

For the Primer, visit [doi:10.1038/nrdp.2017.11](https://doi.org/10.1038/nrdp.2017.11)

➔ Alopecia areata is an autoimmune disorder characterized by reversible hair loss without loss of the hair follicle.



DIAGNOSIS

Patchy alopecia areata — hair loss in well-defined areas of the scalp — is the most common type



MECHANISMS

Genetic studies in patients and mouse models have shown that alopecia areata is a complex, polygenic disease. Many genes involved in immune regulation, including genes encoding the MHC proteins, are associated with the risk of developing alopecia areata. Histopathological analysis of affected skin showed that hair follicles in the growing phase are attacked by immune cells, which forces the hair follicles to shed hair and to go into a resting stage. Breakdown of immune privilege of the hair follicle, which normally prevents immune response against autoantigens, is thought to be an important driver of this process. Several triggers have been described, including emotional or physical stress and pregnancy; the role of vaccination and infections as triggers has been suggested but is debated.

Mouse models of alopecia areata have been useful to study disease onset, progression and treatment. Most strains of C3H laboratory mice develop alopecia areata spontaneously, but the most reliable and predictable model is transplantation of skin or lymph node cells (or even long-term cultures of these cells) from old, affected mice to young, unaffected C3H mice.



QUALITY OF LIFE

Alopecia areata is associated with poor psychiatric status and quality of life, especially in childhood. One study found that

the disorder was associated with a 70% lifetime prevalence of psychiatric disorders, including major depressive disorder,

generalized anxiety disorder and social phobia.

! Alopecia areata is usually diagnosed based on clinical manifestations. However, dermoscopy and histopathology might be helpful to confirm diagnosis or to exclude other causes of hair loss, such as scarring forms of alopecia, which are characterized by damage to the hair follicle and irreversible hair loss.



EPIDEMIOLOGY

Alopecia areata is a common cause of hair loss. Although data vary between studies, ~2% of the general population will be affected at some point during their lifetime. No differences in incidence or prevalence have been observed based on sex or ethnicity. Alopecia areata can develop at any age, but the mean age of onset is between 25 and 36 years. Early-onset (5–10 years of age) alopecia areata usually presents as a more-severe subtype.

Alopecia areata is associated with comorbidities including depression, anxiety and several autoimmune diseases, such as thyroid disease, systemic lupus erythematosus, vitiligo, psoriasis, rheumatoid arthritis and coeliac disease.

MANAGEMENT



Although several treatments can induce hair growth in alopecia areata, few have been tested in randomized clinical trials and none has been approved by regulatory agencies. Examples include local (topical and intralesional) and systemic corticosteroids, contact immunotherapy (the induction of antigenic competition via the application of unrelated antigens) and laser treatment. Not all patients should undergo active treatment; reassurance might be sufficient for patients with mild alopecia, and patients with severe, long-standing alopecia might opt for cosmetic strategies owing to the high failure rate of available treatments in these circumstances. Some patients might require psychological support.

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