exclusion criteria; if these are present, then Sjögren’s Syndrome is not diagnosed.

- Pre-existing lymphoma
- Hepatitis C infection
- HIV infection
- Sarcoidosis
- Duration of anti-cholinergic drug use, which is shorter than four-fold the drug’s half-life
- History of head and neck radiation therapy

**Assessment of the Sjögren’s patient in the dental office setting**

Oral care and support for individuals with Sjögren’s Syndrome begins with thorough assessment, which facilitates timely specialist referral for earlier diagnosis. This includes general appraisal, medical history review, and screening for symptoms using a questionnaire. This should be followed by a head-and-neck examination, and comprehensive intraoral examination. The Challacombe Scale of Clinical Oral Dryness is also a valuable tool for clinically assessing and quantifying the severity of oral dryness. \(^{13}\) This scale is based on a Clinical Oral Dryness Score (CDS), and lists 10 key features of dry mouth; one point is allocated for each feature, and the patient’s additive score indicates the severity of the dry mouth. There is an inverse relationship between salivary flow rates and CDS: high CDS are related to hyposalivation.

Management of a dry mouth needs to be multifaceted to address the multiple oral symptoms and complications. This includes stimulation of salivary flow, and conservation of functional salivary gland tissue. Also, saliva substitutes can be used as required to protect and lubricate, and to facilitate speech, mastication and swallowing. In addition, prevention of complications is crucial. These include dysphagia and aspiration pneumonia, sialoliths, salivary gland swelling, caries, periodontal disease, and soft-tissue infections such as candidiasis. Supplementation of Omega 3 at 1000mg per day has been shown to improve the lubricating quality of the saliva and the tears. Application of heat

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Sjögren’s Syndrome is mainly characterized by dry eyes and a dry mouth, and may also affect other mucosal tissues such as the nose, larynx, gastrointestinal system, and vagina.
and massage can help to aid salivary flow through the ducts, and reduce swelling of the parotid and submandibular salivary glands.

**Conclusion**

In January 2012, the Sjögren’s Syndrome Foundation launched a five-year breakthrough goal, “50 in 5.” The purpose is “to shorten the time to diagnose Sjögren’s by 50 percent in 5 years.”

Increased vigilance and enhanced interdisciplinary collaboration between the various health-care professions could facilitate earlier diagnosis, leading to improved outcomes for the Sjögren’s patient. For example: medical and dental professionals could include questions on ocular, oral and systemic symptoms of Sjögren’s Syndrome in their screening questionnaires.

Public awareness of Sjögren’s Syndrome could be raised with more information in the mass media, and increased availability of screening questionnaires for self-assessment. This could enhance patients’ ability to advocate for themselves as they navigate the health-care system.
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Linda M. Douglas graduated as a dental hygienist from the Royal Dental Hospital in London, England in 1982. After graduation she worked in periodontology before moving to Toronto, Canada, where she has worked in private practice since 1990.

Her desire to support dry-mouth patients has instigated an in-depth study of xerostomia and its related pathologies. She teaches a CE course on xerostomia management at rdhu, a dental hygiene professional development center near Toronto.