



Manual resources applied to hair therapy: treatments for male androgenetic alopecia

Manual techniques applied to hair therapy: treatments for male androgenetic alopecia

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SUMMARY

Androgenetic alopecia (AGA) is a common condition in men, characterized by follicular miniaturization induced by dihydrotestosterone (DHT), resulting in progressive hair loss. In addition to the aesthetic impacts, AGA compromises the psychosocial well-being of individuals. The methodology adopted was a bibliographic review, with searches carried out in the Google Scholar, SciELO, PubMed and LILACS databases (2014-2025), using the descriptors: "male androgenetic alopecia", "manual techniques" and "massage for androgenetic alopecia". Studies that addressed protocols of manual resources appropriate for Aesthetics were included. The results indicate massage techniques as a promising complementary technique, as they improve blood circulation, decrease anxiety and stress, improve sleep quality and increase follicle nutrition. In addition to traditional treatments, with medications, therapies such as microneedling, low-intensity laser and carboxytherapy have shown efficacy in stimulating hair growth. The comparative analysis suggests that the combination of different modalities can enhance the results, although the lack of standardization of protocols represents a limitation. It is concluded that AGA requires a multifactorial approach, integrating conventional treatments with complementary therapies. This study addressed, through a bibliographic analysis, the use of massage techniques in hair care and their possible application as a complementary therapy in the treatment of male androgenetic alopecia.

Keywords: 1. Androgenetic Alopecia, 2. Hair Loss, 3. Therapeutic Massage, 4. Hair Treatment.

ABSTRACT

Androgenetic alopecia (AGA) is a common condition in men, characterized by follicular miniaturization induced by dihydrotestosterone (DHT), resulting in progressive hair loss. In addition to the aesthetic impacts, AGA compromises the psychosocial well-being of individuals. The methodology adopted was an integrative literature review, with searches carried out in the Google Scholar, SciELO, PubMed and LILACS databases (2014-2025), using the descriptors: "male androgenetic alopecia", "manual techniques" and "treatments for androgenetic alopecia". Studies that addressed protocols of manual resources appropriate for Aesthetics were included. The results indicate massage techniques as a promising complementary technique, by improving blood circulation, reducing anxiety and stress, improving sleep quality and increasing follicle nutrition. In addition to traditional treatments, with medications, therapies such as microneedling, low-intensity laser and carboxytherapy have shown efficacy in stimulating hair growth. Comparative analysis suggests that the



combination of different modalities can enhance the results, although the lack of standardization of protocols represents a limitation. It is concluded that AGA requires a multifactorial approach, integrating conventional treatments with complementary therapies.

This study, through a bibliographic analysis, addressed the use of massage techniques in hair care and their potential application as a complementary therapy in the treatment of male androgenetic alopecia.

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1. INTRODUCTION

Androgenetic alopecia (AGA) is the main cause of hair loss, manifesting itself as through the gradual miniaturization of hair follicles in specific areas of the scalp, which leads to thinning and hair loss. This condition has a genetic and hormonal origin, being triggered mainly by the action of androgens, such as dihydrotestosterone (DHT), on genetically predisposed follicles. (BORGES, 2016).

Androgenetic alopecia (AGA) is a complex and prevalent multifactorial condition, affecting millions of people worldwide. This disorder is a result of the interaction between genetic and environmental factors, with a significant influence of androgen hormones, particularly dihydrotestosterone (DHT), which causes miniaturization of follicles capillaries. Although AGA is often seen as a cosmetic issue, it has a profound impact on the quality of life of affected individuals, influencing not only appearance but also emotional and psychosocial well-being. (LIMA; BRANDÃO, 2020).

The importance of hair goes far beyond aesthetics; it has important biological functions, such as protecting the scalp against solar radiation and mechanical trauma, in addition to act in thermoregulation. In aesthetics, hair is considered an expression of beauty and care, valuing both feminine and masculine appearance. Culturally, Hair plays a crucial role in personal, social and cultural identity, being often a symbol of beauty, youth and health. (BORGES, 2016).

Androgenetic alopecia classification systems are valuable tools for health professionals, as they facilitate the assessment and monitoring of the progression of loss capillary, the most used are: the Hamilton system for men, the Eric system Ludwig for women and Sinclair's classification. (BORGES, 2016). Additionally, complementary approaches, such as massage techniques, have been



investigated as potential alternatives in the management of alopecia. Therapeutic massage is an ancient and widely recognized practice, involves systematic manipulations of tissues and organs with therapeutic or preventive objectives. This technique positively impacts the nervous, musculoskeletal and circulatory systems, and can offer benefits such as improvement of local blood circulation, stimulation of the functions of the sweat glands and sebaceous glands, in addition to a potential reactive hyperemia effect that favors tissue nutrition. (TOUGUINHÓ; SILVA, 2022). For aesthetic care in alopecia, the stimulus circulatory system is important and epicranial massage will contribute to this purpose. (NESSI, 2021).

Different massage techniques can produce different effects depending on the maneuvers employed. With regard to the integumentary system, for example, massage can improve microcirculation, increasing oxygenation and nutrition of hair follicles. In the circulatory system, massage helps drain the lymphatic and blood vessels, using techniques that vary according to the depth of the vessels treated. Gentle pressures and slow movements are recommended for superficial vessels, while firmer pressures are indicated for deeper vessels. Furthermore, the massage can cause a peripheral vasodilation, without generating pain or edema, promoting a relaxing and regenerative effect on the tissues (TOUGUINHÓ; SILVA, 2022).

This study investigates how manual techniques can complement the treatment of Male androgenetic alopecia, evaluating its effects on blood circulation and nutrition of hair follicles, its impact on self-esteem and emotional health, its viability as accessible therapy, its integration into clinical protocols and its contribution to the quality of patients' lives.

2 THEORETICAL FRAMEWORK

Androgenetic alopecia (AGA) affects not only physical appearance but also the self-esteem and emotional well-being of men, influencing perception of identity and self-confidence. Progressive hair loss can significantly compromise the self-image, especially among young adults, for whom hair is often associated with traits of attractiveness, youth and vigor. Early baldness tends to trigger feeling of insecurity, anxiety and even depression, since it is socially valued presence of voluminous and healthy hair as a sign of vitality and beauty (EARTH; QUIRINO, 2023).



AGA occurs due to increased sensitivity of hair follicles to androgens, especially DHT, a metabolite of testosterone converted by the enzyme type 5 α -reductase II. DHT binds to androgen receptors in follicles, leading to progressive reduction of the hair cycle, shortening of the anagen phase (growth) and miniaturization of the hair, culminating in atrophy of the affected follicles. (HAUTEQUESTT *et al.*, 2023).

The male population that presents with androgenetic alopecia reports a greater dissatisfaction with one's own image, which can affect one's performance in social interactions and professionals. Hair loss causes some men to withdraw socially, avoiding situations in which they feel exposed or in the spotlight, which can harm the development of interpersonal bonds. In professional environments, men with AAG may report greater difficulty presenting themselves confidently, especially in leadership roles. Leadership or that require public presence, since the absence of hair can impact the shape how others perceive them. These psychosocial impacts are more pronounced among men young people, whose hair loss can prematurely intensify feelings of disconnection in relationships or with their own self-image of youth. (TERRA; QUIRINO, 2023).

Given the facts presented, it is essential to consider the psychological impact of AAG on therapeutic approaches. A multidisciplinary treatment, which combines interventions dermatological and therapeutic with psychological support, is particularly effective, as it helps the patient to deal with physical changes in a healthier way, in addition to strengthening the self-confidence and promote a better quality of life. (HAUTEQUESTT *et al.*, 2023)

Male androgenetic alopecia is a chronic dermatological condition that affects the hair follicles progressively and is largely influenced by genetic factors and hormonal. This type of alopecia is characterized by hair loss on the top of the head and on the frontal areas, and is classified as non-scarring, as the loss is generally reversible in the initial stages. But in advanced cases, the density of the hairs is significantly reduced, which can hinder hair growth even with interventions. (KOWALSKI; BRANDÃO, 2020).

The World Health Organization describes androgenetic alopecia as "hair loss in regions where it should normally be present". Its causes involve, mainly, the action of the hormone dihydrotestosterone (DHT) on hair follicles genetically predisposed, which leads to the miniaturization of these follicles and a cycle of shorter hair growth. This form of alopecia affects about 50% of men in some point in life, usually beginning after puberty and increasing in prevalence with age. (KOWALSKI; BRANDÃO, 2020).



2.1. HAIR PHYSIOLOGY

Hair anatomy comprises specific structures and functions that determine its characteristics. It is composed of three main elements: the follicle, the fiber bundle and the cuticle. The hair follicle includes the root, bulb and hair shaft, and is responsible for growth and nutrition of the hair. The bulb, located at the base of the follicle, acts as the center of production and support of hair, receiving nutrition from adipose tissue. The hair shaft, in turn, it extends to the cuticle, which forms a protective layer around the hair (HALAL, 2016).

The hair strand itself has three main layers: the cuticle, the cortex and the medulla, which, combined, determine the strength, color and shine of the hair. The cuticle is the outer layer, formed by overlapping cells like scales, which protect the hair against external aggressions, such as chemicals and heat, as well as helping to maintain the hydration and natural shine of the hair. Just below is the cortex, the thickest and most central layer of the hair, responsible for resistance, elasticity and color, as it contains proteins, such as keratin, and melanin pigments. The medulla, located in the center of the hair, may or may not be present in all hair types and although its exact function is not yet fully understood understood, it is believed to contribute to shine and structural strength. (HALAL, 2016).

Maintaining healthy hair depends on regular care, such as the use of vegetable oils and wooden combs. Quality products, preferably with natural active ingredients, are recommended to strengthen and protect the scalp and hair, preventing hair loss and breakage. (HALAL, 2016).

2.2. DIAGNOSIS

The diagnosis of male androgenetic alopecia is established through an analysis detailed clinical examination, including thorough collection of the client's history, complete physical examination and complementary laboratory tests. The dermatoscopy technique can also be used which reveals specific characteristics, such as the reduction in the number of threads in each unit follicular, follicles of varying diameters called miniaturized follicles in addition to strands thicker in the occipital and frontal regions of the scalp. (COLPO; BRANDÃO, 2020).

2.3. NORWOOD-HAMILTON SCALE

The Norwood-Hamilton Scale is a grading system refined by Dr. O'Tar



Norwood, widely used to describe the progression of androgenetic alopecia in male standard. This scale is crucial for clinical assessment and treatment planning. treatments, as it allows doctors and health professionals to communicate in a standardizing the severity of hair loss and defining an effective therapeutic form (ROCHA, 2017).

The scale is divided into eight classes, which detail different stages of baldness, as it is can be seen in Figure 1. The scale classes (Figure 1) present in the Hamilton Scale-Norwood are presented below (Cortez et al. 2025)

Class I: There is no visible hair loss.

Class II: Beginning of receding hairline at the temples, forming a slight "M" shape.

Class IIa: More pronounced frontal setback, without vertex involvement.

Class III: Most evident setback at entrances.

Class IIIa: Even greater frontal receding, without loss at the vertex. Baldness becomes noticeable.

Class III Vertex: The frontal hairline is preserved, but there is baldness at the crown (vertex).

Class IV: Marked loss at the temples and vertex, with a band of hair separating the two areas.

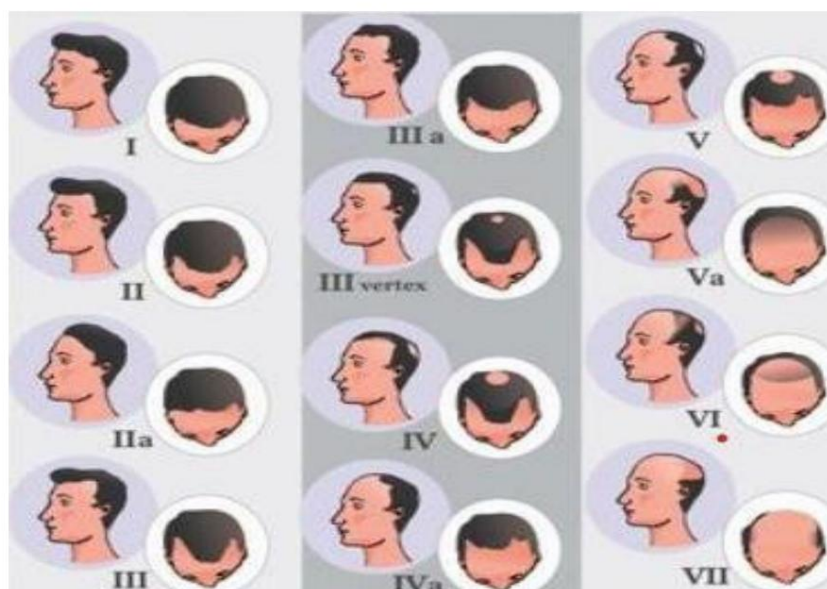
Class IVa: Continuous frontal setback, with no evident loss at the apex.

Class V: The separation between the bald areas begins to decrease. **Class Va:** More hair loss

uniform between the frontal part and the vertex. **Class VI:** The bald areas come together, forming a extensive baldness.

Class VII: Most advanced stage, with only a narrow strip of hair remaining on the sides and the back of the scalp. (CORTEZ *et al.*, 2025)

Figure1. Hamilton-Norwood Scale



Source: Cortez *et al.* (2025)

The Norwood-Hamilton Scale plays an essential role in clinical practice because enables the classification of androgenetic alopecia, guiding the choice of the most appropriate treatment appropriate, which may include the use of medications, hair transplants or therapies complementary, such as therapeutic massages. In addition, it provides a language standardized among health and beauty professionals, facilitating communication about the condition of patients and allowing studies to be carried out systematically, contributing to a better understanding of disease progression and the effectiveness of therapeutic approaches. (BORGES, 2016).

In addition to androgenetic alopecia, it is important to highlight that there are other forms of alopecia, each with its own particularities and possible causes. These variations can present different patterns of hair loss and require specific diagnostic approaches. The understanding these conditions is crucial for effective and appropriate treatment, taking into account considering the complexity and individuality of each case. (PEREIRA, 2018).

MOST USED TREATMENTS FOR ANDROGENETIC ALOPECIA.

2.4. LOW INTENSITY LASER

Low Level Laser Therapy is a therapeutic approach that uses light from low power applied directly to the scalp, with the aim of stimulating the hair growth and improve the health of hair follicles. The fundamental principle of Low Level Laser therapy is based on photobiomodulation, a process in which



light energy, usually of specific wavelengths in the red and infrared, is absorbed by the cells of the hair follicle. This stimulus triggers a series of biological responses that promote the increase in the anagen cycle, or phase of hair growth, prolonging the time the strands remain active and improving the quality of the new strands generated. (ADIL; GODWIN, 2017) Low-Intensity Laser therapy Intensity for AFIFI et al., (2017) promotes biostimulation of hair follicles, increasing the production of adenosine triphosphate (ATP) in cellular mitochondria, which provides more energy for cellular processes and results in greater metabolic activity in the follicle cells. This mitochondrial effect not only prolongs the growth phase, but also enhances the resistance of the strands by reducing thinning and miniaturization of the follicles, which are typical of androgenetic alopecia.

Low Level Laser Therapy Has Shown Positive Results in Trials

clinical trials, being a viable alternative for patients who wish to avoid side effects associated with topical or systemic medications. In addition, Low Level Laser therapy Intensity has advantages in terms of safety and tolerability, since, unlike of pharmacological treatments, does not involve the use of chemical substances and, therefore, presents a low risk of significant adverse effects (SILVA; SANTOS, 2018) The practical application of Low Level Laser therapy involves the use of devices, such as laser helmets and combs, which can be used in both specialized clinics and in the home environment, as long as it is under the guidance of a professional. The frequency and duration of sessions varies according to the clinical protocol adopted and the stage of progression of the alopecia in each patient. (SARMENTO; NOGUEIRA, 2024)

2.5. MICRONEEDLING

Microneedling, also known as collagen induction therapy, is a technique which has recently been included in the therapeutic arsenal for androgenetic alopecia due to its multiple mechanisms of action in stimulating hair growth. This technique consists of creating controlled micro-injuries in the skin using small needles, promoting a tissue repair response that releases growth factors essential for hair regeneration. Specifically, microneedling induces the release of growth factors platelet-derived growth factors, such as epidermal growth factor, which activate stem cells located in the hair bulb and promote the overexpression of genes associated with hair growth, contributing to increased thickness and density of the strands.



(FAGHIHI *et al.*, 2021). These growth factors activated by microneedling function as cytokines, a class of secreted polypeptides that play a regulatory role in cell maturation and repair of tissue damage. In addition, these cytokines are essential for angiogenesis, a process that improves local microcirculation and oxygenation of follicles, stimulating cell groups responsible for integration and vitality of the tissues around the hair follicles (SILVA; SANTOS, 2018).

Microneedling is a promising and safe tool for treatment of androgenetic alopecia, particularly in male pattern baldness. Its ability to promote a regenerative response in hair tissues, combined with its action as enhancer of topical treatments, gives this technique a central role in the management of hair disorders, with demonstrated benefits in hair thickness, density and appearance. regenerated hair. With a growing base of clinical evidence, microneedling continues to stand out as a non-invasive alternative that can be used alone or as an adjuvant in broader treatment protocols for androgenetic alopecia. (ABDI *et al.*, 2023).

In capillary microneedling, needle size is an essential factor in determining the depth of stimulation in the scalp and its benefits in the treatment of alopecia androgenetics and other hair conditions. Shorter needles, between 0.5 mm and 1.0 mm, are indicated to increase the absorption of topical active ingredients and growth factors, enhancing its effects. Needles between 1.5 mm and 2.0 mm reach deeper layers deep into the scalp, stimulating blood microcirculation and the production of collagen, which strengthens the follicles and promotes hair growth. In more severe cases, advanced hair loss, 2.5 mm needles can be used, always with caution to prevent tissue damage. As for the use of drug therapy, some treatments, like Minoxidil, are often associated with microneedling, but generate controversies in the market, raising questions about its safety and suitability in context of aesthetic practice. Thus, the choice of needle length should be personalized, considering the patient's condition, therapeutic objectives and treatment options, ensuring an effective and safe procedure (LEÃO *et al.*, 2022).

2.6. CARBOXYTHERAPY

Carboxytherapy is a therapeutic technique that uses the subcutaneous application of carbon dioxide. carbon (CO₂) to promote vasodilation and increase local vascular flow, benefiting



directly to hair health. When administered to the scalp, CO₂ causes a dilation of blood vessels, significantly increasing blood flow and, consequently, the supply of oxygen and nutrients to the hair follicles. This improvement in oxygenation and circulation in the application area is one of the main mechanisms of action of carboxytherapy, essential for the management of alopecia. The technique induces neovascularization, or that is, the formation of new blood vessels, which favors the environment necessary for cellular nutrition, elimination of accumulated toxins and increase in local metabolism, factors that, together, stimulate the hair follicle and promote the growth of more hair firm and thick. (SILVA; NASCIMENTO, 2023), Carboxytherapy therefore offers a biologically favorable environment for growth capillary by acting directly on the revitalization of the hair follicle, a therapeutic strategy effective in strengthening the hair and promoting a positive response in the treatment of different forms of alopecia. (OLIVO *et al.*, 2017).

2.7. HAIR MESOTHERAPY

Hair mesotherapy is a minimally invasive technique that consists of applying intradermal administration of bioactive substances directly into the scalp, with the purpose of stimulate and strengthen hair follicles. This application is done through micro injections at specific points in the region to be treated. (SARMENTO; NOGUEIRA, 2024).

The active ingredients used in mesotherapy include vitamins, amino acids, antioxidants, vasodilators and pharmacological compounds, such as Minoxidil, which have the function promote local nutrition, stimulate microcirculation and favor cellular metabolism follicular matrix. Because they are applied directly to the dermis, these active ingredients act in a localized manner, increasing its effectiveness compared to other routes of administration (MELO *et al.*, 2020).

The technique allows the compounds to directly reach the hair bulb region, promoting a biological environment conducive to hair growth and strengthening. choice of assets and frequency of applications must be defined according to the condition patient's clinical condition and the characteristics of the androgenetic alopecia presented (NOGUEIRA; BRANDÃO, 2022).

Mesotherapy can be used as a complement to other treatments and requires technical knowledge to ensure correct application, avoiding adverse effects and optimizing clinical results. The definition of the protocol includes the frequency of sessions, volume of active ingredients, application technique and treatment phase in which it will be inserted.

(SARMENTO; NOGUEIRA, 2024).

2.8. MANUAL RESOURCES APPLIED FOR HAIR THERAPY

2.9. HAIR MASSAGE

Scalp massage is a non-invasive manual technique applied to the scalp with the aim to stimulate local blood circulation and promote a health-friendly environment of the hair follicles. The movements are generally smooth, continuous and performed with the fingertips, respecting the anatomy of the skull and the natural direction of hair growth. (ASSIS; DANTAS, 2018).

From a physiological point of view, massage acts on the blood vessels of the scalp, promoting its dilation and facilitating the supply of nutrients and oxygen to the follicles capillaries. Regular practice can contribute to the activation of microcirculation and maintaining a healthy environment for hair development (SARMENTO; NOGUEIRA, 2024).

In addition to the circulatory effects, the technique can also exert direct stimulation on the hair follicles, favoring the anagen phase of the hair cycle, which corresponds to the period of active hair growth. The application must consider aspects such as adequate pressure, frequency and direction of movements, factors that directly influence safety and patient comfort. (ASSIS; DANTAS, 2018).

It is important to highlight that scalp massage can be applied by both professionals and at home, as long as the correct instructions regarding execution are followed. The Standardization of the technique is essential to avoid adverse effects, such as skin irritations more sensitive. (SARMENTO; NOGUEIRA, 2024).

2.10. COMPARISON OF EFFICACY BETWEEN THERAPIES

Comparison of effectiveness between different manual therapies for the treatment of alopecia androgenetics reveals a diversity of approaches that, although they share the objective common to stimulate hair growth and improve follicle health, differ in their mechanisms and clinical results. Among the methods studied, capillary massage stands out, a non-invasive technique that has demonstrated substantial benefits for scalp health scalp and follicles. (HAUTEQUESTT *et al.*, 2023). Scalp massage acts mainly by stimulating local microcirculation, promoting blood flow

to the scalp and increasing the supply of nutrients and oxygen directly to the follicles. This increase in vascularization creates an environment conducive to strengthening of the hair, prolonging the anagen growth phase and delaying miniaturization characteristic of androgenetic alopecia. Studies suggest that regular scalp massage can contribute to improving hair density and hair thickness, in addition to being a safe and easy-to-apply option, both in clinical and home settings (KAISER *et al.*, 2023).

The effectiveness of scalp massage as a treatment for androgenetic alopecia is, however, varied and depends on factors such as the frequency of application, the pressure used and the regularity with which the technique is performed. The literature indicates that, although capillary massage may be less intensive than other therapies, its cumulative effects are significant, especially when used as adjunctive treatment. Compared to therapies that use bioactive compounds, such as carboxytherapy, scalp massage tends to present a more gradual response, but with the benefit of not relying on injections or devices additional, which makes it accessible and with a high level of patient adherence. Carboxytherapy, on the other hand, it offers a different approach by using subcutaneous injection of dioxide carbon dioxide (CO₂) to promote vasodilation and stimulate oxygenation of the scalp. This increased oxygenation, along with the removal of accumulated toxins, creates a regenerative environment that encourages hair health and can result in stronger, more thick. However, carboxytherapy may involve discomfort during application and requires professional monitoring, which makes it more suitable for treatments in clinics specialized (HAUTEQUESTT *et al.*, 2023).

In terms of comparison, it is observed that while capillary massage is a technique accessible and low-cost, with noticeable long-term benefits, carboxytherapy provides a more targeted and intense response, especially indicated for cases in which that vascular strengthening and increased oxygenation are needed on a larger scale. The choice between these manual therapies therefore depends on the stage of androgenetic alopecia, patient preferences and resource availability. (HAUTEQUESTT *et al.*, 2023).

The combination of both approaches is also mentioned in studies as a potential strategy to optimize results by maximizing the benefits of massage for maintaining blood flow and carboxytherapy for an oxygenation boost located. Future research should continue to investigate the efficacy and optimal protocols for each therapy, contributing to a more robust understanding of how these methods can be applied synergistically to meet different degrees and characteristics of



androgenetic alopecia (KAISER *et al.*, 2023).

3. RESULTS AND DISCUSSION

After gathering the main information about the hair techniques applied to treatment of male androgenetic alopecia, 10 scientific studies were selected that specifically address the therapies most commonly used in practice. The choice of these articles were based on criteria such as: scientific relevance, recent time frame (publications from the last ten years), methodological clarity, practical applicability in the area aesthetics and hair, in addition to the diversity of therapeutic approaches, which allows an analysis broad and representative comparative.

This comparative analysis aims to identify patterns of effectiveness, limitations methodological and possible therapeutic combinations, providing an overview well-founded and up-to-date for professionals in aesthetics and hair health. When confronting the results presented in the different studies, it becomes possible to evaluate which techniques demonstrate greater clinical effectiveness, safety and applicability in protocols personalized. The review of scientific studies allowed us to identify the main findings about each manual resource, as detailed below:

Table 1. Manual techniques (massages) in hair therapies.

Year	Title/ Methodology	Objective	Results	Justification	Author(s)
2014	Do In, Shiatsu and Chinese touch Analyze the influence of Acupuncture: a view head massage in sleep quality in therapeutic / people with insomnia. <i>Bibliographic review</i>		Significant improvement in the with reduction of capillaries, insomnia and increased relaxation.	Sleep is crucial to restoring MARTINS, EIS; sleep quality, bulbs improving B. hair nutrition.	LEONELLI, L.
2016	Standardized massage results in increased hair Evaluate the effect of scalp massage on the scalp thickness / hair thickness. <i>Experimental Study</i>		Increased hair thickness and neck region after 24 (0.085 ± mm vs 0.092 mm).	Maintain the scapular tension-free weeks improves flow 0.003 blood for the area ± 0.001 capillary.	KOYAMA, T. et al.
2018	Use of low-intensity laser treatment of Alopecia Androgenetics/ / Hair Improves well-being in massage psychological reduction in the state of stress. <i>bibliographical</i>	Investigate the impacts of being leather emotional and psychological.		Stress and tension increase the fall of hair.	PEARL OF SILVA, Luciana Barbara;

2020	Physical and mental benefits of therapeutic massage/ Study <i>Experimental</i>	To evaluate the effects of head massage on pain relief in patients with tension headaches.	Significant reduction Patients and frequency of pain can develop head first.	with the intensity constant headaches alopecia.	ANDRADE, M. DG et al.
2020	Pain Relief Check out the benefits of head, associated with aromatherapy decrease in massage for migraines the review scalp in patients with chronic migraine. <i>bibliographic</i>		Skull Facial Massage frequency and intensity of crises.	Chronic migraines impair bulb nutrition capillaries, causing AKA et al. hair loss.	ANTONIO,
2021	Epicranial Massage <i>Bibliographic Review</i>	Address hair massage techniques, including the epicrania, for / scalp stimulation.	Potential to improve circulation and hair health, complementing other treatments.	Relaxation has a positive effect on capillary circulation, helping to reduce hair loss.	NESSI, A.
2023	relaxing massage on the psychological and physiological effects of anxiety syndrome <i>I Experimental study</i>	Investigate the effects of head massage in individuals with chronic stress.	Reduction of the feeling of stress and increased psychological and physical relaxation.	Stress and psychological tension cases of hair loss increase.	HAPPY, H. et al.
2023	Relaxing massage for stress relief and anxiety control / <i>Experimental study</i>	To study the impact of head massage on anxiety control in people with GAD.	Reduction in anxiety levels, promoting tranquility and emotional control.	Patients with anxiety have greater hair loss.	JOSE, B. et al.
2024	Capillary intradermal therapy: benefits in the treatment of alopecia/ <i>Bibliographic review</i>	Examine how Effectiveness in reducing stress, scalp massage hairy can decrease improving mood and stress levels in relaxation. stressed individuals.		Relaxation increases capillary blood flow, improving hair loss of hair.	BRAGA OF ALMEIDA, Elisa Helena et al.
2024	bloodroot on the scalp relaxing scalp massage on the scalp, improves blood circulation and nutrition, combating stress and <i>Experimental study</i>	Investigate the effects of scalp massage, improves blood circulation and nutrition, cerebral.	Increased flow better oxygenation and hair health.	The increase in flow sanguine contributing to hair strands	BODON, GB et al.

Source: Prepared by the authors (2025).

Massage has been associated with reduced anxiety levels, promoting a sense of tranquility and emotional control, according to (JOSÉ et al. 2024). The study by NESSI et al. (2021) investigated the effects of scalp massage techniques on scalp health, with emphasis on epicranial massage. The authors observed that the technique can contribute to improving local blood circulation and stimulating hair follicles, 14 suggesting its use as a complementary therapy in treatments for alopecia. Although the results are promising, more research is needed to quantify the benefits and establish standardized protocols.



Martins (2024), refers to the importance of sleep: "Sleep is crucial to restoring hair bulbs, improving hair nutrition." Through Shiatsu there was an improvement significant improvement in sleep quality, with a reduction in insomnia and increased relaxation." Braga de Almeida et al. (2024) confirms in their research that promoting relaxation through Massage increases capillary blood flow, improving hair loss.

In studies by Pereira da Silva (2018), they point out that stress and psychological tension increase cases and hair loss. In this case, scalp massage resulted in improvements in psychological well-being and stress reduction.

For Andrade et al. (2020) head massage significantly reduced the intensity and frequency of headaches. Hair loss is emotionally distressing, with significant negative impact on self-esteem, confidence and body image (PONNAPAKKAM, 2015).

An interesting study by Antônio, Ferreira, Macedo and Sarraceni (2020) observed a increased blood flow to the scalp area, which may contribute to improvement oxygenation and scalp health. It reinforces the studies of Koyama et al. (2026) where the practice of standardized scalp massage resulted in increased scalp thickness hair 24 weeks after starting massage (0.085). Nessi (2021) concludes that massage epicrania demonstrates potential to improve circulation and capillary health, complementing other treatments.

FINAL CONSIDERATIONS

From the evaluation of the ten selected studies, it was possible to identify results significant that directly respond to the research objectives of hair techniques for male androgenetic alopecia. The comparative analysis demonstrated both the potential therapeutic of each approach regarding its limitations, allowing a clearer overview for clinical application.

The studies analyzed show a clear convergence regarding the benefits of scalp massage is not only about emotional health, but also about improvement of hair health. For the authors and selected articles, they highlight that the reduction of psychological and emotional stress, decreased anxiety, improved sleep, achieved by through massage, factors that are directly associated with the reduction of hair loss. Massage techniques, highlighting Epicranial Massage, Cranial Face Massage and Shiatsu, results in improvements in the emotional state and, consequently, in the health of the scalp

scalp, through increased capillary blood flow, reducing muscle tension
assisting in the complementary treatment of androgenetic alopecia.

REFERENCES

ADIL, A.; GODWIN, M. The effectiveness of treatments for androgenetic alopecia: A systematic review and meta-analysis. *Journal of the American Academy of Dermatology*, vol. 77, no. 1, p. 136-141.e5, jul. 2017. DOI: 10.1016/j.jaad.2017.02.054. Available at: <https://pubmed.ncbi.nlm.nih.gov/28396101/>. Accessed on: 16 Mar. 2025.

ANTONIO, Anny Kelry Almeida; FERREIRA, Larissa Gonçalves; GOMES, Mariana Naomy Cabral; MACEDO, Ednéia Nunes; SARRACENI, Jovira Maria. Craniofacial massage associated with aromatherapy for migraine: bibliographic review. *Scientific Journal of Unisalesiano – Lins – SP. Year 12, no. 22, 2020.* <https://unisalesiano.com.br/lins/wp-content/uploads/2022/05/Article-10-Corrigido-estetica.pdf> Accessed on April 21, 2025.

ABDI, P. et al. Efficacy and safety of combinational therapy using topical minoxidil and microneedling for the treatment of androgenetic alopecia: a systematic review and meta-analysis. *Archives of Dermatological Research*, vol. 315, no. 10, p. 2775-2785, Dec. 2023.

DOI: 10.1007/s00403-023-02688-1.

Available at in:

<https://pubmed.ncbi.nlm.nih.gov/37665358/>. Accessed on: March 16, 2025.

ANDRADE, Maria Darc Gonçalves; PEREIRA, Maria Marcilene Vieira de Jesus; MERÊNCIO DA SILVA Patricia Pegoraro; PEREIRA Renata Junqueira. Physical and mental benefits of therapeutic massage. BIOSPHERE ENCYCLOPEDIA, Goiânia Scientific Center, p.134 (2020) <https://www.conhecer.org.br/enciclop/2020B/beneficios.pdf>
To know- Accessed on April 14, 2025. n.32;

ASSIS, Paulo Roberto Gnecco Rodrigues de.; DANTAS, Lidia Vieira. Treatment of male androgenetic alopecia with drug delivery by microneedling. *Dermato-functional and Aesthetics Notebook*. v. 19 n. 4 (2018): Fisioterapia Brasil v19n4. Available at: <https://portalatlanticaeditora.com.br/index.php/fisioterapiabrasil/article/view/2472>.

Accessed

on: March 16, 2025.

AFIFI, L. et al. Low-level laser therapy as a treatment for androgenetic alopecia. *Lasers in Surgery and Medicine*, vol. 49, no. 1, p. 27-39, Jan. 2017. DOI: 10.1002/lsm.22512.

Available at: <https://pubmed.ncbi.nlm.nih.gov/27114071/>. Accessed on: March 16, 2025.

BORGES, FS; SCORZA, FA Therapeutics in aesthetics: Concepts and techniques. 1st ed. São Paulo: Phorte Editora, 2016. 580 p.

BODON. Giovanna Batista, LIMA DE PAULA, Julia Mayra; DE MORAES LISBOA Melissa; FELICIANO David Wilson Gauglitz. The benefits of relaxing massage in combating stress. RIBEIRA VALLEY UNIVERSITY CENTER – UNIVR.

Registration – SP, 2024.

<https://portal.unisepe.com.br/repositorio/wp-content/uploads/sites/10011/2024/06/OS-BENEF%C3%8DCIOS-DA-MASSAGEM-RELAXANTE-NO-COMBATE-AO-ESTRESSE.pdf?getContent> Accessed on April 21, 2025.



BRAGA, Elisa Helena; **MACHINI**, Erika Regina Souza; **LIMA**, Felipe Monteiro.

Intradermal capillary therapy: benefits in the treatment of alopecia. Health Sciences, Volume 29- Issue 140/NOV 2024 / 11/22(2024) DOI: 10.69849/revistaft/ar10202411221314 <https://revistaft.com.br/intradermoterapia-capilar-beneficios-no-tratamento-da-alopecia/> Accessed on April 14, 2025.

CAGNASSI, Tamires; **GODOI DA SILVA**, Ana Paula; **VIANA**, Joice Moreira; **SILVA**, Flavia Alexandra de Souza; **SOARES**, Rayssa Ramos; **FREITAS E SILVA**, Thalita Bastos
of. **Alopecia and its treatments: literature review.** Saúde em Foco Journal, Amparo: UNIFIA, ed. 15, p.479, 2023.
Available in:

<https://portal.unisepe.com.br/unifia/wp-content/uploads/sites/10001/2023/05/ALOPECIA-E-SEUS-TRATAMENTOS-REVISAO-DE-LITERATURA.pdf>.

Accessed
on: October 26, 2024.

CAVALCANTI, CP **Alopecia treatment protocols: A review.** 2015. 31 p.
Final Course Work (Degree in Pharmacy) – State University of Paraíba (UEPB). Paraíba, 2015.
Available in:

CAVALCANTI, T.; **SANTOS**, JC; **ARAGÃO**, IPB de. **The impact of alopecia androgenetics in men and its treatments: a literature review.** Ibero-American Journal of Humanities, Sciences and Education, [S. l.], v. 9, n. 6, p. 514–526, 2023. DOI: 10.51891/rease.v9i6.9928.

Available at
<https://periodicorease.pro.br/rease/article/view/9928>. Accessed on: October 26, 2024.

CHAVES, Rafaela Lepkoski; **SANSON**, Diego Martins; **NASCIMENTO**, Eduarda Faria do; **OLIVEIRA**, Julia Cristina de; **ESTEVES**, Júlia Peres; **SILVA**, Kellen Luanny; **GOMES**, Marina Nascimento; **OLIVEIRA**, Rafaella Bosi Castro de; **GANDRA**, Milena Ferreira. **Therapeutic options and perspectives in the treatment of androgenetic alopecia.** Electronic Journal Scientific Collection, v. 25, 2021.

DOI: <https://doi.org/10.25248/REAC.e7445.2021>. Available at
<https://acervomais.com.br/in-dex.php/cientifico/article/view/7445/4667>. Accessed on: October 29, 2024.

COLPO, MCV; **BRANDÃO**, BJF **Male androgenetic alopecia: a case report case of microneedling treatment associated with growth factors and topical minoxidil.** BWS Journal (Discontinued), [S. l.], v. 3, p. 1–6, 2020. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/view/54>. Accessed on: October 26, 2024.

CORTEZ, Gabriel Lazzeri; **HASSUN**, Karime; **LINHARES**, Luciana Ribeiro Patricio; **FLORENÇO**, Verena; **PINHEIRO**, Maria Valeria Bussamara; **NASCIMENTO**, Mauricio Mendonça do. **Male androgenetic alopecia.** Brazilian Annals of Dermatology, [S. l.], v. 99, n. 2, p.

n. 2, p. 1-9, 2024. Available at: <https://www.anaisdedermatologia.org.br/pt-alopecia-androgenetica-masculina-articulo-S2666275224002753>. Accessed on: May 5, 2025. DOI: <https://doi.org/10.1016/j.abdp.2024.12.014>.

FANTI, PA; **BARALDI**, C.; **MISTIALI**, C.; **PIRACCINI**, BM **Cicatricial alopecia.** *Giornale Italiano di Dermatologia e Venereologia*, v. 153, no. 2, p. 230-242, apr. 2018. DOI: 10.23736/S0392- Available 0488.18.05889-3. in:

<https://pubmed.ncbi.nlm.nih.gov/29368842/>. Accessed on: March 16, 2025.

FAGHIHI, G. et al. Microneedling in androgenetic alopecia; comparing two different depths of microneedles. *Journal of Cosmetic Dermatology*, vol. 20, no. 4, p. 1241-1247, apr. 2021. DOI: 10.1111/jocd.13714. Available at: <https://pubmed.ncbi.nlm.nih.gov/32897622/>. Accessed on: March 16, 2025.

Relaxing massage in anxiety syndrome .

BRAZILIAN UNIVERSITY CENTER - UNIBRA – Recife – PE, 2023.
<https://www.grupounibra.com/repositorio/ESTET/2023/massagem-relax-ante-na-sindro-me-da-anxiety.pdf>
 Accessed on April 21, 2025;

GUPTA, AK; LYONS, DC; ABRAMOVITS, W. Low-level laser/light therapy for androgenetic alopecia. *Skinmed*, vol. 12, no. 3, p. 145-147, May.-Jun. 2014. Available at: <https://pub-med.ncbi.nlm.nih.gov/25134310/>. Accessed on: March 16, 2025.

HALAL, J. Milady Trichology and Cosmetic Chemistry. 5th ed. São Paulo: Cengage Learning, Pioneira Thompson, 2016.

HAUTEQUESTT, Gabriella Ferreira; SANTOS, José Chaia; ARAGÃO, Ivana Picone Borges de. THE IMPACT OF ANDROGENETIC ALOPECIA IN MEN AND THEIR TREATMENTS:
 A LITERATURE REVIEW. *Ibero-American Journal of Humanities, Sciences and Education*, [S. l.], v. 9, n. 6, p. 514–526, 2023. DOI: 10.51891/rease.v9i6.9928.
 Available at: <https://periodicorease.pro.br/rease/article/view/9928>. Accessed on: March 27, 2025.

JOSÉ, Beatriz Mikaelle de Lima; MACÊDO, Dayara Barbosa; MOREIRA Gessilene Diana da Silva; PEDROSA, Ingrid Camilly Barbosa; SANTANA DA SILVA, Renata Cristina Relaxing massage for stress relief and anxiety control 25 p. Brazilian University Center - Unibra cosmetology. Recife, 25 <https://www.grupounibra.com/repositorio/ESTET/2023/a-massagem-relaxante-no-alivio-do-estresse-e-controle-da-ansiedade.pdf> aesthetics technologist p. and
 Accessed on April 14, 2025. (2023)

KAISER, M.; ABDIN, R.; GAUMOND, SI; ISSA, N.; JIMENEZ, J. J.
Treatment of Androgenetic Alopecia: Current Guidance and Unmet Needs. *Clinical, Cosmetic and Investigational Dermatology*, vol. 16, p. 1387-1406, 2023.
<https://pubmed.ncbi.nlm.nih.gov/37284568/>
 Accessed on: March 10, 2025

KATZER, T.; LEITE JÚNIOR, AC; BECK, R.; SILVA, CB Physiopathology and current treatments of androgenetic alopecia: Going beyond androgens and anti-androgens. *Dermatologic Therapy*, vol. 32, 2019. <https://pubmed.ncbi.nlm.nih.gov/31400254/>
 Accessed on: March 10, 2025

K.O., J.M.; MAYO, TT; BERGFELD, WF; et al. Clinical outcomes for uptitration of baricitinib therapy in patients with severe alopecia areata: A pooled analysis of the

BRAVE-AA1 and BRAVE-AA2 trials. JAMA Dermatology, vol. 159, no. 9, p. 970-976, 2023.
DOI: 10.1001/jama-dermatol.2023.2581. Accessed on: October 26, 2024.

KOWALSKI, Maria Claudia Sei; **BRANDÃO**, Byron José Figueiredo. **Use of Mesotherapy for Androgenetic Alopecia: a literature review.** BWS Journal, São Paulo, v. 3, e20060080, p. 1-7, Jun. 2020. Available at:

file:///C:/Users/marce/Downloads/revista,+kowalski%20(2).pdf. Accessed on: 26 Oct. 2024.

KOYAMA,Taro; **KOBAYASHI**, Kazuhiro; **HAMA** Takanori; **MURAKAMI** Kasumi; **OGAWA** Rei. **Standardized scalp massage results in increased hair thickness by inducing stretching forces on dermal papilla cells in tissue** 25 subcutaneous. Eplasty. of January of 2016;16:e8. <https://pmc.ncbi.nlm.nih.gov/articles/PMC4740347/pdf/eplasty16e08.pdf> Accessed on April 21, 2025.

LIMA, EA de; **BRANDÃO**, BJJ **Mesotherapy in the Treatment of Alopecia Androgenetics: Review Article.** BWS Journal (Discontinued), [S. l.], v. 3, p. 1–7, 2020. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/view/55>. Accessed on: October 25, 2024.

LEÃO, Karen Julyanna Figueiredo; **LIMA E SILVA**, Danielly Karoline de Almeida de; **SAN- TANA**, Ingrid Carolynny Morais. **The effects of microneedling and low-intensity laser on male androgenetic alopecia: an integrative review.** RECIMA21 - Multidisciplinary Scientific Journal, v. 3, no. 5, p. e351552, 2022. DOI: 10.47820/recima21.v3i5.1552. Available at in: <https://recima21.com.br/index.php/recima21/article/view/1552>. Accessed on: February 16, 2025.

MELO, D.; **BARRETO**, TM; **PLATA**, GT; **ARAUJO**, LR; **TORTELLY**, V. **Excellent response to mesotherapy as adjunctive treatment in male androgenetic alopecia.** Journal of Cosmetic Dermatology, v. 19, p. 75-77, 2020. <https://pubmed.ncbi.nlm.nih.gov/31066492/> Accessed on: March 10, 2025.

MARTINS, EIS; **LEONELLI**, LB Do In, Shiatsu and Acupuncture a Chinese vision of therapeutic touch. 3 ed. Brazil: Roca, (2014). 296 p.

MESSINGER, AG, & SINCLAIR, R. D. "Follicular miniaturization in female pattern hair loss: A case-control study." Journal of Investigative Dermatology, 126(12), 2863-2869. 2006. <https://pubmed.ncbi.nlm.nih.gov/17034520/> Accessed on: March 10, 2025.

NESSI, A.; **DELGADO**, J.; **PEREIRA**, MFL; **ARANTES**, P. Epicranial Massage. In: Massage in Practice. Diffusion Publishing, São Caetano do Sul, SP, 2021.

NOGUEIRA, ES; **PEREIRA**, LP; **BACELAR**, I. **Treatments for androgenetic alopecia and alopecia areata: microneedling, low-intensity laser and growth factors - literature review.** Revista Saúde em Foco, n. 10, 2018. Available https://portal.uni-sepe.com.br/unifia/wp-content/uploads/sites/10001/2018/07/072_TRATAMENTO. Accessed on: October 26, 2024.

NOGUEIRA, MHA .; **BRANDÃO**, José Figueiredo, B. . Hair Mesotherapy: review and



complications. BWS Journal (Discontinued), [S. l.], v. 5, p. 1–7, 2022. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/view/307>. Accessed on: February 27, 2025.

NTSHINGILA, Sincengile; **OPUTU**, Ogheneochuko; **AROWOLO**, Afolake T.; **KHUMALO**, Nonhlanhla P. **Androgenetic alopecia: An update**. JAAD International, vol. 13, p.150-158, 2023. Available at: <https://doi.org/10.1016/j.jdin.2023.07.005>. Accessed on: 28 Oct. 2024.

OLIVEIRA JÚNIOR, Silvio José de. **Treatment of cicatricial alopecia: synthesis of evidence**. BWS Journal, v. 4, e210600214, p. 1-12, Jun. 2021. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/download/214/104/695>. Accessed on: Oct. 26, 2024.

OLIVO, JN; **BEZERRA**, R. de SA; **CAMILO**, FCSM THE BENEFITS OF CARBOXYTHERAPY IN THE TREATMENT OF CAPILLARY ALOPECIA. **PROCEEDINGS OF THE FORUM OF**

SCIENTIFIC INITIATION OF UNIFUNEC, Santa Fé do Sul, São Paulo, v. 8, n. 8, 2017. Available at: <https://seer.unifunec.edu.br/index.php/forum/article/view/3009>. Accessed on: March 16, 2025.

PEREIRA, Lorena Almeida. **Main types of non-scarring alopecia and their pathophysiogenesis**. Aesthetics in Movement Journal, v. 1, n. 1, 2018. Available at: <https://revista.fumec.br/index.php/esteticaemmovimento/article/view/6500>. Accessed on: October 26, 2024.

PEREIRA DA SILVA, Luciana Bárbara; **SANTOS** Belúzia Almeida. **Use of Low-Intensity Laser in the Treatment of Androgenetic Alopecia: A Literature Review**. Id on Line Rev. Mult. Psic. V.12, N. 40. (2018) - ISSN 1981-1179 Electronic edition at <http://idonline.emnuvens.com.br/id> Accessed on April 14, 2025.

PALMA-PENÑA, Sofía; **VIVAS-O'CONNOR**, Virginia. **Telogen effluvium**. *Piel*, [s.l.], v. 39, no. 8, p. 487-494, Oct. 2024. Available at: <https://doi.org/10.1016/j.piel.2023.12.021>. Accessed at: March 26, 2025.

QUEIROZ DE MACEDO CASTOR DE LIMA, PC; **BRANDÃO**, BJF Acute Telogen Effluvium and Alopecia Areata Associated with COVID-19. **BWS Journal (Discontinued)**, [S. l.], v. 5, p. 1– 9, 2022. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/view/273>. Accessed on: 26 Mar. 2025.

ROCHA, Juliana Justi. **Application of microneedling associated with hair therapy in the treatment of male androgenetic alopecia**. Aesthetics and Well-Being, Tubarão, 2017. Available at: <https://sobese.org.br/wp-content/uploads/2023/08/Artigo-microagulhamnto-e-trapia-capilar-na-aag-masculina.pdf>. Accessed on: October 26, 2024.

SILVA, Luciana Bárbara Pereira da; **SANTOS**, Belúzia Almeida. Use of low-intensity laser in the treatment of androgenetic alopecia: a literature review. Ibero-American Journal of Humanities, Sciences and Education, v. 12, n. 40, 2023. DOI: <https://doi.org/10.14295/idon-line.v12i40.1178>. Accessed on: Feb 16, 2025.

SARMENTO, Rafaella Gobira Barbosa; NOGUEIRA, Ana Paula Silva. Hair Therapy for Male Androgenetic Alopecia with the Use of Low-Level Laser Associated with Essential Oils. *ID on Line Journal of Psychology*, v. 14, n. 53, p. 2024. Available at: <https://doi.org/10.14295/online.v14i53.2824>. Accessed on: February 27, 2025.

SIMPLICIO, PC; MEJIA, D. Carboxytherapy in the treatment of alopecia. Postgraduate (Dermato-Functional Physiotherapy) – Ávila College, 2013. Accessed on: March 16, 2025.

SINCLAIR, R., Patel, M., DAWSON, T.L., YAZDABADI, A., & DINH, Q. "Hair loss in women: medical and cosmetic approaches to increase scalp hair fullness". *British Journal of Dermatology*,

165(Suppl 3), [https://](https://www.researchgate.net/publication/51905624_Hair_loss_in_women_Medical_and_cosmetic_approaches_to_increase_scalp_hair_fullness) 12-18. 2011.

www.researchgate.net/publication/51905624_Hair_loss_in_women_Medical_and_cosmetic_approaches_to_increase_scalp_hair_fullness Accessed on: March 10, 2025

TERRA, Maxmiliano Costa; QUIRINO, Leonardo de Medeiros. Psychological and social factors related to androgenetic alopecia in men and women: an integrative review. *BWS Journal*, São Paulo, v. 6, e230100417, p. 1-10, Jan. 2023. Available at: <https://bwsjournal.emnuvens.com.br/bwsj/article/view/230100417>. Accessed: Oct. 29, 2024.

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