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# Systemic Lupus Erythematosus

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# Systemic Lupus Erythematosus (SLE)

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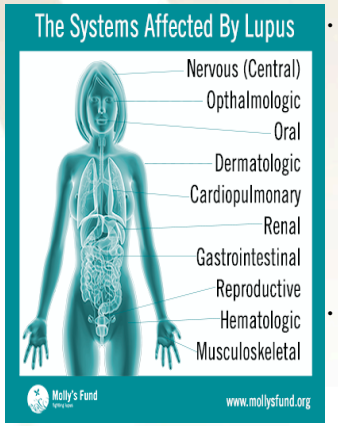
## Introduction

My chosen research topic is systemic lupus erythematous (SLE), otherwise commonly known as lupus. Lupus is an autoimmune disease that affects many different body systems, and has no cure. There are a plethora of symptoms associated with the disease, and symptoms can vary greatly from person to person. Additionally, lupus can progress gradually and has periods of flares and remission like several other autoimmune diseases. All of these factors combined can make this disease very hard to diagnose, and therefore treat (Lam, Ghetu, & Bieniek, 2016). By researching and learning more about lupus, I strive to gain a better understanding of this disease and its pathophysiology, symptoms, and appropriate treatment options. This will allow me to educate other healthcare providers, and my peers, on the disease, as well as provide better care to my patients in my future practice.

I chose this topic for several reasons. For one, I myself have been diagnosed with an autoimmune disease, but after several years of constant lab work, tests, and exams, my physicians have been unable to pinpoint a specific disease or cause of my health problems. My current "diagnosis" is "undifferentiated connective tissue disease". Based on some of my blood tests, my physician has contemplated whether I may have lupus, but we have been unable to reach that conclusion, for now. I personally understand the frustrations that come with having health problems that are not fully understood. For this reason, I am extremely driven to better understand these autoimmune diseases that are chronic and difficult to diagnose, specifically lupus because it is so complex and debilitating. I want to appreciate all that goes into caring for patients with this disease, and therefore become better able to assist my future patients that may also have lupus.

## Signs and Symptoms

- Common first presenting symptoms are often nonspecific, and include fatigue, fever, weight loss, rashes, and joint pain. The cause of these symptoms can be difficult to pinpoint (Lam, Ghetu, & Bieniek, 2016)
- Other common observable symptoms include arthritis, arthralgia, myalgia, anemia, and photosensitivity (Robinson, Sheets Cook, & Currie, 2011)
- The most well known sign of SLE is the malar rash, or "butterfly rash" over the cheeks and nose (Robinson, Sheets Cook, & Currie, 2011), although this is not seen in all patients
- Patients can have multiple organ systems affected, and therefore destructed. Common target organs of SLE are the kidneys, joints, skin, and brain (Moulton & Tsokos, 2015). Depending on the organs affected, symptoms could also include pericarditis, pleuritis, fibromyalgia, cognitive dysfunction, nausea, diarrhea, lymphadenopathy, skin lesions, and menstrual irregularities (Weinstein, 2012)




## Disease Process

- The etiology of SLE is still largely unknown (Cunha & Gilek-Seibert, 2016)
- The disease is usually progressive, with periods of flares and remission (Robinson, Sheets Cook, & Currie, 2011). Patients may state there are times when their symptoms are worse or improved.
- SLE is ten times more common in females than in males (Lam, Ghetu, & Bieniek, 2016).

## Diagnosis

- There is no specific test or biomaker for the disease. Diagnosis should be made based on clinical presentation, as well as labwork and other diagnostics (Weinstein, 2012)
- Patients with SLE generally present with nonspecific complaints, and biomarkers may not be present early on the disease (Lam, Ghetu, & Bieniek, 2016). This makes diagnosing SLE very difficult. The average time from initial presentation to confirmed diagnosis is often two years (Weinstein, 2012).
- Due to the complexity of the disease, The American College of Rhematology (ACR) has formulated 11 diagnostic criteria for SLE. If a patient meets at least four of the criteria, a diagnosis of SLE can typically be made. The criteria are malar or discoid rash, photosensitivity, oral ulcers, arthritis, serositis, abnormal ANA titer, and renal, neurologic, hematologic, and immunologic disorder/dysfunction (Lam, Ghetu, & Bieniek, 2016).
- Labwork that can be used to aid in diagnosing a patient includes ANA, CBC, CMP, sedimentation rate, C-reactive protein, complement, and certain antibodies (Cunha & Gilek-Seibert, 2016)

LUPUS

## Nursing Implications

- SLE can be extremely difficult to diagnose, due to the variety of symptoms/presentations of the disease, as well as the many diagnostic labs and criteria used to assist in diagnosing (Lam, Ghetu, & Bieniek, 2016). Therefore, providers must familiarize themselves with the disease and potential complications when caring for these patients
- Care for patients with SLE can involve providers of different specialties, depending on the organs/systems that are involved (Tunnicliffe, Singh-Grewal, Kim, Craig, & Tong, 2015)
- The role of providers is to understand the manifestations of SLE to accomplish early diagnosis, treating and monitoring disease progression, to refer to specialists as needed (Lam, Ghetu, & Bieniek, 2016). Additionally, a goal is to maintain patients' quality of life (Robinson, Sheets Cook, & Currie, 2011)
- Patients should be educated continuously, and offered support as the disease progresses (Lam, Ghetu, & Bieniek, 2016)
- It is important for providers to try to understand what may trigger a specific patient's flares, with the goal being to prevent and predict them (Fernandez & Kirou, 2016)

## ACR DIAGNOSTIC CRITERIA

**Skin criteria**
1. Butterfly rash
2. Discoid rash
3. Photosensitivity
4. Oral ulcers

**Systemic criteria**
5. Arthritis
6. Serositis
7. Kidney disorder
8. Neurologic disorder

**Laboratory criteria**
9. Hematologic abnormalities
10. Immunologic disorder
11. Antinuclear antibody

## Pathophysiology

- SLE is characterized by abnormal immune cell activation (Moulton & Tsokos, 2015)
- In SLE, the body produces autoantibodies against self-antigens, which form immune complexes that once deposited in an organ system, prompt an immune response. This response can attract leukocytes to the site, and activate the complement system, clotting cascade, and proinflammatory cytokines (Turano, 2013).
- An imbalance of pro and anti-inflammatory cytokines exists, which alters B and T cells signaling systems. Some examples include interleukins, interferons, and tumor necrosis factor (Connolly & Hakonarson, 2012)
- Interleukin 2 (IL-2) is decreased, which causes abnormal T cell activation. This leads to decreased activated-induced apoptosis of these defective T cells, which is necessary to delete unwanted cells (Moulton & Tsokos, 2015)
- T Regs, which control peripheral immune response, are decreased in patients with SLE (Moulton & Tsokos, 2015)
- This unregulated inflammatory response causes damage to local tissues and organs (Turano, 2013)

## Significance of Pathophysiology

- The pathophysiology of SLE affects many body systems. There are now different classifications for the disease (Cunha & Gilek-Seibert, 2016)
- Environmental factors may assist with triggering SLE. This includes exposures to UV light and certain infections. These factors may have cytotoxic effects, and may start the inflammatory process (Fernandez & Kirou, 2016). Based on a patient's presenting symptoms and by asking about these types of exposures, a clinician can better isolate a diagnosis.
- Because of the alterations of the innate and active immune responses, infections are common and can be life-threatening in these patients. Infection is the most common cause of morbidity and mortality for those with SLE (Doaty, Agrawal, Bauer, & Furst, 2016).
- The inflammatory process of SLE is parallel to the mechanisms that form atherosclerotic plaques. Autoantibodies to endothelial cells, which contribute to the initial vessel wall injuries, are often present in patients with SLE. These are some of the reasons that patients with SLE are at a higher risk of cardiovascular disease than the general population (Turano, 2013).
- Medical treatment for SLE often includes NSAIDS, antimalarial drugs, and corticosteroids (Turano, 2013)

## Conclusions

- SLE is an unpredictable, complex, and often debilitating disease.
- It is crucial for providers to understand the complexity of the disease and its course, in order to best provide for these patients.
- Additional research and studies are needed so that providers and patients can better understand the disease and how to manage it
- Many complications can arise from SLE, due to its affects on the body on many different levels. Providers who treat and manage this disease must also be prepared to encounter other diseases and medical problems, and be constantly monitoring for these potential complications.

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ACR Diagnostic Criteria image. Retrieved from: https://image.slidesharecdn.com/lupus-120404063414-phpapp01/95/sle-20-728.jpg?cb=1333523626

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