The Impact of Alagille Syndrome (ALGS)

About ALGS

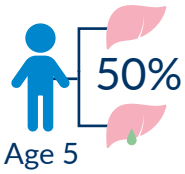
ALGS is an inherited rare genetic condition that can affect the **liver**, **heart**, **brain**, **blood vessels** and **bones**.[1]

It can cause severe and even life-threatening complications such as **liver failure**, **heart defects**, and **bleeding** or **stroke** due to **blood vessel problems**.[2]

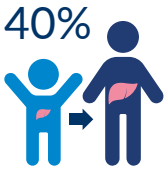
1 in 30,000

Up to **1 in 30,000 babies** are born with ALGS each year. [1,3] Children who have one parent with ALGS have a 50% chance of inheriting the disease.[2]

Symptoms of ALGS usually appear shortly after birth or in early infancy. For this reason, ALGS is often diagnosed in children **younger than one year of age** and can affect **males and females** of **all races and geographic locations equally**.[2,4]



Some young children with ALGS have a severe build-up of bile in the liver.[2] In about half of these children, the flow of bile out of the liver improves by age five**. In the other half, the build-up of bile in the liver gets worse and leads to complications**.[2]

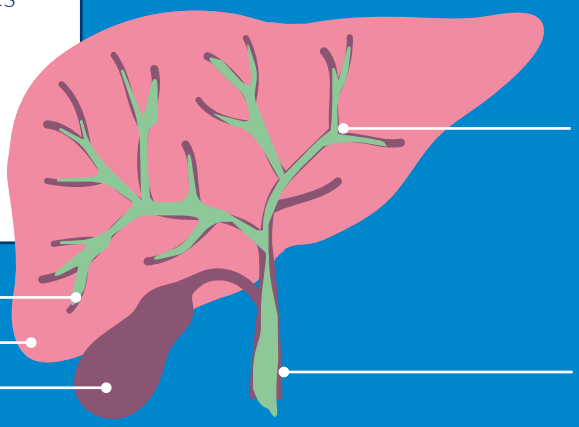


Only about 40% of children with ALGS will reach adulthood with their own (native) liver.[5]

What happens in the liver?

A healthy liver produces bile, a liquid that helps with digesting fats and absorbing vitamins.

Bile is transported through bile ducts.[1]



90% of people with ALGS have fewer than normal bile ducts which can lead to an increase in bile acids in the liver (cholestasis). This prevents the liver from draining the bile properly, leading to liver damage.[1]

This can also lead to a back-up of bile in the liver and bloodstream and may lead to intolerable itching, known as pruritus,[6] which can be so intense that patients may scratch through their skin.[7]

Symptoms

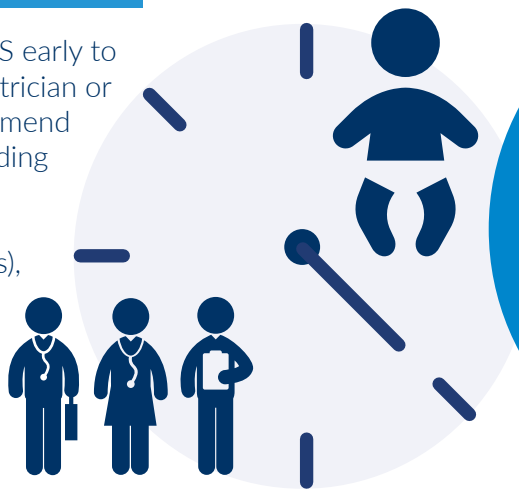
ALGS doesn't affect everyone in the same way, but common symptoms include:[7,8]

- Intolerable itching (pruritus)
- Enlarged spleen
- Swishing heartbeats (heart murmurs)
- Yellowing of skin (jaundice)
- Change in size or shape of blood vessels
- Spinal growth changes
- Failure to thrive (impaired development or growth)
- Eye abnormalities
- Decreased or impaired kidney function

As many as 88% of people with ALGS present with pruritus, with up to 45% experiencing severe pruritus.[7]

Diagnosis and treatment

It is important to diagnose ALGS early to begin a treatment plan. A pediatrician or general practitioner may recommend a care team of specialists, including hepatologists (liver specialists), cardiologists (heart specialists), nephrologists (kidney specialists), and/or ophthalmologists (eye specialists).



There are limited targeted therapies available for ALGS, so treatment focuses on managing symptoms and complications of the disease.[9]

The impact of ALGS

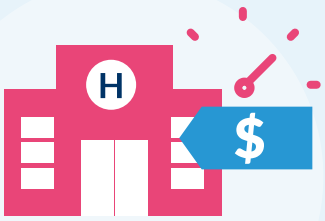
Families living with ALGS have reported a **negative impact** on **mental health** and **finances** as particularly significant challenges.

The ***For Everybody Study***, conducted by the Alagille Syndrome Alliance in 2022 amongst families living with ALGS in the U.S., highlighted the following:

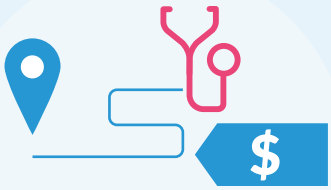
100% of those living with ALGS, including caregivers, suffered from **post-traumatic stress disorder**.[10]

75% of those with ALGS experienced **anxiety**.[10]

25% of families experienced financial issues associated with an ALGS diagnosis, attributed to:



Loss of working hours due to time off for hospital appointments,



The cost of traveling to appointments.

Job loss to stay home to care for the child and medication costs.[10]

Looking to the future

The journey towards enhancing the diagnosis and management of ALGS relies on a multifaceted approach that integrates advancements in medical technology, innovation, research, healthcare professional and patient education, and multidisciplinary care. By fostering greater awareness among healthcare providers, leveraging cutting-edge genetic testing and providing comprehensive support to people living with ALGS and their families, we can strive to achieve earlier diagnosis, personalized treatment strategies, and improved outcomes for people living with ALGS.

References

1. National Organization for Rare Disorders. Rare Disease Database: Alagille Syndrome. Available at: https://rarediseases.org/rarediseases/alagille-syndrome. Accessed January 2025. **2.** National Institute of Diabetes and Digestive and Kidney Diseases. Definition & Facts for Alagille Syndrome. Available at: https://www.niddk.nih.gov/health-information/liver-disease/alagille-syndrome/definition-facts. Accessed January 2025. **3.** Leonard, LD, *et al.* 2014. Clinical utility gene card for: Alagille syndrome (ALGS). *Eur J Hum Genet.* 22(3):435-435. **4.** American Liver Foundation. Alagille Syndrome. Available at: https://liverfoundation.org/liver-diseases/pediatric-liver-disease/alagille-syndrome. Accessed January 2025. **5.** Vandriel, SM, *et al.* (2022). Natural history of liver disease in a large international cohort of children with Alagille Syndrome: Results from the gala study. *Hepatol.* 77(2):512-529. **6.** Ben AS, *et al.* 2016. Management of cholestatic pruritus in children with Alagille syndrome: Case report and literature review. *Archives de Pédiatrie,* 23(12):1247-1250. **7.** Kamath, BM, *et al.* 2018. Systematic review: The Epidemiology, Natural History, and Burden of Alagille Syndrome. *J Pediatr Gastroenterol Nutr.* 67(2):148-156. **8.** Kamath, BM, *et al.* 2020. Outcomes of childhood cholestasis in Alagille syndrome: Results of a Multicenter Observational Study. *Hepatol Commun.* 4(3):387-398. **9.** Sanchez P, *et al.* 2021. Therapeutics Development for Alagille Syndrome. *Front Pharmacol.* 12(704586):2-10. **10.** Alagille Syndrome Alliance. For Everybody Study. Presented by Albireo and Mirum at the Research Roundtable Meeting at the 10th International Symposium and Scientific Meeting for Alagille Syndrome. June 2022.

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