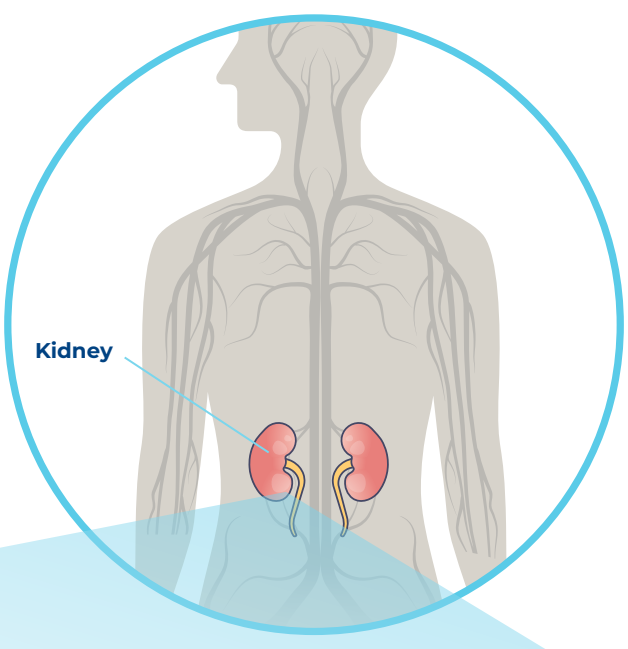
Lupus Nephritis (LN)

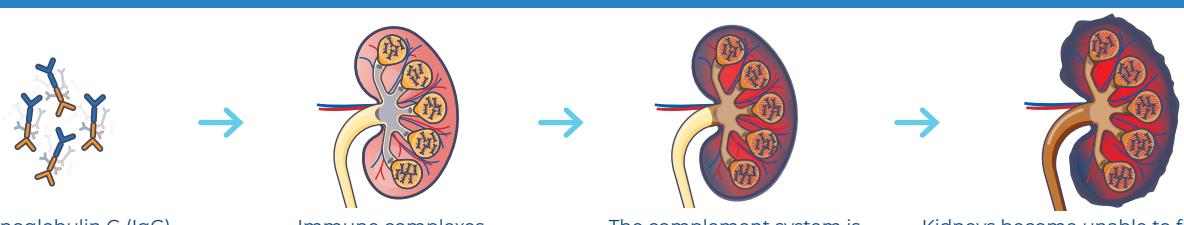
WHAT IS LUPUS NEPHRITIS (LN)?

Lupus nephritis (LN) is a **disease caused by systemic lupus erythematosus (SLE)**, also known as lupus. It develops in approximately 20-60% of people living with this autoimmune disease. LN occurs when the immune system is inappropriately activated to target or "attack" the kidneys.[1]

In LN, immune complexes (e.g., immunoglobulin G (IgG) and antigen) accumulate in the kidneys and activate the complement system, **leading to inflammation and kidney damage**. This damage can impact the kidneys' ability to function properly, **resulting in chronic kidney disease (CKD) that can progress to end-stage kidney disease (ESKD)**.[1,2]



Immune Complexes Causing Damage to the Kidney



Immunoglobulin G (IgG) and antigen bind together forming immune complexes

Immune complexes accumulate in the kidneys

The complement system is activated, leading to inflammation and kidney damage

Kidneys become unable to function properly, resulting in CKD that can progress to ESKD

Each year, LN is estimated to affect approximately:[3]

~54K | ~58K | ~28K | ~71K

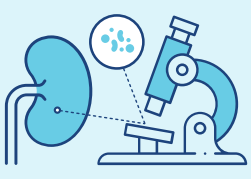
LN affects people of every racial and ethnic group, but **more commonly affects people of African American, Hispanic and Asian descent.** Teenagers and young adults, **particularly young women**, are more likely to develop LN than other age groups.[4-6]

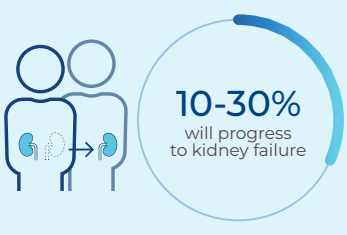
People with LN may experience signs and/or symptoms, including:[7,8]

- Red or cola-colored urine (hematuria)
- Foamy urine (proteinuria)
- Swelling in the hands, legs, ankles or feet (edema)
- High blood pressure (hypertension)
- High cholesterol
- Weight gain
- Fatigue
- Loss of appetite
- Increased urination

HOW IS LN DIAGNOSED AND MANAGED?

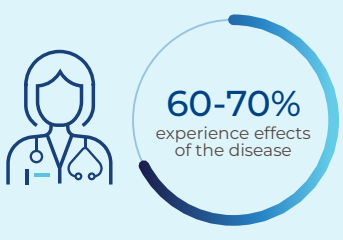
LN often develops **within the first 6-36 months from when lupus symptoms first appear.** If LN is suspected, preliminary blood and urine tests are done to determine if a kidney biopsy is needed. **LN is ultimately diagnosed based on results from the biopsy**, which is considered the gold standard in LN.[4]



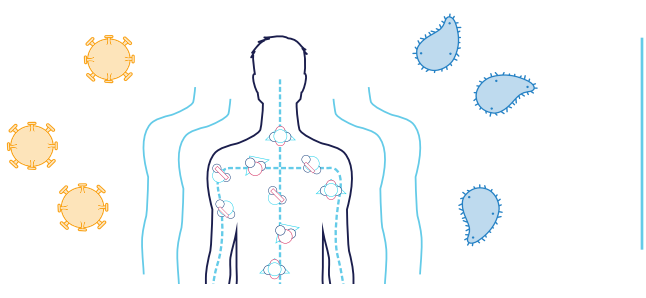


Some people with LN experience spikes in disease activity, called renal flares, that may accelerate the progression of CKD. **Approximately 10–30% of patients living with LN will progress to kidney failure, or end-stage kidney disease,** requiring dialysis – a process that removes waste from the blood when the kidneys are unable to do so – or kidney transplant.[4]

Current treatments for LN involve the use of steroids and immunosuppressants, which may have negative side effects. In addition, **60-70% of people living with LN continue to experience effects of the disease despite being on treatment**, reinforcing the need for treatments that can improve outcomes and quality of life.[9-11]



THE COMPLEMENT SYSTEM



The complement system is a part of the immune system and is **essential to the body's defense against infection**.[12]

When the system is **thrown out of balance**, or dysregulated, these proteins can **trigger a dangerous, uncontrolled cascade of reactions** that attack cells and tissues resulting in **harmful inflammation** and the **destruction of healthy cells**.[13]

WHAT ROLE MAY COMPLEMENT INHIBITION PLAY IN TREATING LN?

There is strong evidence suggesting that the complement system may play a role in kidney diseases, including LN, and Alexion is **investigating complement inhibition as a potential treatment for this disease.** Through this research, Alexion hopes to **improve the journey to diagnosis and treatment for patients and their caregivers**.

Alexion's leadership in complement inhibition has set the course for the continued study and development of innovative treatments for rare complement-mediated diseases, including LN.

WHAT TREATMENT APPROACH IS BEING STUDIED BY ALEXION?

Alexion is **conducting multiple clinical trials investigating the safety and efficacy of inhibiting various parts of the complement system in adults with LN**. These clinical trial programs are evaluating the potential of inhibiting terminal complement (by blocking the C5 protein) or Factor D, another complement system protein.

Alexion has demonstrated an **unyielding commitment to unlocking the potential of the complement system** and continues to pioneer innovations for people living with rare diseases.

References:

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