

# *Lupus*



## **Introduction**

Lupus is a chronic, autoimmune disease which affects different regions of the body which include the skin, joints and almost all organs of the body. When a person has lupus, their immune system does the opposite of what it should normally do. It becomes autoimmune meaning it is not able to tell the difference between viruses, bacteria, and germs and your body's healthy tissues. For unknown reasons, the immune system in response then creates autoantibodies that attack and destroy your body's healthy tissue causing damage and pain to the body. The cause of lupus, as well as many other autoimmune diseases, remains unknown.

I chose to research this topic, lupus, because a long time ago, an old family friend of my mother's was diagnosed with lupus. I was not aware of what the illness was, but from what I remember, she suffered severe pains from time to time in her joints and muscles. There were times where she was not able to move from her bed because the pain was so excruciating for her. Considering I was never able to really find out what her illness was, I thought this topic would be good for me to broaden my understanding of the actual illness.

## Section 1: Background and Problem Statement

- **Web site #1 Name: Molly's Fund Fighting Lupus**
- **Web address: <http://mollysfund.org/about-mollys-fund/>**
- **Background Information:**

Healthy People 2020 do not have any information on my topic of Lupus, but there are a number of different government agencies and nonprofit organizations that provide insight on the disease. Molly's Fund Fighting Lupus is an organization that aims to reach the public with knowledge about the disease as well as help people diagnosed with the disease. Their mission is to, "educate the public and the medical community about lupus, to push for earlier, life-saving diagnoses for those afflicted, and to spur governments and foundations to fund research toward a cure." Lupus is not well known or understood but is one of the most common diseases that they believe, with further methods of informing the general public, will assist in providing the necessary information of the disease and aim to lower the mortality rate of the disease. Though Lupus does not have a cure, researchers are working to find a cure. Treatments include those of painkillers, steroids, and recently, as of March of this year 2011, Benlysta has been the first FDA-approved Lupus drug treatment.

- **Web site #2 Name: Lupus Foundation of America**
- **Web address: [http://www.lupus.org/webmodules/webarticlesnet/templates/new\\_learnunderstanding.aspx?articleid=2231&zoneid=523](http://www.lupus.org/webmodules/webarticlesnet/templates/new_learnunderstanding.aspx?articleid=2231&zoneid=523)**
- **Background Information:**

- The Lupus Foundation of America helps to keep the general public informed of the disease with up-to-date information. No genes or groups of genes have been known to cause lupus but there are some findings that suggest that genes may be involved in the development of lupus. There are a variety of environmental factors that scientists have determined to be possible causes of lupus but common features among people with lupus include exposure to sun, a previous infection, being pregnant, giving birth, and a drug taken to treat an illness. There are treatments for the symptoms of lupus but not the actual disease itself.

- **Web site #3 Name: Alliance for Lupus Research**
- **Web address: [http://www.lupusresearch.org/about-lupus/about\\_lupus.html](http://www.lupusresearch.org/about-lupus/about_lupus.html)**
- **Background Information:**
  - A person's risk for developing the autoimmune disease has been thought to be linked to genetic factors and environmental factors such as stress, infection or sunlight. The main feature of Lupus is inflammation, which has alternating periods of flares and remissions. Anyone can develop the disease but nine out of ten people diagnosed with the disease are women. Many people do not realize that they have lupus until long after the repeated symptoms occur. Symptoms for lupus include flu like symptoms with fever and fatigue, as well as painful, swollen joints. There is also the lupus rash, which appears itself across the nose and

cheeks in the form of what people say, a butterfly, hence the butterfly being the symbol for Lupus. In order for one to be diagnosed with Lupus, one must undergo several tests to have a definite answer because results are not immediate.

## Section 2: Research

### **Web site #1 Name: Elevation of proinflammatory cytokine (IL—18, IL-17, IL-12) and Th2 cytokine (IL-4) concentrations in patients with system lupus erythematosus.**

- **Web address:** <http://lup.sagepub.com/content/9/8/589.short>
- **Summary of the research:**
  - According to the study, previous studies indicated that lupus might be caused by an imbalance of T helper cell (Th) cytokines. T helper cells help in establishing and maintaining the capabilities of the immune system. They measured the plasma levels of three proinflammatory cytokines interleukin and a key T helper cell cytokine in patients with lupus and linked the ratio of T helper cytokines with lupus disease activity index. At the end of their study, they concluded that lupus is exemplified by an elevation of Th1 and Th2 cytokines meaning the elevation of proinflammatory cytokines may be a factor for activating the inflammatory process of systemic lupus erythematosus.

### **Web site #2 Name: NFKB1 -94 Insertion/Deletion ATTG Polymorphism Contributes to Risk of Systemic Lupus Erythematosus.**

- **Web address:** <http://www.ncbi.nlm.nih.gov/pubmed/22013908>
- **Summary of the research:**
  - A study was done not too long ago in China in trying to find a contributor to the risk of lupus. The evidence has shown that the nuclear factor, kappaB or NFKB, takes part in the initiation and progression of systemic lupus erythematosus production. A polymorphism in the region of kappaB, was identified as functional, -94 insertion/deletion ATTG. “A total of 224 SLE patients and 256 control subjects were genotyped using a polymerase chain reaction-polyacrylamide gel electrophoresis strategy and DNA sequencing.” Results of their findings indicated that the -94 insertion/deletion ATTG polymorphism may be a possibly influential contributor in the development of systemic lupus erythematosus in the population of China. They are to perform more studies to confirm their finding for other regions of populations.

### **Web site #3 Name: Increased plasma levels of the soluble Mer tyrosine kinase receptor in systemic lupus erythematosus relate to disease activity and nephritis**

- **Web address:** <http://arthritis-research.com/content/13/2/R62/>
- **Summary of the research:**

The study aimed to clarify is plasma levels of soluble Mer and Tyro3 were found at higher levels in lupus, rheumatoid arthritis, or critical limb ischemia. After the study was conducted, they found that there were high levels of Mer and Tryo3 were found in patients with lupus and rheumatoid arthritis but not with critical limb ischemia. Patients with lupus were shown to have the highest levels of Mer and that was a strong link as

well to increased lupus disease activity score. Mer levels were high in patients with lupus nephritis. Plasma concentrations of the two receptors were increased in patients with systemic lupus erythematosus, which aided in emphasizing the TAM receptor shedding was affected by autoimmune diseases. Mer was increased in lupus which reflected the disease activity.

## Section 3: Statistics

**Web site #1 Name:** Quick Stats: Percentage of Adults Aged > 18 Years Who Had Some Form of Arthritis or a Related Condition, by Race/Ethnicity and Hispanic Subpopulation--- National Health Interview Survey, United States, 2009

- **Web address:**  
[http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6036a6.htm?s\\_cid=mm6036a6\\_w](http://www.cdc.gov/mmwr/preview/mmwrhtml/mm6036a6.htm?s_cid=mm6036a6_w)
- **Summary of the statistics:**
  - Certain forms of lupus symptoms have been characterized as joint pain. Many times, people who suffer from the joint pain of lupus, often associate it to that of arthritis. Comparison between adults of different ethnicities who have been told by a doctor or health official that they have some form of arthritis related illnesses. Hispanic adults were the least of the racial ethnicities to receive word that they had some form of arthritis, rheumatoid arthritis, gout, lupus or fibromyalgia. Puerto Rican adults, on the other hand, were the adults who were more likely to have related conditions. As for many illnesses, the minority group always seems to be at a higher risk for certain things than do other groups.
- **Web site #2 Name:** Summary Health Statistics for U.S. Adults: National Health Interview Survey, 2009
- **Web address:** <http://www.cdc.gov/nchs/fastats/arthritis.htm>
- **Summary of the statistics:**
  - According to the Summary Health Statistics for U.S Adults provided by the CDC in 2009, stated that twenty-two percent of adults were told by a doctor or health care professional that they had some form of arthritis, rheumatoid arthritis, gout, lupus, or fibromyalgia; twenty-eight percent of which involved people with chronic joint symptoms. It was also stated in the summary that women were more likely to be diagnosed with either of the listed illnesses than men. This remains still a mystery for why it is that women are more susceptible to certain ailments like lupus than males. Researchers believe that there is a link between the genes and hormones that females possess to those of autoimmune diseases like lupus but a definite answer has not been determined.
- **Web site #3:** Statistics on Lupus
- **Web address:**  
[http://www.lupus.org/webmodules/webarticlesnet/templates/new\\_newsroomreporters.aspx?articleid=247&zoneid=60](http://www.lupus.org/webmodules/webarticlesnet/templates/new_newsroomreporters.aspx?articleid=247&zoneid=60)
- **Summary of the statistics:**

- The Lupus Foundation of America is an organization that provides the public with sufficient information regarding all that encompasses the disease. Some of its statistics state that about five million people worldwide have lupus and about five of that five million consists of Americans. As do all of the studies and rates show, lupus can affect men and women of any age, but the vast majority of those that are affected by the disease, ninety percent, are women. Systemic lupus accounts for seventy percent of all cases of lupus and cutaneous lupus accounts for ten percent of all cases of lupus. “The U.S. Centers for Disease Control and Prevention issued a report in May 2002 which indicated that deaths attributed to lupus increased over a 20-year period, particularly among African American women ages 45-64.” There is a crucial need for the public to increase their awareness of lupus. Because there are so many who are still not aware of lupus, they are not able to be warn those who are at a greater risk of the disease.

## Section 4: Consumer Information

- **Web site #1 Name: Medline Plus**
- **Web address: <http://www.nlm.nih.gov/medlineplus/lupus.html>**
- **Summary of the information:**
  - Lupus comes in different forms. Systemic lupus erythematosus which is the most common, discoid lupus which causes a rash that does not go away, subacute cutaneous lupus which causes sores on ones skin after being out in the sun, and drug-induced lupus. A rare lupus that affects newborns is neonatal lupus. Lupus is more common among African American, Hispanic, Asian and Native American women. Symptoms include joint and muscle pain, flu like symptoms with high fevers, and red rashes, typically on the face. There is no one test the one can take to find out if they have lupus. It can take anywhere from months to years to diagnose.
- **Web site #2 Name: Food and Drug Administration**
- **Web address: <http://www.fda.gov/NewsEvents/Newsroom/PressAnnouncements/ucm246489.htm>**
- **Summary of the information:**
  - As of March 2011, the Unite States Food and Drug Administration approved Benlysta to treat people with systemic lupus erythematosus, who receive therapy. The drug is delivered into a vein and is designed to target the B-lymphocyte stimulator protein. The end result of the drug may reduce the number of abnormal B cells, which is what is thought to be a problem in lupus. Before Benlysta, patients were advised to take Plaquenil and corticosteroids, as well as aspirin. Considering it has been over 50 years that there has been a new drug for lupus patients, it has brought about more advantages for those with the disease and helps to manage their symptoms. During the studies that were run before the drug was put on the market, they found positive results for lupus patients in the sense that they were experiencing less disease activity.
- **Web site #3 Name: Mayo Clinic**

- **Web address:** <http://www.mayoclinic.com/health/lupus/DS00115/DSECTION=risk-factors>
- **Summary of the information:**
  - The only two main factors that which lupus results from at this point in time are most likely your genetics and the environment in which you surround yourself. Once you are diagnosed with the disease, it becomes a lifestyle; the disease does not go away. The cause of the disease is unknown but there are certain risk factors for the disease like sex in which females are mostly susceptible, age (15-44), race (African, Hispanic, Native American), sunlight exposure, certain prescribed medicines, infection with Epstein-Barr virus (simply a fever or sore throat), and exposure to chemicals. Yes, there are some factors that we have no control over like our genetics, but there are some like our environment, in which we do have control over.

## Section 5: Solutions to the Problem (or Issue)

- **Web site #1 Name: Lupus Foundation of Pennsylvania**
- **Web address:** <http://www.lupuspa.org/>
- **Summary of the information:**
  - The Lupus Foundation of Pennsylvania is a non-profit organization that aims to “To promote awareness, education, service and research for those affected by lupus.” This organization in the state of Pennsylvania has four branches throughout the state in Harrisburg, Pittsburg, Erie and Northeast. This organization provides information for people who are both curious and looking for answers on lupus. It provides info about the disease and where they can go for additional help, which include their clinics. They also provide a place on the Web site to chat with former lupus patients and be more connected with the programs it has to offer. Donations are optional and aid in research for a cure for the disease.
  
- **Web site #2 Name: Lupus Foundation of Long Island/Queens**
- **Web address:** <http://www.lupusliqueens.org/>
- **Summary of the information:**

The Lupus Alliance of American is a non-profit organization that is a combination agencies that provide services to those affected by lupus within their communities. Their mission is “To ensure the delivery of services to those affected by lupus through affiliate members and other agencies and to fund research efforts.” The alliance supports those who are in favor of finding a cure for lupus and strengthen treatment of lupus by providing money for research and the distribution of information to the public. They promote programs of public awareness and education of the disease. People are able to volunteer at the organization as well providing assistance in advocating to communities. Donations are voluntary and are accepted solely for research and to promote awareness.

- **Web site #3 Name: Dorough Lupus Foundation**
- **Web address: <http://www.doroughlupusfoundation.org/main.html>**
- **Summary of the information:**

The Dorough Lupus Foundation is an independent, non-profit organization. The main goals of the organization are to assist in research and educating the public about lupus. “It is the objective of the Foundation to make our organization the most prominent and compassionate Lupus Advocacy group around the globe, aiding and supporting those affected and/or affected by Lupus.” They give to others and their families who are suffering from lupus the opportunity that Howard’s family was not given when his sister was diagnosed with the disease.

## Conclusions

After having the opportunity to look through all of the helpful research and information provided about this disease, I now have a better understanding of what lupus is, as compared to before when I was clueless as to what it even was. Though there is not a definite answer as to how the disease develops, I am now aware that being a female, I have a higher risk of developing the disease. Though the reasons are not clear, there are studies to demonstrate how people who develop lupus were exposed to certain environmental risk factors, so I will try to keep those in mind for the remainder of my life and strive to live a healthy life away from developing diseases if precautions are met properly. I was unaware of how many people are diagnosed with the disease yet so many do not even have a clear understanding of the disease because of lack of advocacy of lupus. It is so common yet most misunderstood. If people took the time to find information on the disease, then they would have a better understanding of how to help others and to possibly diagnose themselves when they begin to have onset symptoms of the disease. Though there is no cure for lupus, I am sure that with our advanced technology, we will be able to find a cure in the near future. The fight for lupus will take determination and knowledge.

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