

C3 glomerulopathy

What is C3 glomerulopathy?



C3 glomerulopathy (C3G) is a complex and progressive rare kidney disease.¹⁻³ The disease affects people of all ages, starting in childhood and young adulthood.^{1,3,4} Generally, C3G is more common in men than women.⁵⁻⁷ Each year, approximately 1-2 new cases of C3G per million people are diagnosed worldwide.¹

What causes C3G?

The complement system is a key part of the body's innate immune system that acts as part of the first line of defense against infections. It is made up of three pathways: classical, lectin, and alternative complement pathway.⁸⁻¹⁰ In C3G, the alternative complement pathway becomes dysregulated, which triggers the formation of C3 protein deposits in the kidneys.¹¹⁻¹⁴ This causes inflammation and leads to progressive kidney damage, and eventually loss of kidney function.^{13,15}

There are two major subtypes of C3G: dense deposit disease (DDD) and C3 glomerulonephritis (C3GN). These subtypes differ in the density and location of C3 protein deposits in the kidneys.^{4,12,16}

What are the symptoms of C3G?

C3G presents many similar symptoms to other more common kidney diseases, so an exact diagnosis can be difficult. Diagnosis of C3G can only be confirmed by a kidney biopsy.^{3,11,17-19}

Common signs and symptoms include:^{20,21}



Foaming urine caused by proteinuria (protein in the urine)



Recurrent infections



Fatigue



High blood pressure



Swelling of the hands, feet, and ankles due to fluid retention



Hematuria (blood in the urine)



Anxiety and/or depression

Approximately 50% of C3G patients progress to kidney failure within 10 years of diagnosis and require dialysis or a kidney transplant.^{3,12} Unfortunately, transplants have limited success, with C3G returning in over 55% of people.²²⁻²⁵

Unmet needs remain for people living with C3G

Unfortunately, there are currently no treatments that target the underlying cause of C3G.^{12,18,26}

Current treatment options are limited and include first-line use of angiotensin-converting enzyme (ACE) inhibitors or angiotensin receptor blockers (ARBs) to control blood pressure, followed by oral corticosteroids and/or immunosuppressants that often come with significant side effects, including hypertension, diabetes, mood swings, obesity, and a heightened risk of infections.^{13,26-29}

27%

cannot participate in sports or other physical activities they enjoy

25%

have had to miss school or work

22%

have experienced social isolation

The emotional, physical, and social effects of C3G and its symptoms can have a considerable impact on a patient's quality of life. In a recent study, 25% of patients reported that they have had to miss school or work, and 21% of patients reported that they have had depression due to the effects of C3G.²¹

There is a need for effective, targeted therapies for C3G that can slow disease progression and alleviate symptoms.^{3,18,26}

Resources from the community

Patient advocacy organizations have information and resources to help people living with kidney diseases. Visit:

- <https://www.kidney.org>
- <https://www.kidneyfund.org>
- <https://www.kephcure.org>

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