

Sheela Albuquerque  
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Professor Anand Meatiar

### Sjogren's Syndrome

During our study of the Immune System, we learned how cells like the lymphocyte and plasma cells help in the protections of our body by killing any foreign organism, such as viruses and bacteria. Unfortunately, one of the dysfunctions of the immune system is the autoimmune disease where the immune system mistakes the body's own cells as foreign and begin to attack it's own healthy cells. While studying the many autoimmune diseases, Sjogren's syndrome was one that I became interested in and wanted to learn more. In Sjogren's Syndrome, the lymphocytes destroy the salivary and lacrimal glands causing the inability to produce saliva or tears. I work for a ophthalmologist specialist and I also am interested in becoming a dental hygienist so this disease greatly interested me.

Theres is still not enough evidence to suggest the cause of Sjogren's Syndrome only possibilities like genetic factor and environmental factors. Sjogren's Syndrome can begin when the glands become infected by a pathogen. The lymphocytes then will move into the glands for example, the salivary glands to help fight off any foreign pathogens. The lymphocytes will then divide into groups of B-cells to produce antibodies once signaled by the lymphocytes. Then the T-helper cells will signal for B-cells to help in coordinating the other cells to attack the foreigners. T-killer cells will recognize and destroy the infected cells and then the T-Suppressor cells will decrease B-cell activity and T-killer cell production. The gland can become damaged or cells from the gland that were infected by the virus would have been killed by the lymphocytes. When this occurs there are auto antigens that are produced by the gland that are released. In a normal immune system the body ignores the auto antigens produced by the effected gland, but in the autoimmune system the body produces autoantibodies against those antigens produced by the gland. The B-cells can also make a autoantibody called rheumatoid factor. This is an important antibody in diagnosing Sjogren's in a person, when found

in the blood it can be an indicator that the person has Sjogren's. In conclusion, the lymphocytes begin to respond to the gland and further destroy it and possibly moving onto the other glands like lacrimal or salivary. The glands will become so damaged that dryness will develop, in the eyes or mouth. Dryness may also include the nose, throat, larynx, trachea, skin and vagina.

In addition, Sjogren's Syndrome is a systemic disease meaning it can affect a number of organs and tissues including the Digestive system, gastrointestinal tract, lungs, kidney, thyroid and nervous system. In Sjogren's Syndrome 9 out of 10 patients are women. Sjogren's can occur in all races and ages even children. Scientist are still not sure why this is the case. Patients effected by this syndrome will complain of dryness in the eyes and the severe dryness in the mouth with swelling of the parotid glands. Dry mouth will effect chewing, swallowing and speaking and the food will become stuck to the cheek surfaces within the mouth and cracks on the tongue will form. The person will have abnormal taste and smell sensitivities. The person will want to drink lots of water especially while eating and they will begin to get dental decay. In patients with dry eyes will feel a gritty, sandy feeling like a foreign body sensation. They can also feel burning and accumulation of mucus at inner corners of eyelids. Decrease tearing, redness, eye fatigue and itchiness. Other symptoms that can occur in other parts of the body are vaginal dryness, which can be common, to dryness in nose causing nosebleeds. The middle ear can also become inflamed and the person can have symptoms of fever and fatigue.

Working closely with some of these patients has made me see how people can continue a normal life but will have to always remember to take care of themselves. Unfortunately there is no cure for this disease. All the doctors can do is help in suggesting ways to keep the patients comfortable. A person with Sjogren's Syndrome must learn to live comfortably and adjust some of their daily activities. This syndrome teaches us the importance of normal function in each our our organ systems in the body. Once one is effected than it is only a spiral of other complications. Each of our organs systems are connected in some way.

# Ways Sjögren's Syndrome may Affect the Body

Neurological Problems  
concentration, memory  
loss (brain fog)

Dry eyes, corneal  
ulcerations and  
infections

Dry nose, recurrent  
sinusitis, nose bleeds

Difficulty swallowing,  
heartburn, reflux  
esophagitis

Dry mouth, mouth sores,  
dental decay, difficulty  
chewing, speech, taste  
and dentures

Recurrent bronchitis,  
pneumonia, interstitial  
lung disease

Dry skin, vasculitis,  
Raynaud's  
phenomenon

Arthritis, muscle pain

Stomach upset,  
gastroparesis,  
autoimmune pancreatitis

Abnormal liver function  
tests, chronic active  
autoimmune hepatitis,  
preliminary biliary cirrhosis

Peripheral Neuropathy  
(numbness and tingling  
in the extremities)

Vaginal dryness,  
painful intercourse



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