Centers for Disease Control and Prevention
CDC 24/7: Saving Lives, Protecting People™

REVIEWED
By Chris at 2:09 pm, Aug 12, 2019

Lupus

Systemic Lupus Erythematosus (SLE)

What is SLE?

Systemic lupus erythematosus (SLE), is the most common type of lupus. SLE is an autoimmune disease in which the immune system attacks its own tissues, causing widespread inflammation and tissue damage in the affected organs. It can affect the joints, skin, brain, lungs, kidneys, and blood vessels. There is no cure for lupus, but medical interventions and lifestyle changes can help control it.

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How serious is SLE?

The seriousness of SLE can range from mild to life-threatening. The disease should be treated by a doctor or a team of doctors who specialize in care of SLE patients. People with lupus that get proper medical care, preventive care, and education can significantly improve function and quality of life.

Learn what you can do to manage lupus.

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What causes SLE?

The causes of SLE are unknown, but are believed to be linked to environmental, genetic, and hormonal factors.

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What are the signs and symptoms?

People with SLE may experience a variety of symptoms that include fatigue, skin rashes, fevers, and pain or swelling in the joints. Among some adults, having a period of SLE symptoms—called flares—may happen every so often, sometimes even years apart, and go away at other times—called remission. However, other adults may experience SLE flares more frequently throughout their life.

Other symptoms can include sun sensitivity, oral ulcers, arthritis, lung problems, heart problems, kidney problems, seizures, psychosis, and blood cell and immunological abnormalities.

Learn more about lupus symptoms.

Learn more about lupus triggers and how to control your symptoms on the Managing Lupus page.

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What are the complications of SLE?

SLE can have both short- and long-term effects on a person's life. Early diagnosis and effective treatments can help reduce the damaging effects of SLE and improve the chance to have better function and quality of life. Poor access to care, late diagnosis, less effective treatments, and poor adherence to therapeutic regimens may increase the damaging effects of SLE, causing more complications and an increased risk of death.[1]

SLE can limit a person's physical, mental, and social functioning. These limitations experienced by people with SLE can impact their quality of life, especially if they experience fatigue. Fatigue is the most common symptom negatively affecting the quality of life of people with SLE.[2,3]

Many studies use employment as a measure to determine the quality of life of people with SLE, as employment is central to a person's life.[3] Some studies have shown that the longer a person has had SLE, the less likely they are to be a part of the workforce. On average, only 46% of people with SLE of working age report being employed.[3]

Adherence to treatment regimens is often a problem, especially among young women of childbearing age (15 to 44 years). Because SLE treatment may require the use of strong immunosuppressive medications that can have serious side effects, female patients must stop taking the medication before and during pregnancy to protect unborn children from harm.

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Can a woman with SLE have a healthy pregnancy?

Women with lupus can safely get pregnant and most will have normal pregnancies and healthy babies. However all women with lupus who get pregnant are considered to have a "high risk pregnancy."

Learn more about pregnancy and lupus.

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How is SLE diagnosed?

SLE is diagnosed by a health care provider using symptom assessments, physical examination, X-rays, and lab tests. SLE may be difficult to diagnose because its early signs and symptoms are not specific and can look like signs and symptoms of other diseases.[1] SLE may also be misdiagnosed if only a blood test is used for diagnosis. Because diagnosis can be challenging, it is important to see a doctor specializing in rheumatology for a final diagnosis. Rheumatologists sometimes use specific criteria [PDF -510KB] to classify SLE for research purposes.

Learn more about lupus diagnosis and treatment.

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Who is at risk for SLE?

SLE can affect people of all ages, including children. However, women of childbearing ages—15 to 44 years—are at greatest risk of developing SLE.[1] Women of all ages are affected far more than men (estimates range from 4 to 12 women for every 1 man).[1]

Learn more about lupus in women.

Minority racial and ethnic groups—blacks/African Americans, Hispanics/Latinos, Asians, and American Indians/Alaska Natives—are affected more than whites/Caucasians.[1]

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Does SLE run in families?

Most people with SLE do not have family members with the disease; however, some people with SLE do have a family history of the disease. Men and women with an immediate family member with SLE have only a slightly higher risk for the disease.

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How is SLE treated?

Treating SLE often requires a team approach because of the number of organs that can be affected.

SLE treatment consists primarily of immunosuppressive drugs that inhibit activity of the immune system. Hydroxychloroquine and corticosteroids (e.g., prednisone) are often used to treat SLE. The FDA approved belimumab in 2011, the first new drug for SLE in more than 50 years.

SLE also may occur with other autoimmune conditions that require additional treatments, like Sjogren's syndrome, antiphospholipid syndrome, thyroiditis, hemolytic anemia, and idiopathic thrombocytopenia purpura.[1]

Learn more about lupus treatment.

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How many people have SLE?

Incidence and prevalence are terms commonly used to describe how many people have a disease or condition.

CDC uses the latest available data for important research questions. Recent national estimates of prevalence and incidence are not available for SLE. SLE is relatively uncommon, is difficult to diagnose, and is not a reportable disease, so it is expensive to capture all diagnosed cases reliably for epidemiologic studies. There are no recent studies to determine if SLE prevalence or incidence are changing over time.

CDC funded several population-based patient registries to better estimate how many people have doctor-diagnosed SLE in certain racial/ethnic groups. The registries provide the most recent available prevalence and incidence estimates for SLE for whites, blacks, and American Indians/Alaska Natives was published in 2014, and those for Hispanics and Asians were published in 2017. The CDC-funded lupus registries used similar intensive methods for case finding (hospitals, specialists' practices, health department data) and for seeing if possible cases met standard classification criteria (i.e., medical record review). See the Lupus Studies page for more information.

Prevalence

Prevalence is a measurement of all individuals affected by a disease at a particular time, usually a year.

Older national prevalence estimates vary widely due to differences in case definitions, small study populations, and study methods. A conservative estimate suggests a prevalence of 161,000 with definite SLE and 322,000 with definite or probable SLE.[4]

Results from the CDC Lupus registries estimated that annual prevalence from 2002–2004 was much higher for blacks than whites in Michigan (Washtenaw and Wayne Counties) (111.6 vs 47.5 per 100,000 people)[5] and in Georgia (DeKalb and Fulton Counties) (128.0 vs 39.9 per 100,000 people).[6] Annual prevalence from 2007–2009 for American Indians/Alaska Natives was 178 per 100,000 people.[7] Registries in California (San Francisco County) and New York City (Manhattan) provided 2007-2009 prevalence estimates for Hispanics (90.5 and 82.2 per 100,000 people, respectively) and Asians (94.7 and 56.2 per 100,000 people, respectively).[8,9]

Annual prevalence estimates were much higher among women than men in Michigan (9.3 vs 1.5 per 100,000 people),[5] in Georgia (145.8 vs 17.5 per 100,000 people),[6] and in the American Indian/Alaska Native population (271 vs 54 per 100,000 people).[7] From 2007–2009, in San Francisco County and Manhattan, estimates were higher among women than men for Hispanics (CA: 149.7 vs 22.9; NYC: 138.3 vs 19.4 per 100,000 people) and Asians (CA: 177.9 vs 20.1; NYC: 91.2 vs 14.2 per 100,000 people).[8,9]

Incidence

Incidence is a measurement of the number of new cases of individuals who contract a disease during a particular period of time, often a year.

Recent national incidence estimates are not available for SLE. National incidence data are difficult to obtain because it is relatively expensive to capture all diagnosed cases reliably (learn more about SLE prevalence and incidence above) and the year of onset is hard to determine (slowly developing, non-specific symptoms and signs), so resource-intense studies must be done in small areas.[1]

SLE incidence estimates are available from the five CDC-funded lupus registries. Annual incidence for different racial/ethnic groups from 2002–2004 was much higher for blacks than whites in Michigan (7.9 vs 3.7 100,000 people)[5] and in Georgia (9.4 vs 3.2 per 100,000 people).[6] Annual incidence from 2007–2009 for American Indians/Alaska Natives was 7.4 per 100,000 people).[7] From 2007–2009, incidence for Hispanics in San Francisco County and Manhattan was 4.1 and 4.0 per 100,000 people, respectively, and for Asians, incidence was 4.2 and 3.8 per 100,000 people, respectively.[8,9]

Annual incidence estimates were much higher for women than men in Michigan (9.3 vs 1.5 per 100,000 people),[5] Georgia (10.6 vs 1.9 per 100,000 people)[6] and the American Indian/Alaska Native population (unadjusted 8.4 vs 2.7 per 100,000 people).[7] Hispanic women had higher incidence estimates than men in San Francisco County (7.2 vs 0.6 per 100,000 people) and Manhattan (6.5 vs 1.3 per 100,000 people), as well as Asian women in San Francisco County (8.9 vs 0.3 per 100,000 people) and Manhattan (6.6 vs 0.5s per 100,000 people).[8,9]

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Can a person die from SLE?

Causes of premature death associated with SLE are mainly active disease, organ failure (e.g., kidneys), infection, or cardiovascular disease from accelerated atherosclerosis.[10] In a large international SLE cohort with average follow-up of over 8 years during a 1958–2001 observation interval, observed deaths were much higher than expected for all causes, and in particular for circulatory disease, infections, renal disease, and some cancers. Those who were female, younger, and had SLE of short duration were at higher risk of SLE-associated mortality.[11]

Using death certificates for US residents, SLE was identified as the underlying cause of death for an average of 1,176 deaths per year from 2010–2016.[12] SLE was identified as a contributing cause of death (one of multiple causes of death, including underlying cause of death) for an average of 2,061 deaths per year during that 7-year-period.[13]

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What is CDC doing about SLE?

CDC has previously funded five lupus registries and the development of a public health agenda to guide public health efforts. Currently, CDC is funding work on several SLE-relevant activities, such as three follow-up studies and research for self-management. For more information, visit the CDC-funded activities page.

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Other Types of Lupus

SLE is the most common and most serious type of lupus. Other types of lupus include the following:

Cutaneous lupus (skin lupus) is lupus that affects the skin in the form of a rash or lesions. This type of lupus can occur on any part of the body, but usually appears where the skin is exposed to sunlight.

Drug-induced lupus is similar to SLE, but occurs as the result of an overreaction to certain medications. Symptoms usually occur 3 to 6 months after starting a medication, and disappear once the medicine is stopped.[14] Learn more about drug-induced lupus on the Medline Plus website .

Neonatal lupus occurs when an infant passively acquires auto-antibodies from a mother with SLE. The skin, liver, and blood problems resolve by 6 months, but the most serious problem—congenital heart block—requires a pacemaker and has a mortality rate of about 20%.[15]

Additional Information

CDC Resources

- Lupus Basics
- CDC-Funded Lupus Activities
- CDC-Recommended Intervention Programs for Arthritis and other Rheumatologic Conditions

External Resources

- National Resource Center on Lupus
- Lupus Research Alliance
- American College of Rheumatology–Lupus [En–Español]
- The Lupus Initiative
- National Institute of Arthritis and Musculoskeletal and Skin Diseases [En–Español]

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Page last reviewed: October 17, 2018
Content source: Division of Population Health , National Center for Chronic Disease Prevention and Health Promotion , Centers for Disease Control and Prevention