

Review

Wigs and Alopecia Areata: Psychosocial Impact and Economic Considerations

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Abstract: Alopecia areata (AA) presents a challenging and unpredictable condition associated with substantial psychosocial and financial burdens. A chronic, relapsing form of non-scarring hair loss, it affects approximately 0.1–0.2% of the population worldwide with a lifetime risk of 1.0% to 2.1%. The psychosocial implications of AA, including its association with depression, anxiety, social phobia, employment disruption, and relationship challenges are well described. Significant economic costs of AA include those of healthcare, lost income, transportation, psychotherapy, and cosmetic accessories (wigs and hairpieces). However, wigs and hairpieces can contribute to enhanced self-esteem, confidence, and overall quality of life (QOL) in AA patients; these positive outcomes correlating with satisfaction in appearance. This article explores the role of wigs in addressing the aesthetic and emotional impact of AA, emphasizing their importance as potential coping mechanisms for individuals facing hair loss whilst also acknowledging possible barriers to their use. Different types of wigs and hairpieces, their respective advantages and disadvantages, and methods of attachment are thoroughly discussed, providing a comprehensive overview for both patients and healthcare professionals. Considering the economic impact of AA, this article explores the cost of wigs in Australia and available financial assistance programs. Wigs can play a pivotal role in rapidly addressing the multifaceted challenges posed by AA, offering time for psychosocial adaptation and delayed response to medical therapies. This review aims to provide valuable insights to inform evidence-based, practical, and personalized counselling of patients with AA and enable shared decision making about the utility of wigs and other cosmetic interventions for hair loss. Further research is warranted to explore differences in the optimal utilization of wigs between diverse sub-populations with AA.

Keywords: alopecia areata; wig; hairpiece; hair loss



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1. Introduction

Alopecia areata (AA) is a chronic relapsing autoimmune disease characterized by non-scarring hair loss. It affects approximately 0.1–0.2% of the population worldwide with a lifetime risk of 1.0% to 2.1% [1]. In a recent Australian study, the incidence of new-onset AA was 0.278 per 1000 person-years and point prevalence of AA was 0.13% (1.26 per 1000 persons). By age, the incidence was highest in the 19- to 34-year-old age bracket [1,2].

Paediatric studies indicate a heightened prevalence in children, ranging from 10–50%, particularly among children with a family history of AA, suggesting a genetic basis in the onset of AA [3–5]. The exact aetiology of AA remains incompletely understood, although it is thought to stem from a disruption of immune privilege within the hair follicle, autoimmune-driven destruction of hair follicles, and the increased activation of inflammatory pathways [3,6,7]. Several factors have been implicated in the pathogenesis of the disease such as genetic, environmental, and lifestyle factors [7,8].

The clinical presentation of AA ranges from well-defined focal alopecia to complete hair loss of the scalp (AA totalis) or of both scalp and body (AA universalis). Localized

AA usually spontaneously remits, but over 80% will relapse [1]. Spontaneous remission occurs in under 10% of cases with extensive AA [1]. Although Janus-kinase (JAK) inhibitors show promise in stimulating hair regrowth, no currently accessible medications have demonstrated a lasting impact on remission [1,9]. Moreover, there are no available therapies for preventing or curing AA [3]. Several treatment options targeting immune cells exist, but their effectiveness varies based on individual factors such as disease duration and stage of the disease at the start of treatment [3]. Additionally, most treatments exhibit a high relapse rate upon cessation and are associated with adverse side effects [3].

AA is characterized by its unpredictability (i.e., the number, severity, duration, and frequency of relapses), and it carries a high psychosocial and financial burden. Adverse effects on self-esteem, confidence, and mental health relate not only to hair loss, impacting appearance and self-image, but also to the uncertainty of its natural history [10–12]. While it may not have significant biological systemic consequences, living with AA is associated with higher risks of depression, anxiety, and social phobia, with substantial impact on everyday functioning and QOL [10,13]. Suicidality may also be increased [14,15].

Concealing hair loss with a wig or hair pieces has been described as a coping mechanism by addressing the perceived need for self-presentation in social interactions [16]. Their contribution to enhanced self-esteem, confidence, and QOL in patients with AA correlates with the extent of satisfaction with the appearance of the wig [10]. However, noticeability of the wig is another important factor [16]. Wearing a wig may thus reduce potential experiences of stigmatization and improve social adjustment [17,18].

2. Aetiopathogenesis of AA

The aetiopathogenesis of AA involves multiple factors, including genetics, immunological, oxidative stress, allergy, microbiota, epigenetics, and daily lifestyle factors [3,7,8]. However, genetics and immunity are thought to be the most important contributors to the disease [3]. Genetic predisposition plays a significant role, with studies showing increased risk among first-degree relatives [3,7]. The estimated lifetime risk of developing alopecia areata (AA) among siblings, parents, and offspring of AA patients was 7.1%, 7.8%, and 5.7%, respectively, compared to a general population lifetime risk of 2% [19]. The prevalence of the disease among adult patients with a family history is estimated to vary from 0% to 8.6%, while among children, it ranges between 10% and 51.6% [3,4,20]. Genome-wide association studies have identified numerous associated genomic regions and immune-related genes implicated in AA [3,7].

Immunologically, the collapse of hair follicle immune privilege in AA is crucial, leading to autoimmune responses against hair follicle autoantigens [3,6,7]. Inflammatory cytokines, particularly IFN- γ , play a central role in AA pathogenesis, contributing to hair follicle dystrophy and eventual hair loss [7]. Various immune cells, including CD8+ T cells, natural killer T cells, regulatory T cells, Th17 cells, and dendritic cells, are also implicated. Despite efforts, a specific autoantigen for AA has not been identified yet [7].

Lifestyle factors such as smoking, alcohol consumption, sleep disturbance, obesity, dietary fatty acids, and gluten intake may increase the risk of AA [8]. For example, current smokers exhibit a higher incidence of AA compared to non-smokers, with a hazard ratio of 1.88 [21]. Longer smoking duration (>10 years) and higher daily cigarette consumption (>5 cigarettes/day) are also linked to increased risk of AA (hazard ratios of 2.25 and 2.03, respectively) [21]. While the precise mechanism linking smoking to AA is not yet fully understood, cigarette smoke has been shown to elevate inflammatory cytokine production while reducing anti-inflammatory cytokine levels [8,22]. Smoking triggers Th17-mediated skin inflammation and boosts IL-17-producing cells in the skin, potentially disrupting hair follicle homeostasis and immune privilege [8,22]. Gluten intake, implicated in coeliac disease, may exacerbate inflammatory skin conditions like atopic dermatitis by enhancing Th1, Th2, and Th17-mediated immune pathways [23]. Increased skin and systemic inflammation may exacerbate hair follicle inflammation implicated in the pathogenesis of AA [8]. Oxidative stress, allergy, gut microbiota, and epigenetic modifications have also been described

in the literature as influencing AA development [7]. Understanding these multifactorial influences on AA may aid in the development of effective therapeutic strategies.

3. Subtypes of AA

AA typically manifests as a sudden onset of well-defined patches of hair loss on the scalp [24]. Generally, patients are asymptomatic, although some may experience sensations such as tingling, itching, or dysesthesia before hair loss occurs [25]. A positive pull test, particularly at the periphery of the patch, may be observed in individuals with active disease. In severe cases, AA can progress to involve all scalp hair (AT) or all scalp and body hair (AU). Men may present initially with beard involvement rather than scalp AA (50.5% vs. 39.3%) [25].

There are various subtypes of AA, each with characteristic presentations, including alopecia ophioides (AO), alopecia areata, sudden graying type, and diffuse forms [25]. Patients with AO typically display band-like hair loss, commonly at the occipital hairline extending to the temples and infrequently at the frontal hairline, which may be mistaken for frontal fibrosing alopecia [25]. The alopecia areata subtype of AA presents with central hair loss affecting the vertex of the scalp, sparing the marginal scalp hairs, resembling androgenetic alopecia [25,26]. The subtype of AA termed “sudden graying” or “white overnight” results in the loss of pigmented hairs [25].

Acute diffuse and total alopecia is a recently described subtype characterized by sudden, diffuse hair loss, primarily in women, lasting approximately three months, typically followed by rapid hair regrowth, although relapse is possible [25,27]. AA incognita presents with acute diffuse shedding of telogen hairs in areas commonly affected by androgenetic alopecia and can be mistaken for telogen effluvium, often necessitating a biopsy to confirm the diagnosis [25,28]. This subtype also predominantly affects women [28].

A recent systematic review and meta-analysis of 94 studies found that the prevalence of AT, AO, and AU were 0.08% (0.04–0.13, N = 1,088,149), 0.02% (0.00–0.06, N = 1,075,203), and 0.03% (0.01–0.06, N = 1,085,444), respectively. AA prevalence (95% confidence interval) is increasing with time (<2000: 1.02% [0.85–1.22]; 2000–2009: 1.76% [1.51–2.03]; >2009: 3.22% [2.59–3.92]; $p < 0.0001$) and significantly differs by region [5].

Several factors influence the prognosis of AA, including the subtype, age of onset, family history, and the extent and duration of hair loss [29]. On average, 5% of cases initially presenting as patchy AA progress to either AT or AU [25]. Extensive AA involvement typically indicates a more severe prognosis [30]. Research by Tosti et al. demonstrated that among adults with mild AA (<25% hair loss), 67% experienced complete regrowth, whereas individuals with severe AT or AU variants typically exhibited disease stability or deterioration over time (average follow-up time: 17.74 years) [30]. A younger age at onset is generally considered a less favourable prognostic factor [5,25]. Additionally, the AO may have a poorer prognosis and could be less responsive to treatment, while the acute diffuse and total alopecia subtype often carries a more favourable prognosis [25,27].

4. Burden of AA

AA carries a significant emotional burden, often contributing to poor self-image and perceived social stigmatisation [31–33]. In a scoping review, Muntyanu et al. identified impaired QOL in over 75% of patients, with embarrassment, social functioning, and shopping and/or housework being the most affected domains [31]. Children and adolescents with AA similarly experience increased embarrassment and self-consciousness [34]. Psychosocial complications include bullying and limiting participation in school or extra-curricular activities [34].

Cross-sectional studies of adult AA patients show a prevalence of anxiety and/or depressive symptoms ranging from 30% to 68% across all age brackets [31]. Additionally, higher rates of attention-deficit disorders, adjustment disorders, obsessive compulsive disorders, and suicide have also been observed [1,9,14]. Resultant adverse social outcomes include negative effects on social engagement, relationship formation, daily activities, and

work productivity [31,35]. Compared to healthy controls, individuals with AA demonstrate significantly elevated rates of work absenteeism and unemployment [31].

Many individuals with AA express dissatisfaction with conventional medical treatments, often turning to alternative therapies, wigs, and cosmetic camouflage. The pursuit of these can lead to a high financial burden, adding to other existing expenses such as medical and counselling costs, health insurance, lost income, and transportation costs [36].

5. Personal Financial Costs of AA

In a recent cross-sectional online survey of 216 persons from the US National Alopecia Areata Foundation (NAAF) patient database, 85% found coping with AA to be a daily challenge, 75% persistently concealed their hair loss (averaging 10.3 h per week), 62% reported AA altering major life decisions (e.g., relationships, education, or career), and 47% reported anxiety and/or depression [3]. Mental health issues, time spent in camouflage of alopecia, and embarrassment affected life choices. Treatment discontinuation was common due to ineffectiveness, adverse effects, and cost [9]. Mean expenses, including buying hair prostheses and psychotherapy was 2000 USD/y [9]. Of note, most of the patients who completed this survey were female (83%), aged ≥ 45 years (59%), and white (78%) and thus may not reflect the general population [9].

A second survey assessing the financial burden for 675 patients from the NAAF patient database showed that 60.1% of individuals documented personal expenditures in at least 4 expense categories, with the highest percentage of participants allocating funds towards hair appointments ($n = 552$ [81.8%]) and vitamins and/or supplements ($n = 457$ [67.7%]) [36]. The annual average spending was greatest for cosmetic products or headwear such as hats, wigs, and/or makeup (on average USD 450) [36].

A third cross-sectional study utilizing a standardized online survey was conducted in Germany, Austria, and Switzerland [37]. It was completed by 346 AA patients (95.1% women, mean age 38.5 ± 11.6 years) and showed that average extra spending on daily essentials was EUR 1248 per person annually. This was considerably influenced by the duration and severity of the illness, as well as their healthcare provider [37].

Hair replacement products, such as wigs and hairpieces, and cosmetics accounted for the highest monthly costs, with women having higher expenditures. Most participants ($n = 255$, 73.7%) were not currently receiving treatment, primarily due to its inefficacy, adverse effects, costs, or acceptance of the disease [37].

6. The Role of Wigs and Hair Pieces in AA

Wigs and other hair prosthesis provide a non-invasive and effective way to conceal hair loss, helping individuals with AA regain confidence and feel more comfortable with their appearance. They can also be used in conjunction with medical therapies aimed at treating AA. Quantitative research has shown the benefits of wigs as an effective coping mechanism for managing hair loss, especially given limitations in the efficacy of currently available medical treatments [10,38]. A study of 22 people with AA in Scotland found that the most important factor for people with AA who wear wigs is that the wig should not only resemble natural hair but should also be inconspicuous as a wig [16]. Daily efforts invested into hiding hair loss and managing the noticeability of wigs can, however, impose personal and interpersonal costs for individuals with AA. Referring to a wig as a straightforward or simple solution to “camouflage hair loss” overlooks many intricacies. Wearers need to decide whom to inform and how to alter wig styles or colors without attracting attention. Disguising hair loss is not the final destination; instead, it signifies the beginning for individuals navigating life without hair [16].

A Japanese study of 49 female patients with AA (median age 36) has shown the importance of patient satisfaction with wigs in determining their effect on psychosocial outcomes. It used the Psychosocial Impact of Assistive Device Scale (PIADS), a self-rating questionnaire that evaluates the usefulness of assistive devices for QOL improvement, a visual analogue scale (VAS) to measure the degree of satisfaction with their own look with

the wig, and the SALT score to measure AA severity [10]. Wigs improved quality-of-life indicators of the PIADS, including competence, adaptability, and self-esteem. Additionally, a positive correlation was observed between the PIADS and VAS score, indicating that cosmetic satisfaction with wigs or hairpieces plays a vital role in improving the psychosocial QOL of AA patients [10].

Benefits and disadvantages of wigs were studied in 40 patients (11 men, 29 women) with severe AA (SALT score $\geq 50\%$) in South Korea. Wearing a wig for a minimum of four weeks led to a significant increase in PIADS scores, starting from a baseline score of zero, with notable improvements observed across all three components: competence, adaptability, and self-esteem [17]. The most common reported negative effect of wearing a wig was the high cost (23/40, 57.5%), followed by scalp issues due to occlusion (16/40, 40.0%), unnatural appearance of the wig (14/40, 35.0%), discomfort while wearing wigs (12/40, 30.0%), and frequent replacement cycles (7/40, 17.5%) [17]. The findings of this study suggest that wearing a wig may alleviate symptoms of social anxiety, depression, and frustration in AA patients. Of note, the study found that the characteristics of a wig had no significant influence on outcome measures; wearing a wig has a psychosocially beneficial effect on patients with severe AA regardless of its type and cost [17].

A recent UK-based study sought to examine the psychiatric comorbidities, such as social anxiety, anxiety, and depression associated with AA and effects of wig use [13]. A sum of 46% of participations (total = 388) reported that wig-wearing had a positive effect on their QOL. Negative experiences with wig usage were linked to fears of the wig being noticeable, consistent with previous studies [13]. These findings show the need for healthcare professionals treating individuals with AA to be well-versed in the nuances of wig use.

7. Barriers to and Evolution of Wig Use

The potential for wigs to conceal hair loss and reduce experiences of social stigmatization and enhance self-confidence and quality of life is well described [13,39]. However, use of wigs can also bring concerns about their visibility and stability, heightened anxiety, stress, feelings of inauthenticity, and potential avoidance of social activities involving movement [39,40]. A study found that people with AA wearing wigs were less active due to fears of accidental wig removal and wig noticeability [40]. Physical activity avoidance was prevalent. Participants chose to exercise in private or in settings with less visibility to reduce risk of accidental disclosure of their condition [40]. Extreme weather conditions further reduced physical activity, giving discomfort in hot weather and fear of wig displacement with windy conditions. Water sports were often avoided due to the inconvenience of removing wigs. Despite the positive impact of wigs on physical activity participation, the effort involved in managing their noticeability emerged as a significant burden and potential barrier for individuals with AA [40].

Participants in this study grappled with self-consciousness, embarrassment, and anxiety, negatively impacting mental health [40]. Notably, they not only reported concealing baldness from acquaintances, but some avoided being bald at home due to perceived unattractiveness. The use of wigs, hats, caps, and makeup also evoked feelings of inauthenticity, shame, and anxiety. Embrace of and satisfaction with wigs as therapy varies and reasons for such individual differences may be complex. There remains a relative lack of research on the effects of cosmetic and other camouflage techniques on appearance-related and other psychological consequences [41]. In addition to the practical considerations of wig use, personal and social determinants of self-perception, self-identity, and ease of adjustment following visible changes in self-representation all require better understanding to enable personalized counselling.

Evolution in contemporary hair styles further complicates this dynamic landscape of considerations. Dermatologists must stay attuned to current trends as societal norms are changing [42]. While short hair has traditionally been the standard for men, longer hair is gaining acceptance in some cultures. Shaved heads, wig use, and extensions once deemed

unconventional, are now popular and embraced by influential celebrities like Rihanna and Lady Gaga, normalizing the use of wigs and extensions. Consequently, wig use has seen a notable upturn in recent years also in those without hair loss [42].

8. Types of Wigs, Hairpieces, and Accessories

Addressing hair loss and integrating wig usage into a patient's life requires more than just suggesting a visit to a wig shop. The intricate process of selecting the right wig, its maintenance, and effective utilization require exploration by the patient. Coordinated care involving various professionals is crucial. Initial reassurance during a dermatology visit is essential, but it marks just the beginning of a comprehensive treatment plan [43]. A multidisciplinary approach involving the primary doctor, dermatologist, and a dedicated wig specialist or stylist is necessary to support the patient throughout their hair-concealment journey.

The types of wigs and hairpieces can be categorized based on the type of hair fibre, foundation, prosthesis, and method of attachment [18,44]. These determine the look, durability, and cost. The types of wig hair fibres, hairpieces, wig foundations, hair prosthesis, and methods of attachment available are summarised in Tables 1 and 2.

Seeking consultation from a professional wig stylist is crucial. The intricate processes involving chemicals, glues, and materials require expertise to ensure safety and prevent potential hair and scalp damage.

Table 1. Type of hair fibre and wig foundations.

Type of Hair Fibre	Pros	Cons
Human hair fibre wigs [18,44]	<ul style="list-style-type: none"> • Appear and feel more natural • Can be colored, permed and styled • Can be used for up to 12 months • Can withstand elevated temperatures without damage • Can be purchased without a specific style 	<ul style="list-style-type: none"> • Higher cost • Fragility • Increased maintenance • More time consuming to manage—washing, drying, and styling • May lose or change color
Synthetic hair fibre wigs	<ul style="list-style-type: none"> • Increased range of colors and textures • Available pre-styled • Holds shape after washing • Lower cost • Easier to care for • Dries faster • Does not fade in the sun • More readily available 	<ul style="list-style-type: none"> • Prone to heat damage • Fixed style and color • Does not last as long as a human hair wig • May have a false shine • Requires special shampoo and conditioner
Blended wigs	<ul style="list-style-type: none"> • Has some of the advantages of human and synthetic hair fibre wigs 	<ul style="list-style-type: none"> • Maintenance and repair may be more difficult
Type of wig foundation [18] Also known as wig “caps”, they act as the foundation where the hair strands are affixed.	<ul style="list-style-type: none"> • Cover the entire head or specific alopecic areas • Essential in determining <ul style="list-style-type: none"> • Hair density • Fixation possibilities • Natural appearance 	<p>5 main types of wig foundations</p> <ol style="list-style-type: none"> (1) Skin Wig (2) Mixed (3) Net (4) Wefted (5) Top pieces

Table 2. Types of hair prosthesis and methods of attachment.

Types of Hair Prosthesis	Hair System (Full Cap)	Partial Hair Systems (Hairpieces):	Hair Integration System:	Hair Extensions:
<ul style="list-style-type: none"> • Hair system • Partial hair systems • Hair integration system • Hair extensions 	<ul style="list-style-type: none"> • Custom-made • Made from real hair • Natural and comfortable • Covers the entire scalp • Nearly impossible to detect 	<ul style="list-style-type: none"> • Various types of hairpieces • Designed to cover localized areas of hair loss <ul style="list-style-type: none"> ○ Demiwig ○ Toupee ○ Lace front 	<ul style="list-style-type: none"> • Suitable for hair thinning, but not severe hair loss • Combines individual's own hair with synthetic or natural human hair fibres • Adds more density to bald areas 	<ul style="list-style-type: none"> • Mixed strips of hair attached to the patient's own hair • Add volume or length • Can be clipped, glued, or sewn into existing hair
Methods of attachment	Removable	Fixed	Vacuum or suction base	
<ul style="list-style-type: none"> • Removable • Fixed • Vacuum or suction base <ul style="list-style-type: none"> ○ Hard vs soft 	<ul style="list-style-type: none"> • Clips; <ul style="list-style-type: none"> ○ Can be attached and removed temporarily ○ Beneficial for managing hair loss treatment while also utilizing wigs ○ Necessitates some natural hair for attachment 	<ul style="list-style-type: none"> • Bonds or tapes; <ul style="list-style-type: none"> ○ For prolonged wear, bonds or adhesive tapes ○ Can be worn continuously for e.g., playing sports and sleeping ○ May last up to 30 days 	<ul style="list-style-type: none"> ○ Highest cost ○ Custom plaster cast of the scalp ○ Silicone or polyurethane vacuum base ○ Snugly fitting ○ Does not necessitate extra adhesive for securing ○ Comfortable ○ Enables the wearer to be more active ○ "Hard" and "soft" vacuums available [18] 	

Hair Building Fibres

An alternative treatment to conceal hair thinning includes using artificial hair building fibres. One available brand, Toppik, is made from keratin and has a strong natural static charge that creates a magnetic effect, tightly binding to human hair. It can give the appearance of thicker and fuller-looking hair. Newer hair building fibre technology has become available in recent years, made of cotton and is vegan friendly. These consist of tiny cotton fibres which are electrostatic and when applied to dry hair it makes hair appear thicker. Hair building fibres do not prevent the regrowth of hair.

9. Cost of Wigs in Australia

The price of wigs can vary widely from AUD 80 to thousands of dollars [45]. The lifespan of a wig can range from 5 months to 5 years, depending on the durability of the wig and the care received. Nevertheless, replacement becomes necessary over time.

The expenses associated with wigs create a significant barrier for many in the AA community, preventing access to this potentially transformative medical device. Fortunately, there is financial assistance available in Australia. There are government-sponsored programs in the form of rebates and subsidies for adults requiring a wig. Individuals with a wig for a medical or surgical condition are eligible for reimbursement for qualifying medical costs exceeding AUD 1000 [45]. There are also several state subsidies available in NSW, Victoria, Tasmania, and South Australia. Each of these programs has its own eligibility requirements, often depending on the type of desired wig and an individual's financial situation. For example, Victoria provides subsidized aids and equipment through the State-Wide Equipment Program (SWEP). Other states (WA, QLD, NT, and ACT) do not provide any such service. If a patient has a health fund provider, they may be eligible for assistance through extras cover.

Alopecia can often present in childhood, an essential phase of self-discovery and social interaction, when it may evoke uncertainty, apprehension, and seclusion from peers. Thus, ensuring children with AA have access to wigs is critical for their emotional well-being. Several grant programs exist for children with AA. The Australian Alopecia Areata Foundation (AAAF) has a grant program for children under the age of 17, which provides information, service, and support to children who wish to wear a wig and it offers a range of synthetic wigs for a low cost [44,45].

10. Cosmetic Interventions for Eyebrow and Eyelash Loss in AA

AA predominantly affects the scalp; however, it can also affect any hair-bearing area of the body, including eyelashes and eyebrows [6]. Both eyebrows and eyelashes play crucial roles functionally and socially, and experiencing hair loss in these areas can have a significant negative impact on patients' self-esteem [46]. There are limited targeted treatment options for eyebrow and eyelash alopecia [47]. Standard treatments used for the treatment of scalp AA, where an autoimmune cause is implicated, may also be used to treat eyebrow loss, including topical and intralesional corticosteroids, topical minoxidil 5%, and JAK inhibitors [47].

Cosmetic interventions to conceal eyebrow alopecia include microblading, microshading, and tattooing. Microblading involves a semi-permanent tattooing technique that employs fine needles to deposit pigment superficially in the epidermis and papillary dermis, creating the appearance of natural eyebrow hairs [48]. Similarly, microshading utilizes a comparable method by depositing pigmented dots throughout the eyebrow, mimicking the appearance of eyebrow makeup [48]. Both methods yield fuller-looking eyebrows for a duration of 12 to 18 months [48]. However, because the superficially deposited pigment gradually fades over time, repeat procedures are necessary at regular intervals [48].

Eyebrow tattooing offers longer-lasting results [47,49]. The process involves depositing tattoo ink into the deeper reticular layer of the dermis [49]. However, there are risks and complications associated with cosmetic eyebrow tattooing, including allergic reactions, infections, and the formation of granulomas and keloid scarring [46,47,49]. Additionally,

spreading and fading of the pigment, as well as dissatisfaction with the color or shape are not uncommon [49]. While permanent tattooing serves as an option for concealing eyebrow loss, patients should be thoroughly informed about the associated risks before undergoing the procedure [47]. Follicular unit transplantation is a commonly used and successful procedure for eyebrow transplantation and is often utilized for addressing eyelash loss. However, when the cause of eyebrow and eyelash loss is AA, its suitability diminishes due to its tendency for disease recurrence and reactivation, as well as inadequate hair growth [46].

Successful reported treatments for eyelash alopecia include baricitinib 4 mg/day [50], bimatoprost and latanoprost (prostaglandin F_{2α} analogues) topical solutions once daily [46,51,52] and topical tofacitinib (JAK-inhibitor) 0.005% eye drops once daily [53]. A non-invasive cosmetic intervention for eyelash alopecia is false eyelashes (individual, clustered, or strip human hair) or synthetic hair eyelashes. Undesirable adverse effects include allergic reactions, eye infections, difficult application, and removal and damage to natural lashes [46]. While false eyelashes can provide a temporary cosmetic enhancement, only high-quality products should be worn for a short time period and removed with care. Due to the adverse effects associated with eyebrow and eyelash cosmetic interventions, they are generally considered unsuitable for use in children.

11. Conclusions

AA is a chronic relapsing autoimmune condition that causes hair loss, most commonly affecting the scalp but it can extend to other parts of the body. The exact cause of AA is not fully understood, but it is believed to involve a combination of genetic, environmental, and immunological factors. AA can affect people of all ages and genders, and while it is not a life-threatening condition, it can have significant emotional and psychological impacts due to changes in appearance. Wigs not only exert a positive cosmetic effect, but also can act as an important and valuable coping strategy to enhance psychosocial well-being, self-confidence, and social engagement in patients with AA [17]. However, they potentially add to the financial strain imposed by AA, which surpasses that of many chronic diseases [37]. Furthermore, although visible disfigurement from AA can lead to distress and activity avoidance, so too can noticeability and instability in wig-wearing [40]. The majority of published studies on wig use in AA predominantly involve female, Caucasian participants. Further research is essential to investigate the experiences of men and culturally diverse groups with AA [10,13,17] and, importantly, potential psychosocial barriers to both adaptation and wig use in AA. This review article provides physicians, collaborating with prosthetic professionals where necessary, with valuable insights into the diverse world of wigs, hairpieces, eyebrow and eyelash cosmetic interventions, to facilitate personalized and nuanced advice when counselling patients with AA [18].

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References

1. Harries, M.; Macbeth, A.E.; Holmes, S.; Thompson, A.R.; Chiu, W.S.; Gallardo, W.R.; Messenger, A.G.; Tziotzios, C.; de Lusignan, S. Epidemiology, management and the associated burden of mental health illness, atopic and autoimmune conditions, and common infections in alopecia areata: Protocol for an observational study series. *BMJ Open* **2021**, *11*, e045718. [[CrossRef](#)] [[PubMed](#)]
2. Sinclair, R.; Eisman, S.; Song, W.; Heung, B.; Surian, C.; Lee, C.M.Y.; Witcombe, D. Incidence and prevalence of alopecia areata in the Australian primary care setting: A retrospective analysis of electronic health record data. *Australas. J. Dermatol.* **2023**, *64*, 330–338. [[CrossRef](#)] [[PubMed](#)]
3. Simakou, T.; Butcher, J.P.; Reid, S.; Henriquez, F.L. Alopecia areata: A multifactorial autoimmune condition. *J. Autoimmun.* **2018**, *98*, 74–85. [[CrossRef](#)] [[PubMed](#)]
4. Xiao, F.; Yang, S.; Liu, J.; He, P.; Yang, J.; Cui, Y.; Yan, K.; Gao, M.; Liang, Y.; Zhang, X. The epidemiology of childhood alopecia areata in China: A study of 226 patients. *Pediatr. Dermatol.* **2006**, *23*, 13–18. [[CrossRef](#)] [[PubMed](#)]
5. Lee, H.H.; Gwillim, E.; Patel, K.R.; Hua, T.; Rastogi, S.; Ibler, E.; Silverberg, J.I. Epidemiology of alopecia areata, ophiasis, totalis, and universalis: A systematic review and meta-analysis. *J. Am. Acad. Dermatol.* **2019**, *82*, 675–682. [[CrossRef](#)] [[PubMed](#)]
6. Sterkens, A.; Lambert, J.; Bervoets, A. Alopecia areata: A review on diagnosis, immunological etiopathogenesis and treatment options. *Clin. Exp. Med.* **2021**, *21*, 215–230. [[CrossRef](#)]
7. Zhou, C.; Li, X.; Wang, C.; Zhang, J. Alopecia Areata: An Update on Etiopathogenesis, Diagnosis, and Management. *Clin. Rev. Allergy Immunol.* **2021**, *61*, 403–423. [[CrossRef](#)] [[PubMed](#)]
8. Minokawa, Y.; Sawada, Y.; Nakamura, M. Lifestyle Factors Involved in the Pathogenesis of Alopecia Areata. *Int. J. Mol. Sci.* **2022**, *23*, 1038. [[CrossRef](#)] [[PubMed](#)]
9. Mesinkovska, N.; King, B.; Mirmirani, P.; Ko, J.; Cassella, J. Burden of Illness in Alopecia Areata: A Cross-Sectional Online Survey Study. *J. Investig. Dermatol. Symp. Proc.* **2020**, *20*, S62–S68. [[CrossRef](#)]
10. Inui, S.; Inoue, T.; Itami, S. Psychosocial impact of wigs or hairpieces on perceived quality of life level in female patients with alopecia areata. *J. Dermatol.* **2012**, *40*, 225–226. [[CrossRef](#)]
11. Toussi, A.; Barton, V.R.; Le, S.T.; Agbai, O.N.; Kiuru, M. Psychosocial and psychiatric comorbidities and health-related quality of life in alopecia areata: A systematic review. *J. Am. Acad. Dermatol.* **2020**, *85*, 162–175. [[CrossRef](#)]
12. Macbeth, A.E.; Holmes, S.; Harries, M.; Chiu, W.S.; Tziotzios, C.; de Lusignan, S.; Messenger, A.G.; Thompson, A.R. The associated burden of mental health conditions in alopecia areata: A population-based study in UK primary care. *Br. J. Dermatol.* **2022**, *187*, 73–81. [[CrossRef](#)]
13. Montgomery, K.; White, C.; Thompson, A. A mixed methods survey of social anxiety, anxiety, depression and wig use in alopecia. *BMJ Open* **2017**, *7*, e015468. [[CrossRef](#)]
14. Wang, L.-H.; Ma, S.-H.; Tai, Y.-H.; Dai, Y.-X.; Chang, Y.-T.; Chen, T.-J.; Chen, M.-H. Increased Risk of Suicide Attempt in Patients with Alopecia Areata: A Nationwide Population-Based Cohort Study. *Dermatology* **2023**, *239*, 712–719. [[CrossRef](#)]
15. Vélez-Muñoz, R.d.C.; Peralta-Pedrero, M.L.; Cruz, F.J.-S.; Morales-Sánchez, M.A. Psychological Profile and Quality of Life of Patients with Alopecia Areata. *Ski. Appendage Disord.* **2019**, *5*, 293–298. [[CrossRef](#)] [[PubMed](#)]
16. Wiggins, S.; Moore-Millar, K.; Thomson, A. Can you pull it off? Appearance modifying behaviours adopted by wig users with alopecia in social interactions. *Body Image* **2014**, *11*, 156–166. [[CrossRef](#)] [[PubMed](#)]
17. Park, J.; Kim, D.-W.; Park, S.-K.; Yun, S.-K.; Kim, H.-U. Role of Hair Protheses (Wigs) in Patients with Severe Alopecia Areata. *Ann. Dermatol.* **2018**, *30*, 505–507. [[CrossRef](#)]
18. Weffort, F.; Sales Martins, S.; Plata, G.T.; Duraes, C.T.; Melo, D.F. Do you know how to recommend a wig to your patient? *J. Cosmet. Dermatol.* **2021**, *20*, 724–728. [[CrossRef](#)]
19. Blaumeiser, B.; van der Goot, I.; Fimmers, R.; Hanneken, S.; Ritzmann, S.; Seymons, K.; Betz, R.C.; Ruzicka, T.; Wienker, T.F.; De Weert, J.; et al. Familial aggregation of alopecia areata. *J. Am. Acad. Dermatol.* **2006**, *54*, 627–632. [[CrossRef](#)] [[PubMed](#)]
20. Villasante Fricke, A.C.; Miteva, M. Epidemiology and burden of alopecia areata: A systematic review. *Clin. Cosmet. Investig. Dermatol.* **2015**, *8*, 397–403.
21. Dai, Y.-X.; Yeh, F.-Y.; Shen, Y.-J.; Tai, Y.-H.; Chou, Y.-J.; Chang, Y.-T.; Chen, T.-J.; Li, C.-P.; Wu, C.-Y. Cigarette Smoking, Alcohol Consumption, and Risk of Alopecia Areata: A Population-Based Cohort Study in Taiwan. *Am. J. Clin. Dermatol.* **2020**, *21*, 901–911. [[CrossRef](#)] [[PubMed](#)]
22. Melnik, B.; John, S.; Chen, W.; Plewig, G. T helper 17 cell/regulatory T-cell imbalance in hidradenitis suppurativa/acne inversa: The link to hair follicle dissection, obesity, smoking and autoimmune comorbidities. *Br. J. Dermatol.* **2018**, *179*, 260–272. [[CrossRef](#)]
23. Drucker, A.M.; Qureshi, A.A.; Thompson, J.M.; Li, T.; Cho, E. Gluten intake and risk of psoriasis, psoriatic arthritis, and atopic dermatitis among United States women. *J. Am. Acad. Dermatol.* **2019**, *82*, 661–665. [[CrossRef](#)]
24. Alhanshali, L.; Buontempo, M.G.; Sicco, K.I.L.; Shapiro, J. Alopecia Areata: Burden of Disease, Approach to Treatment, and Current Unmet Needs. *Clin. Cosmet. Investig. Dermatol.* **2023**, *16*, 803–820. [[CrossRef](#)]
25. Strazzulla, L.C.; Wang, E.H.C.; Avila, L.; Lo Sicco, K.; Brinster, N.; Christiano, A.M.; Shapiro, J. Alopecia areata: Disease characteristics, clinical evaluation, and new perspectives on pathogenesis. *J. Am. Acad. Dermatol.* **2018**, *78*, 1–12. [[CrossRef](#)] [[PubMed](#)]
26. Munoz, M.A.; Camacho, F.M. Sisaipho: A New Form of Presentation of Alopecia Areata. *Arch. Dermatol.* **1996**, *132*, 1255–1256. [[CrossRef](#)]

27. Lew, B.-L.; Shin, M.-K.; Sim, W.-Y. Acute diffuse and total alopecia: A new subtype of alopecia areata with a favorable prognosis. *J. Am. Acad. Dermatol.* **2009**, *60*, 85–93. [[CrossRef](#)] [[PubMed](#)]
28. Tosti, A.; Whiting, D.; Iorizzo, M.; Pazzaglia, M.; Misciali, C.; Vincenzi, C.; Micali, G. The role of scalp dermoscopy in the diagnosis of alopecia areata incognita. *J. Am. Acad. Dermatol.* **2008**, *59*, 64–67. [[CrossRef](#)]
29. Hull, S.M.; Wood, M.; Hutchinson, P.; Sladden, M.; Messenger, A. Guidelines for the management of alopecia areata. *Br. J. Dermatol.* **2003**, *149*, 692–699. [[CrossRef](#)]
30. Tosti, A.; Bellavista, S.; Iorizzo, M. Alopecia areata: A long term follow-up study of 191 patients. *J. Am. Acad. Dermatol.* **2006**, *55*, 438–441. [[CrossRef](#)]
31. Muntyanu, A.; Gabrielli, S.; Donovan, J.; Gooderham, M.; Guenther, L.; Hanna, S.; Lynde, C.; Prajapati, V.H.; Wiseman, M.; Netchiporouk, E. The burden of alopecia areata: A scoping review focusing on quality of life, mental health and work productivity. *J. Eur. Acad. Dermatol. Venereol.* **2023**, *37*, 1490–1520. [[CrossRef](#)]
32. Creadore, A.; Manjaly, P.; Li, S.J.; Tkachenko, E.; Zhou, G.; Joyce, C.; Huang, K.P.; Mostaghimi, A. Evaluation of Stigma Toward Individuals with Alopecia. *JAMA Dermatol.* **2021**, *157*, 392–398. [[CrossRef](#)] [[PubMed](#)]
33. Goh, C. Stigmatizing Alopecia—Perspectives of a Bald Dermatologist. *JAMA Dermatol.* **2021**, *157*, 383–384. [[CrossRef](#)] [[PubMed](#)]
34. Prendke, M.; Kanti-Schmidt, V.; Wilborn, D.; Hillmann, K.; Singh, R.; Vogt, A.; Kottner, J.; Blume-Peytavi, U. Quality of life in children and adolescents with alopecia areata—A systematic review. *J. Eur. Acad. Dermatol. Venereol.* **2023**, *37*, 1521–1534. [[CrossRef](#)] [[PubMed](#)]
35. Gandhi, K.; Shy, M.E.; Ray, M.; Fridman, M.; Vaghela, S.; Mostaghimi, A. The Association of Alopecia Areata-Related Emotional Symptoms with Work Productivity and Daily Activity Among Patients with Alopecia Areata. *Dermatol. Ther.* **2022**, *13*, 285–298. [[CrossRef](#)] [[PubMed](#)]
36. Li, S.J.; Mostaghimi, A.; Tkachenko, E.; Huang, K.P. Association of Out-of-Pocket Health Care Costs and Financial Burden for Patients with Alopecia Areata. *JAMA Dermatol.* **2019**, *155*, 493–494. [[CrossRef](#)] [[PubMed](#)]
37. Kullab, J.; Schielein, M.C.; Stuhlmann, C.F.; Tizek, L.; Wecker, H.; Kain, A.; Biedermann, T.; Zink, A. Out-of-Pocket Costs in Alopecia Areata: A Cross-Sectional Study in German-speaking Countries. *Acta Derm.-Venereol.* **2023**, *103*, adv00838. [[CrossRef](#)]
38. Endo, Y.; Miyachi, Y.; Arakawa, A. Development of a disease-specific instrument to measure quality of life in patients with alopecia areata. *Eur. J. Dermatol.* **2012**, *22*, 531–536. [[CrossRef](#)]
39. Davey, L.; Clarke, V.; Jenkinson, E. Living with alopecia areata: An online qualitative survey study. *Br. J. Dermatol.* **2018**, *180*, 1377–1389. [[CrossRef](#)]
40. Rajoo, Y.; Wong, J.; Raj, I.S.; Kennedy, G.A. Perceived barriers and enablers to physical activity participation in people with Alopecia Areata: A constructivist grounded theory study. *BMC Psychol.* **2020**, *8*, 132. [[CrossRef](#)]
41. Gholizadeh, S.; Rice, D.B.; Carboni-Jiménez, A.; Kwakkenbos, L.; Boruff, J.; Krishnan, A.; Malcarne, V.L.; Thombs, B.D. Effects of cosmetic and other camouflage interventions on appearance-related and psychological outcomes among adults with visible differences in appearance: A systematic review. *BMJ Open* **2021**, *11*, e046634. [[CrossRef](#)] [[PubMed](#)]
42. Subash, J.; McMichael, A. Available online: <https://www.hmpglobelearningnetwork.com/site/thederm/article/talking-patients-about-wig-use-alopecia> (accessed on 13 January 2024).
43. Vandegrift, K.V. The development of an oncology alopecia wig program. *J. Infus. Nurs.* **1994**, *17*, 78–82.
44. Wigs. Available online: <https://aaaf.org.au/wigs/> (accessed on 1 January 2024).
45. Where to Find Financial Support for Wigs in Australia. 2021. Available online: <https://lovealopecia.wordpress.com/2021/02/24/where-to-find-financial-support-for-wigs-in-australia/> (accessed on 4 January 2024).
46. Mumford, B.P.; Eisman, S.; Yip, L. Acquired causes of eyebrow and eyelash loss: A review and approach to diagnosis and treatment. *Australas. J. Dermatol.* **2022**, *64*, 28–40. [[CrossRef](#)] [[PubMed](#)]
47. Nguyen, B.; Hu, J.K.; Tosti, A. Eyebrow and Eyelash Alopecia: A Clinical Review. *Am. J. Clin. Dermatol.* **2022**, *24*, 55–67. [[CrossRef](#)] [[PubMed](#)]
48. Marwah, M.; Kerure, A.; Marwah, G. Microblading and the science behind it. *Indian Dermatol. Online J.* **2021**, *12*, 6–11. [[CrossRef](#)] [[PubMed](#)]
49. De Cuyper, C. Complications of cosmetic tattoos. *Curr. Probl. Dermatol.* **2015**, *48*, 61–70. [[PubMed](#)]
50. King, B.; Ohyama, M.; Kwon, O.; Zlotogorski, A.; Ko, J.; Mesinkovska, N.A.; Hordinsky, M.; Dutronc, Y.; Wu, W.-S.; McCollam, J.; et al. Two Phase 3 Trials of Baricitinib for Alopecia Areata. *N. Engl. J. Med.* **2022**, *386*, 1687–1699. [[CrossRef](#)] [[PubMed](#)]
51. Jha, A.; Sarkar, R.; Udayan, U.; Roy, P.; Jha, A.; Chaudhary, R.K.P. Bimatoprost in dermatology. *Indian Dermatol. Online J.* **2018**, *9*, 224–228. [[CrossRef](#)]
52. Vila, T.O.; Martinez, F.M.C. Bimatoprost in the treatment of eyelash universalis alopecia areata. *Int. J. Trichol.* **2010**, *2*, 86–88. [[CrossRef](#)]
53. Kerkemeyer, K.; Sinclair, R.; Bhoyrul, B. Topical tofacitinib for the treatment of alopecia areata affecting facial hair. *Br. J. Dermatol.* **2021**, *185*, 677–679. [[CrossRef](#)]

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