The Importance of Saliva

by Nelson L. Rhodus, DMD, MPH, FICD, University of Minnesota

We suggest using this article as a resource on saliva and discussing the more medically-detailed sections, as well as treatment options, with your dentist or physician.

A human being normally produces approximately 1.5 liters of saliva per day. There is a typical diurnal circadian rhythm in the production of that saliva with one peak in the mid-morning followed by a relative decrease until the second peak occurs around early evening. Saliva flow normally is decreased at night. Saliva is produced by several glands: the submandibular glands (which lie bilaterally just under the posterior jaw) produce most of the quantity of saliva (45%) and it is a mixed fluid with both mucous (thick, stringy fluid) and water but containing most of the proteins; the paired parotid glands (which are in the mid-face just in front of the ears) produce primarily serous (or watery) fluid and accounts for about 35% of the total quantity; the sublingual glands (again...)

Is it important who my doctor has analyzing my lip biopsy results?

by Yvonne R. S. Sherrer, MD, FACR

Yes. Experience is necessary for the accurate reading of all biopsies but this is particularly true in the case of lip biopsies done to establish the diagnosis of Sjögren’s. Many hospitals do not have the expertise necessary to accurately read these biopsies. A 2007 publication of the accuracy of lip biopsies at the University of Chicago revealed that a whopping 45% of them were incorrectly graded initially, and that at a major university! When the biopsies were re-read by pathologists with sufficient experience in the grading for Sjögren’s the results were different. This information was not new. Adequate expertise in the reading of difficult salivary gland histology is necessary in order to adequately assist the clinician and patient. One way to get around this is to have to have the biopsied specimen sent to a major center that does have the necessary expertise. If patients are uncertain whether their local hospital has this expertise they should ask.
in a pair just beneath the anterior tongue) are much smaller and contribute only about 10% of the total volume; and finally there are hundreds of small minor salivary glands in the lips, palate and throat which contribute a relatively small, but important portion of natural salivary flow.

The normal quantity of saliva naturally provides necessary oral lubrication and moisture to assure comfort and function for the individual, but saliva does much more than that. At least equally as important as this volume of saliva, if not more so, is the composition of saliva, which is rich in constituents which have potent digestive, coating, protective, antimicrobial, antiacid, lubricative and homeostatic properties. Saliva is much more than water. In fact, saliva contains approximately 60 important, protective constituents including: immunoglobulins, electrolytes, buffers, antimicrobial enzymes, digestive enzymes and many others, all of which make saliva an essential contributor to the health and homeostasis of the oral cavity. This is the reason that water or artificial salivas are a poor substitute; none of them have the rich composition of ones own natural saliva. In attempting to effectively manage Sjögren’s, most clinicians will prescribe secretogogues (salivary stimulating drugs) in order to facilitate the production of natural saliva with all of its beneficial constituents from the salivary glands.

Obviously, when saliva is diminished in quantity and altered in composition, as in Sjögren’s, deterioration of the oral soft and mineralized tissues will most certainly occur. This is especially significant over time. A major (defining) characteristic of Sjögren’s is progressive inflammation of the salivary glands accompanied by decreased salivary flow (hyposalivation). Often, since Sjögren’s is an insidious condition which gradually progresses over time, the affected person may not realize the diminishment of saliva until it reaches a critical point, typically below 50%.

When a person has less than 50% of normal saliva in both quantity and composition, many deleterious complications occur in the oral cavity. With this hyposalivation, the patient can suffer acute as well as long term problems including: glossitis (inflamed tongue), glossodynia (burning tongue), mucositis (inflamed oral tissues, including the throat), parotid (or other salivary) gland hypertrophy (swelling) - which may be periodic and short-term or long term (in which case close monitoring is needed due to the potential to develop lymphoma), angular cheilosis (sores and cracking at the corners of the lips), dysgeusia (taste dysfunction ) secondary infections (such as Candidiasis or thrush) and a significantly increased dental caries rate. (nearly 100 times that of normal!)

Patients with Sjögren’s and hyposalivation also demonstrate increased levels of...
Are you one of the 2-4 million patients with Sjögren’s syndrome? If you have experienced dry-mouth symptoms, then you know how difficult it can be to eat, chew and swallow food. But does your healthcare provider understand?

In the past, you may have tried to explain the uncomfortable feeling of your dry-mouth symptoms to your healthcare provider. Maybe it’s time to talk to him or her again.

Ask your healthcare provider about EVOXAC, a prescription treatment option for dry-mouth symptoms associated with Sjögren’s syndrome that works by stimulating the production of your body’s own natural saliva.

Visit DiscoverEVOXAC.com for a list of questions to take to your healthcare provider.

What is EVOXAC?
EVOXAC (cevimeline hydrochloride) is a prescription medicine used to treat symptoms of dry mouth in patients with Sjögren’s syndrome.

Who Should Not Take EVOXAC?
You should not take EVOXAC if you have uncontrolled asthma, allergies to EVOXAC, or a condition affecting the contraction of your pupil, such as narrow-angle (angle-closure) glaucoma or inflammation of the iris.

What should I tell my Healthcare Provider?
Tell your healthcare provider if you have any of the following conditions:

• History of heart disease
• Controlled asthma
• Chronic bronchitis
• Chronic obstructive pulmonary disease (COPD)
• History of kidney stones
• History of gallbladder stones

• Tell your healthcare provider if you are trying to become pregnant, are already pregnant, or are breastfeeding.

• Tell your healthcare provider about all medications that you are taking, including those you take without a prescription. It is particularly important to tell your healthcare provider if you are taking any heart medications, especially “beta-blockers”.

• If you are older than 65, your healthcare provider may want to monitor you more closely.

General Precautions with EVOXAC
• When taking EVOXAC, use caution when driving at night or performing other hazardous activities in reduced lighting because EVOXAC may cause blurred vision or changes in depth perception.

• If you sweat excessively while taking EVOXAC, drink extra water and tell your healthcare provider, as dehydration may develop.

• The safety and effectiveness of EVOXAC in patients under 18 years of age have not been established.

What are some possible side effects of EVOXAC?
• In clinical trials, the most commonly reported side effects were excessive sweating, headache, nausea, sinus infection, upper respiratory infections, running nose, and diarrhea.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.FDA.gov/medwatch, or call 1-800-FDA-1088.

Please see a brief summary of Important Information for EVOXAC on the next page.
EVOXAC® Capsules
(cevimeline hydrochloride)

INDICATIONS AND USAGE
Cevimeline is indicated for the treatment of symptoms of dry mouth in patients with Sjögren’s Syndrome.

CONTRAINDICATIONS
Cevimeline is contraindicated in patients with uncontrolled asthma, known hypersensitivity to cevimeline, and when dosage is unclear, e.g., in acute intubation and in narrow-angle (glaucoma) glaucoma.

WARNINGS
Cardiovascular Disease
Cevimeline can precipitate or aggravate cardiovascular and/or heart rate effects. Patients with significant cardiovascular disease may potentially be at increased risk for arrhythmias and/or heart rate effects. Cevimeline should be used with caution and in close medical supervision to patients with a history of cardiovascular disease evidenced by angina pectoris or myocardial infarction.

Pulmonary Disease
Cevimeline can potentially increase airway resistance, bronchial smooth muscle tone, and bronchial secretions. Cevimeline should be administered with caution and with close medical supervision to patients with controlled asthma, chronic bronchitis, or chronic obstructive pulmonary disease.

Drug Interactions
Optimistic formulation of mucociliary agents have been reported to cause visual blurring which may result in decreased visual acuity, especially at night and in patients with central larce, and to cause impairment of depth perception. Caution should be advised while driving at night or performing hazardous activities in reduced lighting.

PRECAUTIONS
General
Cevimeline is characterized by an exacerbation of its parasympathomimetic effects. These include: headache, visual disturbance, lassitude, sweating, respiratory distress, gastrointestinal spasm, nausea, vomiting, diarrhea, atroventricular block, tachycardia, bradycardia, hypertension, hypotension, shock, mental confusion, cardiac arrhythmia, and syncope.

Cevimeline should be administered with caution to patients with a history of nephrolithiasis or cholecystitis. Contraction of the gallbladder or biliary smooth muscle could precipitate complications such as cholecystitis, cholangitis and biliary obstruction. Cevimeline should be used with caution in the setting of smooth muscle tone could theoretically precipitate colic or unilateral renal colic in patients with nephrolithiasis.

Information for the Patient
Patients should be informed that cevimeline may cause visual disturbances, especially at night, that could impair their ability to drive safely. If a patient sweats excessively while taking cevimeline, deodorant may be helpful. The patient should drink extra water and consult a health-care provider.

Drug Interactions
Cevimeline should be administered with caution to patients taking beta-adrenergic antagonists, because of the possibility of concurrent effects. Drugs with parasympathomimetic effects administered concurrently with cevimeline can be expected to have additive effects. Cevimeline might interfere with desirable antimuscarinic effects of drugs used concomitantly.

Carcinogenesis, Mutagenesis and Impairment of Fertility
Carcinogenicity, mutagenesis, and impairment of fertility were studied in both long-term rodent and short-term mammalian cell assays. Foremost among these was the Ames bacterial mutagenesis test. Cevimeline did not cause any induction of chromosomal aberrations or sister chromatid exchange in standard mammalian cell assays. In ICR mice, a 5 times the maximum recommended dose for a 60 kg human following normalization of the data on the basis of body surface area estimate (53.3 mg/kg) was used in the mating through day seven of gestation exhibited a statistically significantly smaller number of implantations than did control animals. This effect may have been secondary to maternal toxicity. There are no adequate and well-controlled studies in fertile women. Cevimeline was administered to 1777 patients during clinical trials worldwide, including Sjögren’s patients and patients with dry mouth associated with other conditions. In one subject with lupus erythematosus receiving concomitant multiple drug therapy, a highly elevated ALT level was noted during the fourth week of cevimeline therapy. The subject was taking concomitant treatment in the clinical trials, very high AST levels were noted. The significance of these findings is unknown.

Additional adverse events (relationship unknown) which occurred in other clinical studies (patient population different from Sjögren’s patients) are as follows: cholestatic syndrome, blood pressure fluctuation, cardiomyopathy, postural hypotension, asaphia, convulsions, abdominal pain, gout, nausea, vomiting, diarrhea, anorexia, abdominal pain, abdominal distension, abdominal pain, kidney pain, weakness, malaise, fever, myalgia, arthralgia, rash, fever, urticaria, diaphoresis, pruritus, decreased urine flow, pyuria, hematuria, cystitis, leg cramps, abscess, eructation, myalgia, rash, conjunctivitis, tinnitus, allergic reactions.

In the total number of patients exposed to the dose at any time during the study.

In addition, the following adverse events (≥4% incidence) were reported in Sjögren’s clinical trials:

Cevimeline

<table>
<thead>
<tr>
<th>Adverse Event</th>
<th>Placebo</th>
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</thead>
<tbody>
<tr>
<td><strong>Adverse Event</strong></td>
<td><strong>Placebo</strong></td>
</tr>
<tr>
<td><strong>30 mg</strong></td>
<td><strong>60 mg</strong></td>
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<tr>
<td><strong>n=533</strong></td>
<td><strong>n=164</strong></td>
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<tr>
<td><strong>n=164</strong></td>
<td><strong>n=164</strong></td>
</tr>
<tr>
<td><strong>Dizziness</strong></td>
<td>4.3%</td>
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<tr>
<td><strong>Headache</strong></td>
<td>4.3%</td>
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<tr>
<td><strong>Bronchitis</strong></td>
<td>4.1%</td>
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<tr>
<td><strong>Angina pectoris</strong></td>
<td>2.8%</td>
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<td><strong>Tachycardia</strong></td>
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<tr>
<td><strong>Constipation</strong></td>
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<tr>
<td><strong>Stomatitis</strong></td>
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<tr>
<td><strong>Anemia</strong></td>
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<tr>
<td><strong>Depression</strong></td>
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<tr>
<td><strong>Fatigue</strong></td>
<td>2.6%</td>
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<tr>
<td><strong>Diabetes</strong></td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Renal pain</strong></td>
<td>2.6%</td>
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<tr>
<td><strong>Urethral disorder</strong></td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Abnormal urine</strong></td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Urinary incontinence</strong></td>
<td>2.6%</td>
</tr>
<tr>
<td><strong>Nausea</strong></td>
<td>2.6%</td>
</tr>
</tbody>
</table>

In the total number of patients exposed to the dose at any time during the study.

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March 2010 / The Moisture Seekers

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Daiichi Sankyo, Edison, NJ 08837
Here is your opportunity to increase awareness of Sjögren’s Syndrome!

*Friends Helping Friends* is an awareness letter campaign that offers you the opportunity to reach out to those you know, inform them about Sjögren’s and request their support. Your decision to participate in this campaign will help to increase awareness nationwide and raise additional funds towards research and education!

In early April, you all will be receiving our 2010 *Friends Helping Friends* materials packet and we hope you will choose to take part! This year’s campaign theme is “Imagine” and we will be focusing on the numerous complications of Sjogren’s to help enlighten your friends and family about the seriousness of the disease.

If you need additional materials, please contact the Foundation office at 800-475-6473 ext 217 and we will be sure to get them to you as soon as possible!

Remember, by participating in the *Friends Helping Friends* campaign, you will not only be helping to spread the word about Sjögren’s, but you will also be helping to raise crucial funds to support research, education and awareness. I hope you will take our challenge in 2010 and Stand Up for Sjögren’s by mailing out your 2010 *Friends Helping Friends* letters.
“Saliva” continued from page 2 ▼

dysphagia (swallowing problems) as compared to normal. Studies have shown that patients with Sjögren’s have difficulty tasting, tolerating and swallowing certain foods. Of course this may result in digestive and nutritional intake inadequacies.

Among its many beneficial constituents, saliva has been shown to be rich in antimicrobial proteins which have potent antifungal and antibacterial properties, thus it plays an important role in host defense and protection from yeasts such as Candida (yeast) species. Therefore with the reduction in salivary flow in Sjögren’s, Candida infections become very common.

A few recent studies have also indicated that patients with Sjögren’s exhibit more periodontal (gum) disease, especially clinical attachment loss.

**Diagnosis**

It is very important for the patient with hyposalivation to seek and obtain a diagnosis. There are several conditions besides Sjögren’s which can cause hyposalivation. The precise diagnostic criteria for Sjögren’s remain controversial, although there are specific laboratory tests available for the major diagnostic categories of salivary and tear production, histopathologic changes and serological inflammatory markers. In the Sjögren’s clinic at the University of Minnesota, and many other clinics, the modified European criteria (2002) are used.

**Minor salivary gland histopathology**

Labial salivary gland histopathology has almost universally been accepted as the prima facia diagnostic indicator for definitive diagnosis of Sjögren’s. Recent data confirm this test, although the timing of obtaining the biopsy is important, so as not to perform the biopsy too early in the process. The classic histopathology of the minor salivary glands in Sjögren’s is a lymphocytic infiltration which includes benign lymphoalaladenopathy [focal lymphocytic salaladenitis or BLEL (benign lymphoepithelial lesion) in the major salivary glands]. The benign lymphoaladenopathy may manifest as parotid hypertrophy (swelling), particularly in patients with primary Sjögren’s. Small clusters of intralobular ducts enlarge to eventually replace the acinar epithelial parenchyma. The lesion is comprised of primarily CD-4+ T-cell lymphocytes along with late acquisition of polyclonal B-cells and plasma cells. In the lymphocytic foci approximately 75% are T-cells with 5-10% B-cells. As the inflammatory process progresses over time, fibrosis and atrophy of the salivary glands occur and hyposalivation progresses. Progression to lymphoma is a possibility in Sjögren’s, and although quite rare (only 1-3 % of all Sjögren’s patients) does require continuous monitoring.

**Sialometry**

Sialometry (measurement of salivary secretion function) is useful both as an initial screening tool for hyposalivation associated with Sjögren’s as well as to assess the level of severity of Sjögren’s. Salivary flow collection must be performed precisely according to the type of gland and over a period of at least five minutes (often up to fifteen minutes) in order to be valuable as a diagnostic technique.

Whole, unstimulated salivary flow rates typically tend to be very low in Sjögren’s patients (0-0.2 ml/min.) as compared to normal unstimulated whole salivary flow rates (0.5-1.2 ml/min.). Stimulated whole saliva (by chewing paraffin) will of course be higher (0.05-0.4 ml/min) but still substantially lower than normal salivary flow (1.0-2.0 ml/min.) The parotid glands appear to be affected more than other glands by the chronic inflammatory process with Sjögren’s. Minor (usually labial) salivary glands may also be used (unstimulated or stimulated) to collect and quantify saliva in order to assess salivary dysfunction as well as the efficacy of therapy.

**Imaging**

Radiographic findings may appear in advanced stages of fibrosis of the salivary glands. Sialograms are performed by injecting a radiocontrast dye into the salivary ductal system prior to conventional radiography. Sialograms may reveal punctate radiopaque calcifications, or if more advanced, there are larger, lobular calcifications. Sialectasis in portions of the ductal system may occur or appear dilated or may appear with areas of absent acinar parenchyma.

Sialography has been shown to be much more accurate in demonstrating the level of salivary gland destruction in Sjögren’s. There is some concern both over the invasiveness and untoward side-effects of sialography as well as it’s unreliability as related to histopathology.

**Scintigraphy**

Salivary scintigraphy with 99m Tc (sodium pertechnetate, a radioisotope of technetium) can be performed to assess the function of the salivary glands by measuring the rate and density of technetium uptake. The radioactive
The Leader in Dry Mouth

☑️ #1 Dentist Recommended Dry Mouth brand
☑️ Proven to relieve Dry Mouth
☑️ Supplements saliva’s natural defenses

Toothpaste, Mouthwash, Gel, Spray, Gum and more
Sodium pertechnetate is quantified in the major salivary glands one hour after it has been intravenously injected. This technique is very accurate in assessment of the severity of salivary gland pathology as the quantity of 99m Tc uptake in the glands or likewise in the saliva is proportionally reduced.

**Sialochemistry**

Sialochemistry (measurement of the constituents of saliva) may provide some interesting insight into the prognosis and progression of oral disease because of the alterations in the protective constituents in the saliva of the patient with Sjögren’s. While the chemistry of saliva does reveal a somewhat characteristic profile for Sjögren’s, at the present time sialochemistry is not considered diagnostic. Typically in Sjögren’s there is an increase in secretory Ig-A, lactoferrin, total protein and sodium and chloride ions, with decreases in lysozyme, potassium and phosphate ions. However these constituents vary between parotid and sub-mandibular glandular fluid and whole saliva and whether the saliva is unstimulated or stimulated. Future research may improve the sensitivity and specificity for sialochemistry as a diagnostic and prognostic tool for Sjögren’s.

**Interpretation of diagnostic tests**

As with many rheumatic disorders, Sjögren’s may be insidiously progressive and may require many years to fully manifest as detected by the various laboratory tests. Subtle changes in serological values (i.e., ESR, ANA, etc.) may precede overt diagnostic levels by several years. On the other hand patients may exhibit symptoms of dry eyes or dry mouth without the presence of definitive diagnostic markers. Consequently, these patients should not automatically be ruled-out as Sjögren’s, but rather followed at periodic intervals with laboratory tests in order to determine changes in their status over time. In any case, patients with signs and symptoms of Sjögren’s should be managed accordingly.
Dental Care Tips
by Philip C. Fox, DDS

Due to alterations in salivary function, Sjögren’s syndrome patients have many dental problems. They have been found to require a greater number of dental visits, to have more decay and restorative needs, and to spend a significant amount more (2 to 3 times) on dental care.

In order to maintain the best oral health and minimize expense, you should:

- Schedule dental examinations regularly – at least twice a year.
- Brush your teeth after every meal. Prompt removal of food debris will minimize decay. Rinse your mouth with plain water if you don’t have time to brush.
- Use dental floss daily.
- Use a toothpaste containing fluoride. Discuss with your dentist using supplemental fluoride, either as a daily rinse or gel in a carrier or applied in the dental office.
- Brush your tongue with a toothbrush or tongue-scraper. Buy an electric toothbrush.
- Avoid sugary, sticky foods which promote decay-causing bacteria.
- Do not wear removable dental prostheses at night, and clean and soak them in an anti-fungal preparation daily.
- Discuss with your dentist the use of a remineralizing product to help prevent decay.
- Eat a healthful diet low in refined sugars and avoid carbohydrate-rich between-meal snacks.
- Use products to stimulate salivation (such as gums or candies) or to promote oral comfort but be certain they are sugar-free and contain xylitol as a sweetener.
- Don’t smoke – cigarettes, cigars or pipes – or use chewing tobacco.
- Take advantage of fluoride-containing and releasing dental restorative materials.
- Check the Sjögren’s Syndrome Foundation Product Directory – free of charge to all members – to see available products.
Remember your loved ones and special occasions with a donation to the SSF in their name.

in honor

In Honor of Amy Schisler & Family
Barbara Schwartz

In Honor of Barbara Spofford
Keith Spofford

In Honor of Carol Gerrish
George Gerrish

In Honor of Dan Brann
Katie Brann

In Honor of Deirdre Perl
Elyse & Marc Satalof

In Honor of Denise McKown
Aline Fetter

In Honor of Dick Quinlan
Pamela Quinlan

In Honor of Dr. & Mrs. Rodney Nugent
Nancy Jenull

In Honor of Dr. Frederick Vivino
Roberta Frimpter

In Honor of Dr. Richard Hector
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In Honor of Emily Schetky
Priscilla Dalrymple
Bonnie Foss
Beverly Hadley
Joan C. Harris
Ritamary McMahon
Ulla Nest
Mark & Catherine Schetky

In Honor of Gracie Matsuda
Gary Matsuda

In Honor of Hubert Tober
Daniel Magnus

In Honor of Jane Pesce
The Pesce Family

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L. Kelly Dixon

In Honor of Jean Scott
Kathy Scott

In Honor of Karen & Ben Freestone
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Ron, Kathy and Paul Parker

In Honor of Livija Von Lohoffel
Butch

In Honor of Marcy Levine
Peter Joseph

In Honor of Mary Beth Dinius
Mary Ann Dinius

In Honor of Mary Robinson
Kathy & Keith Redmon

In Honor of Noral McLean
The Moody Family

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Jerry Steinberg

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Diana Frankenfield
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Emil Kantra
Grace Lantz
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If you drop artificial tears ≥4 times a day, give yourself

**More Freedom to Go DROPLESS**

LACRISERT®: All-day dry eye relief in a single daily dose*

- **Significant improvement** in symptoms, signs, and activities of daily living †
- **Dissolves comfortably** in the eye to begin all-day relief—like a slow-release artificial tear
- **No preservatives** to cause irritation or damage, even with long-term use
- **Simple and easy** placement
- **Preferred** by nearly 4 in 5 patients over artificial tears

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Ask your doctor about LACRISERT® today!

*LACRISERT® is indicated in patients with moderate to severe Dry Eye syndromes, including keratoconjunctivitis sicca. LACRISERT® is indicated especially in patients who remain symptomatic after an adequate trial of therapy with artificial tear solutions. LACRISERT® is also indicated for patients with exposure keratitis, decreased corneal sensitivity, and recurrent corneal erosions.

LACRISERT® is contraindicated in patients who are hypersensitive to hydroxypropyl cellulose. The following adverse reactions have been reported in patients treated with LACRISERT® but were, in most instances, mild and temporary: blurring of vision, eye discomfort or irritation, matting or stickiness of eyelashes and red eyes. If improperly placed, LACRISERT® may result in corneal abrasion.

Please see brief summary of Prescribing Information on adjacent page.

*Some patients may require twice-daily use for optimal results.†Multicenter, 2-visit, 4-week, single-arm study conducted in moderate to severe Dry Eye patients who had previously been using ATs (N=520). Results are based on 418 patients who completed the study.

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You've Got Rhythm: Your Internal Clock Affects Your Health

Reprinted from the NIH News in Health, August 2009

Do you live by the clock, checking your watch so you’re not late for work, school or appointments? While you struggle to stay on time for your daily activities, your body has its own internal clock. This biological clock helps you feel alert at work, hungry at mealtime and drowsy at night. When your internal clock is out of whack, your health can suffer.

Scientists have long known that the human body has daily rhythms, called circadian rhythms (circadian is Latin for “around a day”). These natural rhythms are coordinated by a tiny region in your brain. This “master clock” generally operates on a 24-hour cycle, and it adjusts to several cues in your surroundings. The most important cue is light and darkness.

During the day, when it’s light outside, the brain’s master clock sends out signals to other brain regions to make hormones that will help keep you awake, boost your heart rate and give you energy. In the evening, when less light enters your eyes, the master clock triggers production of a hormone called melatonin. Melatonin makes you feel drowsy and helps you stay asleep.

The brain’s clock affects various body functions, including body temperature, hormone levels, urine production and blood pressure.

“Many processes are patterned around a 24-hour cycle: sleeping, eating, waking, drinking and even health-related events,” says Dr. Martha Gillette, a scientist at the University of Illinois at Urbana-Champaign. For instance, she notes, heart attacks are more likely to occur early in the morning, when the level of a hormone called cortisol starts its daily rise. Time of day has also been shown to influence the effectiveness and side-effects of certain drugs.
Each day patients, families and healthcare professionals continue to stand up to help further the mission of the Sjögren’s Syndrome Foundation. Lynne, a Dallas area patient, recently did just that!

This past Fall, as Lynne prepared to move across the country to California, she realized she was not going to able to bring her car along with her. She remembered reading something in The Moisture Seekers about donating your car to the Sjögren’s Syndrome Foundation, but had always thought she would never need to do that. Lynne decided to call our offices to learn more about the process. What she found was simple: by contacting the Sjögren’s Syndrome Foundation directly, the SSF took down Lynne’s information (address, phone, car details) and sent it along to Car Program, Inc. who handled the rest of the transaction. They worked with Lynne to hire a local towing company, assess the value of her car and then take her car off her hands. The car was then sold at auction where the SSF received the proceeds from the sale. In return, Lynne received a receipt from the Car Program in the amount the car sold for, which can be deducted from taxes. Donating her car was so simple, and was a win-win for both Lynne and the Sjögren’s Syndrome Foundation.

If you are interested in learning more about how you can donate your car to the SSF, just call the Foundation at 800-475-6473. We would be happy to share more details with you so that you can join Lynne and Stand Up for Sjögren’s!

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**Donate Your Old Vehicle**

Call us today for more information.

800-475-6473
The Autoimmune Connection: Essential Information for Women on Diagnosis, Treatment, and Getting on with Your Life (2003)  
by Rita Baron-Faust and Jill P. Buyon, MD  

In The Autoimmune Connection, an award-winning medical journalist and a professor of medicine at the NYU School of Medicine team up to cover the full spectrum of autoimmunity and the myriad ways it influences the lives of women.  
Throughout the book you will learn:  
- how to sort out vague and seemingly unrelated early signs and symptoms  
- which diagnostic tests you may need and what the results can mean  
- what new treatments and therapies are on the horizon  
The first chapter offers a detailed overview of autoimmune disease. And the next 400 pages cover a chapter-by-chapter discussion of over eleven specific autoimmune diseases – from Sjögren’s, rheumatoid arthritis and lupus to scleroderma, celiac disease and multiple sclerosis – and many more. And the book includes information on related issues such as fibromyalgia, chronic fatigue, endometriosis and interstitial cystitis.  
This book is essential reading that will empower women who suffer from these common autoimmune diseases.  

**Call 800-475-6473 or visit www.sjogrens.org/ssfstore to order your copy today at the special SSF member’s price of $15**  
$19 non-member price plus shipping and handling  

This book can be purchased using the order form below, online at www.sjogrens.org or by contacting the Sjögren’s Syndrome Foundation office at 800-475-6473.  

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Maryland Residents add 6% sales tax  

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<th>Canada: $8 for first item + $2 for each additional item</th>
<th>Overseas: $18 for first item + $2.50 for each additional item</th>
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☐ MasterCard ☐ VISA ☐ AmEx Card Number ___________________________ Exp. Date ___________  

Signature ___________________________________________________________ CC Security Code ________
“My OTC* eye drops aren’t enough. Is there something more?”

“For your type of Chronic Dry Eye, use RESTASIS® I do.”

A certain type of Chronic Dry Eye happens when you can’t make enough tears due to inflammation. RESTASIS® Ophthalmic Emulsion is a prescription eye drop. With RESTASIS®, you’ll make more of your own tears…and need those other OTC eye drops less.

Don’t wait for your next appointment. Call today! And ask your eye doctor if RESTASIS® is right for you.

Go to restasis29.com, or call 1-866-311-2412 for a free kit.

Find out more about a $20 rebate offer! See next page for details.

RESTASIS® Ophthalmic Emulsion helps increase your eyes’ natural ability to produce tears, which may be reduced by inflammation due to Chronic Dry Eye. RESTASIS® did not increase tear production in patients using topical steroid drops or tear duct plugs.

Important Safety Information:
RESTASIS® Ophthalmic Emulsion should not be used by patients with active eye infections and has not been studied in patients with a history of herpes viral infections of the eye. The most common side effect is a temporary burning sensation. Other side effects include eye redness, discharge, watery eyes, eye pain, foreign body sensation, itching, stinging, and blurred vision.

You are encouraged to report negative side effects of prescription drugs to the FDA. Visit www.fda.gov/medwatch, or call 1-800-FDA-1088.

Please see next page for important product information.

*Over-the-counter.
STERILE, PRESERVATIVE-FREE

INDICATIONS AND USES: RESTASIS® ophthalmic emulsion is indicated to increase tear production in patients whose tear production is presumed to be suppressed due to ocular inflammation associated with keratoconjunctivitis sicca. Increased tear production was not seen in patients currently taking topical anti-inflammatory drugs or using punctal plugs.

CONTRAINDICATIONS: RESTASIS® is contraindicated in patients with active ocular infections and in patients with known or suspected hypersensitivity to any of the ingredients in the formulation.

WARNINGS: RESTASIS® ophthalmic emulsion has not been studied in patients with a history of herpes keratitis.

PRECAUTIONS: General: For ophthalmic use only. NON-TERATOGENIC EFFECTS: Patient's participation in carboxyfluorescein experiments was followed by a protective effect on the entire dose is absorbed. No evidence of teratogenicity was observed in rats or rabbits receiving oral doses of cyclosporine up to 300 mg/kg/day during organogenesis. These doses in rats and rabbits are approximately 300,000 times greater than the human daily dose of one drop (28 µL) of 0.05% RESTASIS® BID into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed.

Non-Teratogenic effects: Adverse effects were seen in reproduction studies in rats and rabbits only at dose levels toxic to dams. At toxic doses (rats at 30 mg/kg/day and rabbits at 100 mg/kg/day), cyclosporine oral solution, USP was embryo- and fetotoxic as indicated by increased pre- and postnatal mortality and reduced fetal weight together with related skeletal retardations. These doses are 30,000 and 100,000 times greater, respectively than the human daily dose of one-drop (28 µL) of 0.05% RESTASIS® BID into each eye of a 60 kg person (0.001 mg/kg/day), assuming that the entire dose is absorbed. No evidence of embryofetal toxicity was observed in rats or rabbits receiving cyclosporine at oral doses up to 17 mg/kg/day or 30 mg/kg/day, respectively, during organogenesis. These doses in rats and rabbits are approximately 17,000 and 30,000 times greater, respectively, than the daily human dose.

Offspring rats receiving a 45 mg/kg/day oral dose of cyclosporine from Day 15 of pregnancy until Day 21 post partum, a maternally toxic level, exhibited an increase in postnatal mortality; this dose is 45,000 times greater than the daily human topical dose, 0.001 mg/kg/day, assuming that the entire dose is absorbed. No adverse events were observed at oral doses up to 15 mg/kg/day (15,000 times greater than the daily human dose).

There are no adequate and well-controlled studies of RESTASIS® in pregnant women. RESTASIS® should be administered to a pregnant woman only if clearly needed.

Nursing Mothers: Cyclosporine is known to be excreted in human milk following systemic administration but excretion in human milk after topical treatment has not been investigated. Although blood concentrations are undetectable after topical administration of RESTASIS® ophthalmic emulsion, caution should be exercised when RESTASIS® is administered to a nursing woman.

Pediatric Use: The safety and efficacy of RESTASIS® ophthalmic emulsion have not been established in pediatric patients below the age of 16.

Geriatric Use: No overall difference in safety or effectiveness has been observed between elderly and younger patients.

ADVERSE REACTIONS: The most common adverse event following the use of RESTASIS® was ocular burning (17%). Other events reported in 1% to 5% of patients included conjunctival hyperemia, discharge, epiphora, eye pain, foreign body sensation, pruritus, stinging, and visual disturbance (most often burning).

Rx Only

ALLERGAN


Follow these 3 steps:

1. Have your prescription for RESTASIS® filled at your pharmacy.
2. Circle your out-of-pocket purchase price on the receipt.
3. Mail this certificate, along with your original pharmacy receipt (proof of purchase), to Allergan RESTASIS® Ophthalmic Emulsion $20 Rebate Program, P.O. Box 6513, West Caldwell, NJ 07007.

For more information, please visit our Web site, www.restasis29.com.

RESTASIS® Rebate Terms and Conditions: To receive a rebate for the amount of your prescription co-pay (up to $20), enclose this certificate and the ORIGINAL pharmacy receipt in an envelope and mail to Allergan RESTASIS® Ophthalmic Emulsion $20 Rebate Program, P.O. Box 6513, West Caldwell, NJ 07007. Please allow 8 weeks for receipt of rebate check. Receipts prior to March 1, 2009 will not be accepted. One rebate per consumer. Duplicate will not be accepted. See rebate certificate for expiration date. Eligibility: Offer not valid for prescriptions reimbursed or paid under Medicare, Medicaid, or any similar federal or state healthcare program including any state medical or pharmaceutical assistance programs. Void in the following states if any third-party payer reimburses you or pays for any part of the prescription price: Massachusetts. Offer void where prohibited by law, taxed, or restricted. Amount of rebate not to exceed $20 or co-pay, whichever is less. This certificate may not be reproduced and must accompany your request for a rebate. Offer good only for one prescription of RESTASIS® Ophthalmic Emulsion and only in the USA and Puerto Rico.

Enroll me in the My Tears, My Rewards® Program to save more!

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When you fight against your circadian clock and your activities take you out of sync with day and night, your health may suffer. The schedules of shift workers who must be on the job after the sun goes down are at odds with their biological clocks. These people often find themselves sleepy at work. They may also have trouble falling or staying asleep during daylight hours after work. Studies show that shift workers have increased risk for heart disease, digestive disturbances, cancer and other health problems.

Another less severe disruption of the circadian clock is jet lag. It’s caused by traveling across time zones. Jet lag is usually more severe for eastbound travelers, because their days are shortened and the brain has more trouble adjusting to a shorter day than a longer one. Some studies suggest that taking melatonin pills just before bedtime may help jet-lagged travelers adjust to new time zones. But the scientific evidence for using melatonin to treat sleep disorders is still unclear.

In recent years, researchers have discovered that circadian activities are far more complicated than they’d ever expected. Inside our cells, clock genes and proteins keep each cell running on a near-24-hour schedule. “Every single cell that we’ve looked at in the body has a clock inside of it,” says Gillette. “Cellular timekeeping is a molecular dance, and it’s very complicated.”

Researchers continue to explore exactly what makes our biological clocks tick. The answers they find may eventually lead to new treatments for sleep disorders, jet lag and other health problems.
As a Sjögren’s patient, it’s easy to feel confused or overwhelmed by the abundance of information available about the illness and how it affects your body. But now there is a wonderful opportunity to Empower Yourself and take more control of your health and day-to-day living by learning from the best minds dealing with Sjögren’s. This April, join fellow Sjögren’s patients and their family members, as well as healthcare professionals and other experts who specialize in Sjögren’s, at the 2010 SSF National Patient Conference in San Francisco, California.

SSF programs are the best Sjögren’s patient education opportunities in the country. They have helped thousands gain a better understanding of Sjögren’s and will help you, too. This two-day event will feature an array of presentations from the country’s leading Sjögren’s experts – physicians, dentists, eye care providers, and researchers – who will help you understand how to manage all key aspects of your disease. Presentation topics will include:

- Overview of Sjögren’s Syndrome
- CNS Disease in Sjögren’s
- Lung Complications
- Dry Eye and Dry Mouth Issues
- Heart Disease: The Impact of Inflammation & Autoimmune Diseases
- Neuropathy in Sjögren’s
- Sjögren’s Survival: A Patient Perspective
- The Doctor/Patient Relationship
- Nutrition and Sjögren’s

So this April 9-10, we invite you to come to San Francisco, California, and experience a weekend to Empower Yourself as you gain knowledge and heighten your understanding of Sjögren’s at the 2010 National Patient Conference!

Call 800-475-6473 or visit www.sjogrens.org today to receive the latest information.

Alida Brill is an author and has written and spoken about the personal and public issues surrounding chronic illness. Her latest book, Dancing at the River’s Edge: A Patient and Her Doctor Negotiate a Life With Chronic Illness is a personal dual memoir, written in collaboration with her physician.

Her writing appears in popular and professional periodicals and journals and she is a frequent guest on radio interview shows and television programs. She has been a featured speaker at a variety of conferences and a guest lecturer at many universities and colleges in the United States and abroad. We are delighted to have Ms. Brill as our 2010 Keynote Speaker – you won’t want to miss this informative and moving presentation!
**ATTENDEE** – complete for each registrant

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**FEES** – please circle appropriate fee(s) (Note: Early Bird Deadline is March 15, 2010)

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<th>SSF Members &amp; Guests</th>
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<tr>
<td></td>
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**TOTAL:**

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- Signature  ___________  CC Security Code  ___________

- Refund requests must be made in writing. Registrants whose written request is received by March 26, 2010 will receive a **75% refund**. After that time, we are sorry that **no refunds can be made**.

- Dietary Requests: Unfortunately, we cannot accommodate all special dietary requirements. We can accommodate vegetarian or gluten-free dietary requests. If you require a **vegetarian** or **gluten-free** meal option, please contact Stephanie Bonner at the SSF office (800-475-6473 ext. 210) by March 26th.

- A limited number of rooms are available at the San Francisco Airport Marriott (1800 Old Bayshore Highway, Burlingame, California 94010) at the SSF rate of **$129 per night plus tax** if reservations are made by March 15, 2010. Call the toll-free hotel reservation number at 800-228-9290 or call the San Francisco Airport Marriott directly at 650-692-9100 and refer to the group name “Sjögren’s Syndrome Foundation” for the discounted rate.

- The San Francisco Airport Marriott provides a complimentary shuttle service to/from the San Francisco International Airport.
Spring 2010 Sjögren’s Syndrome Foundation Special Event Calendar

The SSF is very excited for all of our events coming this Spring. Look at our special event calendar below to see if there is a Walkabout or Sip for Sjögren’s coming to your area.

March
20 Long Island Walkabout & Autoimmune Disease Health Fair
Roosevelt Field Mall, Garden City, New York

April
20 Sip for Sjögren’s – Jacksonville
Deercreek Country Club, Jacksonville, Florida
24 Team Sjögren’s – Nashville Country Music Marathon
Nashville, Tennessee

May
1 Philadelphia Walkabout & Autoimmune Disease Health Fair
Tyler State Park, Bucks County, Pennsylvania
2 Sip for Sjögren’s – Atlanta
Nelson Mullins-Atlantic Station, Atlanta, Georgia

June
2 Sip for Sjögren’s – San Diego
San Diego, California
5 Denver Area Walkabout
Denver Zoo. Denver, Colorado
5 Hartford Area Walkabout
Westfield Meriden Mall, Meriden, Connecticut

Visit www.sjogrens.org or contact the SSF office to learn more about our events!