Understanding Stem Cell Therapy for Alopecia

A Patient Guide from Auragens

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Advancing Regenerative Medicine:
Treatments & Empathy Amplified by Science and Technology

2026

Welcome

Hair loss affects millions of people worldwide, and we understand that alopecia is far more than a cosmetic concern. For many, it represents a deeply personal challenge that impacts self-esteem, emotional well-being, and quality of life. Whether you are experiencing gradual thinning, patchy hair loss, or more extensive alopecia, the journey can feel isolating and overwhelming.

At Auragens, we recognize both the physical and emotional dimensions of hair loss. We are committed to advancing regenerative medicine through rigorous science, compassionate care, and innovative cellular therapies. This guide has been prepared to help you understand the emerging role of human umbilical cord-derived mesenchymal stem cells (hUC-MSCs) from Wharton's Jelly in the treatment of alopecia.

This document is designed as an evidence-based educational resource to prepare you for a meaningful consultation with our medical team. It explains what alopecia is, why current treatments may fall short, what stem cell therapy involves, and what the scientific literature currently shows about safety and potential benefits. Our goal is to empower you with knowledge so that you can make informed decisions about your care in partnership with your physicians.

You are not alone in this journey, and we are here to support you every step of the way.

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1. Understanding Alopecia and Current Treatment Limitations

1.1 What Is Alopecia?

Alopecia is the medical term for hair loss. It encompasses a range of conditions that affect the hair follicles—the tiny structures in the scalp and skin responsible for producing hair. Hair loss can vary widely in pattern, severity, and underlying cause.

Common Types of Alopecia:

- **Androgenetic Alopecia (AGA):** Also known as male or female pattern hair loss, AGA is the most common form of alopecia. It is driven by genetic factors and hormonal influences, particularly the effects of dihydrotestosterone (DHT) on hair follicles. In men, it typically presents as a receding hairline and thinning at the crown; in women, it often manifests as diffuse thinning over the top of the scalp [1].
- **Alopecia Areata (AA):** An autoimmune condition in which the body's immune system mistakenly attacks hair follicles, leading to patchy, round areas of hair loss

on the scalp or other parts of the body. In severe cases, it can progress to total scalp hair loss (alopecia totalis) or complete body hair loss (alopecia universalis) [2].

- **Scarring (Cicatricial) Alopecias:** A group of rare disorders in which inflammation destroys hair follicles and replaces them with scar tissue, resulting in permanent hair loss. Examples include lichen planopilaris and frontal fibrosing alopecia [3].

1.2 Organs and Tissues Affected

Alopecia primarily affects the **hair follicles** and the **scalp**. In autoimmune forms like alopecia areata, the **immune system** is also involved, with T-cells infiltrating the follicle and disrupting the normal hair growth cycle [2]. The dermal papilla—a specialized cluster of cells at the base of each follicle—plays a critical role in regulating hair growth and is often a key target in both disease and treatment [4].

1.3 Progression, Symptoms, and Psychosocial Burden

The progression of alopecia varies by type. Androgenetic alopecia typically develops gradually over years, with progressive miniaturization of hair follicles leading to finer, shorter hairs and eventual follicle dormancy [1]. Alopecia areata can be unpredictable, with episodes of hair loss followed by spontaneous regrowth in some cases, or persistent and progressive loss in others [2].

Beyond the physical symptoms, alopecia carries a significant **psychosocial burden**. Studies consistently show that hair loss is associated with anxiety, depression, reduced self-confidence, and impaired quality of life [5]. For many patients, the emotional impact is as important to address as the physical condition itself.

1.4 Current Standard Treatments

Several treatments are available for alopecia, but each has limitations:

- **Minoxidil (Rogaine®):** A topical medication that can stimulate hair growth in androgenetic alopecia and alopecia areata. It requires continuous use, and results vary. Many patients experience only modest improvement, and hair loss typically resumes if treatment is stopped [6].
- **Finasteride (Propecia®):** An oral medication for male pattern hair loss that inhibits the conversion of testosterone to DHT. It can slow hair loss and promote regrowth in some men, but it is not suitable for women of childbearing age and may cause sexual side effects [6].
- **JAK Inhibitors (e.g., Baricitinib, Ritlecitinib):** Recently approved for severe alopecia areata, these oral medications modulate immune signaling. They have shown promise in clinical trials but are expensive, require ongoing use, and carry potential risks including infections and cardiovascular events [7].

- **Corticosteroids:** Used for alopecia areata, corticosteroids can be applied topically, injected into the scalp, or taken orally to suppress immune activity. They may promote regrowth in localized patches but are less effective for extensive disease and can cause side effects with long-term use [2].
- **Platelet-Rich Plasma (PRP):** An autologous treatment in which a patient's own blood is processed to concentrate platelets and growth factors, then injected into the scalp. PRP has shown variable results in clinical studies, with some patients responding well and others seeing little benefit [8].

1.5 Limitations of Current Treatments

Despite these options, many patients remain inadequately treated. Key limitations include:

- **Partial efficacy:** Most treatments slow hair loss or produce modest regrowth but do not fully restore hair density or reverse follicle miniaturization [6], [8].
- **Side effects:** Medications like finasteride and JAK inhibitors can cause unwanted effects that limit tolerability [6], [7].
- **Dependency:** Benefits typically require continuous treatment; stopping often leads to renewed hair loss [6].
- **Inability to regenerate follicles:** Conventional therapies do not address the underlying degeneration of hair follicles or restore follicles that have become dormant or scarred [9].
- **No cure for scarring alopecias:** Once follicles are replaced by scar tissue, current treatments cannot regenerate them [3].

1.6 Why Regenerative Medicine Is Being Explored

Given these limitations, researchers are investigating **regenerative medicine** approaches that aim to restore hair follicle function at a cellular and molecular level. Mesenchymal stem cells (MSCs) and their secreted factors—including growth factors, cytokines, and extracellular vesicles (exosomes)—have emerged as promising candidates. These therapies are being studied for their potential to stimulate dormant follicles, modulate immune responses, reduce inflammation, and support the follicle microenvironment in ways that conventional treatments cannot [9], [10], [11].

2. What Are hUC-MSCs from Wharton's Jelly?

2.1 Mesenchymal Stem Cells: An Overview

Mesenchymal stem cells (MSCs) are a type of adult stem cell found in various tissues throughout the body, including bone marrow, adipose (fat) tissue, and the umbilical cord. MSCs have the ability to differentiate into multiple cell types—such as bone, cartilage, and fat cells—and possess powerful regenerative properties. Importantly, MSCs exert much of

their therapeutic effect not by becoming new tissue themselves, but by secreting a rich array of bioactive molecules that influence surrounding cells and tissues [12].

2.2 Wharton's Jelly: A Unique and Ethical Source

Wharton's Jelly is the gelatinous connective tissue found within the human umbilical cord. It is an abundant source of mesenchymal stem cells that can be collected non-invasively after a healthy, full-term birth. Because umbilical cords are typically discarded as medical waste, harvesting MSCs from Wharton's Jelly is ethically uncontroversial and does not involve harm to the donor or the newborn [13].

hUC-MSCs from Wharton's Jelly have several advantages over MSCs from other sources:

- **Younger and more potent:** These cells are derived from neonatal tissue and tend to have higher proliferative capacity and greater secretion of growth factors compared to MSCs from adult tissues [13].
- **Low immunogenicity:** hUC-MSCs express low levels of immune-stimulating molecules (MHC class I and II), which reduces the risk of immune rejection and makes them suitable for allogeneic (donor-to-patient) use [14].
- **Abundant and scalable:** A single umbilical cord can yield large numbers of MSCs, allowing for consistent, large-scale production [13].

2.3 Paracrine and Trophic Signaling

The therapeutic effects of hUC-MSCs are primarily mediated through **paracrine signaling**—the secretion of growth factors, cytokines, chemokines, and extracellular vesicles (including exosomes) that communicate with and support other cells. These secreted factors can:

- Stimulate cell proliferation and survival
- Modulate immune responses and reduce inflammation
- Promote angiogenesis (new blood vessel formation)
- Enhance tissue repair and regeneration [12], [15]

In the context of alopecia, these paracrine effects may help reactivate dormant hair follicles, support the dermal papilla, improve the follicle microenvironment, and modulate immune-mediated damage [10], [11].

2.4 Donor Screening, Lab Expansion, Quality Control, and Cryopreservation

At Auragens, the safety and quality of hUC-MSCs are paramount. Our process includes:

- **Rigorous donor screening:** Umbilical cord donors undergo comprehensive medical history review and infectious disease testing to ensure safety [16].
- **Laboratory expansion:** MSCs are isolated from Wharton's Jelly and expanded in a controlled, sterile laboratory environment under Good Manufacturing Practice (GMP) standards [16].

- **Quality control:** Each batch of cells is tested for identity, purity, potency, viability, and sterility. Cells are characterized by surface markers and functional assays to confirm they meet established criteria for MSCs [16].
- **Cryopreservation:** Cells are carefully frozen and stored in liquid nitrogen, preserving their viability and function until they are thawed for clinical use [16].

This meticulous process ensures that every dose of hUC-MSCs meets the highest standards of safety, consistency, and therapeutic potential.

Why Auragens: AABB Accreditation — The Gold Standard in Cellular Therapy

Auragens Stem Cell Center is proud to be AABB accredited — a critical distinction that sets us apart from unaccredited clinics.

What is AABB Accreditation?

AABB (Association for Advancement of Blood and Biotherapies) is the internationally recognized leader in setting quality and safety standards for cellular therapies. AABB is a deemed status organization by the FDA and AABB accreditation represents the gold standard in the field — the most rigorous, comprehensive certification available for facilities that process and administer cellular products.

What Does AABB Accreditation Mean for You?

When you choose an AABB-accredited center like Auragens, you can trust that we meet the highest international standards in:

- **Cell Processing Excellence:** Our laboratory protocols follow strict, validated procedures ensuring every cell product meets pharmaceutical-grade quality specifications.
- **Donor Screening & Safety:** Comprehensive screening protocols ensure all donor tissue is thoroughly tested and meets stringent safety criteria.
- **Laboratory Practices:** Our facilities, equipment, and processes undergo regular inspection and must meet exacting standards for sterility, environmental control, and quality assurance.
- **Patient Safety:** From cell arrival through administration and follow-up, every step is designed and monitored to protect your safety.
- **Staff Expertise:** Our team maintains specialized training and competency requirements specific to cellular therapy.
- **Traceability & Documentation:** Complete tracking and documentation of every cell product ensures full accountability.
- **Continuous Quality Improvement:** Regular audits, proficiency testing, and quality reviews.

Why This Matters

The field of stem cell therapy is rapidly growing, but not all clinics meet the same standards. Many facilities operate without independent accreditation or oversight. AABB accreditation means an external, U.S., FDA, expert organization has thoroughly inspected and validated our practices —

giving you independent verification, proven quality systems, and genuine peace of mind. When you choose Auragens, you're choosing a center that has been independently verified to meet the most stringent international standards for cellular therapy quality and safety.

AABB accreditation is not easy to achieve or maintain — it requires significant investment in infrastructure, training, quality systems, and ongoing compliance. We've made this commitment because you deserve nothing less than the highest standard of care.

3. How hUC-MSCs May Help with Alopecia

Emerging research suggests that hUC-MSCs and their secreted products may support hair regrowth and follicle health through several interconnected biological mechanisms. It is important to understand that this is an area of active investigation, and while early findings are promising, more research is needed to fully establish efficacy and optimal treatment protocols.

3.1 Paracrine Signaling and Hair Follicle Stimulation

One of the primary ways hUC-MSCs may help with alopecia is through the secretion of **growth factors** that directly stimulate hair follicle cells. Key growth factors identified in MSC secretomes include:

- **Vascular Endothelial Growth Factor (VEGF):** Promotes blood vessel formation and improves nutrient and oxygen delivery to hair follicles [18], [19].
- **Hepatocyte Growth Factor (HGF):** Stimulates the proliferation of dermal papilla cells and keratinocytes, supporting the transition of hair follicles from the resting (telogen) phase to the active growth (anagen) phase [18], [20].
- **Keratinocyte Growth Factor (KGF):** Enhances the growth and survival of epithelial cells in the hair follicle [18].
- **Insulin-Like Growth Factor-1 (IGF-1):** Promotes cell proliferation and inhibits apoptosis (cell death) in follicle cells, helping to maintain follicle health [18], [21].

Preclinical studies have shown that MSC-conditioned media (the liquid containing secreted factors) can stimulate hair follicle cycling and increase hair density in animal models of androgenetic alopecia [18], [22]. Clinical studies in humans have also reported improvements in hair count and thickness following treatment with MSC-derived products [10], [23], [24].

3.2 Anti-Inflammatory and Immunomodulatory Effects

In **alopecia areata**, an autoimmune condition, the immune system attacks hair follicles, leading to inflammation and hair loss. hUC-MSCs have well-documented **immunomodulatory** properties that may help address this underlying pathology [25].

MSCs can:

- **Induce regulatory T-cells (Tregs):** These immune cells help suppress excessive immune responses and restore immune balance [25], [26].
- **Modulate cytokine production:** MSCs can reduce pro-inflammatory cytokines (such as TNF-α, IFN-γ, and IL-17) and increase anti-inflammatory cytokines (such as IL-10), creating a more favorable environment for follicle recovery [25], [27].
- **Inhibit T-cell proliferation and activation:** By dampening the activity of autoreactive T-cells, MSCs may reduce immune-mediated damage to hair follicles [25], [26].

A clinical study involving patients with alopecia areata treated with Wharton's Jelly-derived MSCs reported hair regrowth and improvements in disease severity, suggesting that immunomodulation may play a key role in therapeutic benefit [28]. Another study using a systemic MSC-based approach (Stem Cell Educator therapy) also demonstrated hair regrowth in alopecia areata patients, with evidence of immune rebalancing [29].

3.3 Exosome-Mediated Signaling

Exosomes are tiny extracellular vesicles (30–150 nanometers in diameter) secreted by MSCs. They carry a cargo of proteins, lipids, and genetic material (including microRNAs) that can be taken up by recipient cells, influencing their behavior [30].

Recent research has highlighted the role of MSC-derived exosomes in hair regeneration:

- **Activation of the Wnt/β-catenin pathway:** This signaling pathway is critical for hair follicle development and cycling. Studies have shown that exosomes from hUC-MSCs can activate Wnt/β-catenin signaling in dermal papilla cells, promoting the transition of follicles into the anagen (growth) phase [31], [32], [33].
- **MicroRNA delivery:** Exosomes enriched with specific microRNAs (such as miR-21-5p and let-7b-5p) have been shown to target genes involved in cell proliferation and differentiation, enhancing follicular regeneration [33].
- **RAS/ERK signaling:** Exosomes have also been reported to upregulate the RAS/ERK pathway, which supports cell survival and proliferation in hair follicles [34].

Clinical trials using MSC-derived exosomes for androgenetic alopecia have reported significant improvements in hair density, hair diameter, and patient satisfaction, with minimal adverse effects [35], [36], [37]. A systematic review of exosome-based therapies for alopecia concluded that exosomes show promise across multiple alopecia types, though larger, well-controlled studies are needed [38].

3.4 Reduction of Oxidative Stress

Oxidative stress—an imbalance between free radicals and antioxidants in the body—can damage hair follicle cells and contribute to hair loss, particularly in androgenetic alopecia [39]. MSCs secrete antioxidant molecules and enzymes that may help protect follicles from

oxidative damage, preserving their function and promoting a healthier follicle microenvironment [40].

3.5 Angiogenic Support

Adequate blood supply is essential for delivering nutrients and oxygen to hair follicles. MSCs promote **angiogenesis**—the formation of new blood vessels—primarily through the secretion of VEGF and other pro-angiogenic factors [18], [19]. Enhanced vascularization around the dermal papilla may improve follicle health and support sustained hair growth [19], [41].

4. Clinical Evidence and Research Findings

The use of MSC-based therapies for alopecia is an emerging field, and the clinical evidence base is growing. Below, we summarize key findings from human studies and clinical trials involving hUC-MSCs, MSC-derived exosomes, and related products.

4.1 Androgenetic Alopecia (AGA)

Randomized Controlled Trials and Clinical Studies:

- A **randomized, double-blind, vehicle-controlled trial** evaluated an adipose-derived stem cell constituent extract in 38 patients with androgenetic alopecia. The treatment group showed significant increases in hair density and thickness compared to the vehicle control, with no serious adverse events reported [42].
- A **randomized controlled trial** of autologous adipose-derived stem cell-conditioned media combined with minoxidil in male AGA patients demonstrated significantly greater improvements in hair count and density compared to minoxidil alone. The combination therapy was well tolerated [43].
- A **dose-finding, double-blind, placebo-controlled trial** of autologous dermal sheath cup cells in male and female pattern hair loss found that higher doses were associated with greater increases in hair density. The treatment was safe, with only mild, transient injection site reactions reported [44].
- A **clinical trial** of autologous hair follicle-derived mesenchymal stem cell suspension for androgenic alopecia reported improvements in hair density and patient satisfaction, with no serious adverse events [45].

Exosome-Based Therapies:

- A **clinical trial** of placental-derived MSC exosomes for androgenetic alopecia reported significant improvements in hair density (from 91.5 to 109.5 hairs/cm²), hair diameter (from 0.048 to 0.059 mm), and reduced hair loss (from 200 to 80 hairs at 6 weeks), with no significant adverse effects [37].

- A **study** of human umbilical cord MSC-derived exosomes demonstrated that exosomes enhanced hair count and terminal hair diameter in AGA patients. The treatment activated the Wnt/β-catenin pathway and promoted follicular regeneration [33], [46].
- A **systematic review** of exosome therapies for alopecia concluded that exosomes from various MSC sources (adipose, umbilical cord, placenta) showed consistent improvements in hair density and thickness across multiple studies, with favorable safety profiles [38].

Mechanistic Insights:

- Preclinical studies have shown that hUC-MSC secretomes promote hair growth by activating the **PI3K/AKT/mTOR pathway** and increasing methylthioadenosine synthesis, which supports follicle cycling [47].
- MSC-derived exosomes have been shown to restore **follicular β-catenin signaling** in androgenetic alopecia models, reversing follicle miniaturization and promoting hair regrowth [32].

4.2 Alopecia Areata (AA)

Clinical Case Reports and Series:

- A **case series** of four patients with alopecia areata treated with Wharton's Jelly-derived MSCs reported hair regrowth in all patients, with improvements in disease severity scores. No serious adverse events were observed [28].
- A **clinical study** using Stem Cell Educator therapy (a systemic MSC-based approach) in alopecia areata patients demonstrated hair regrowth and evidence of immune rebalancing, including increased regulatory T-cells and decreased autoimmune markers [29].

Immunomodulatory Mechanisms:

- Studies suggest that MSCs modulate the immune response in alopecia areata by inducing regulatory T-cells, reducing pro-inflammatory cytokines, and inhibiting autoreactive T-cell activity [25], [26], [28], [29].

4.3 Functional Outcomes and Patient-Reported Measures

Across studies, the most commonly reported outcomes include:

- **Increased hair density:** Measured as the number of hairs per square centimeter, with improvements ranging from 10% to over 50% depending on the study and treatment protocol [37], [42], [43], [44].
- **Increased hair diameter:** Reflecting a shift from miniaturized (thin, short) hairs to terminal (thick, long) hairs, a key marker of follicle health [37], [46].

- **Improved patient satisfaction:** Many studies report high levels of patient satisfaction and improvements in quality of life measures [43], [45].
- **Photographic and dermoscopic improvements:** Objective assessments by clinicians using standardized photography and dermoscopy (scalp imaging) have documented visible improvements in hair coverage and follicle density [42], [44].

4.4 Biomarker Changes

Some studies have investigated molecular and cellular changes associated with MSC-based therapies:

- **Activation of growth-promoting pathways:** Including Wnt/β-catenin, PI3K/AKT/mTOR, and RAS/ERK signaling [32], [33], [34], [47].
- **Increased expression of growth factors:** Such as VEGF, HGF, and IGF-1 in the follicle microenvironment [18], [19], [20].
- **Immune modulation:** Changes in T-cell populations and cytokine profiles in alopecia areata patients [29].

4.5 Response Variability

It is important to note that **response to MSC-based therapies varies between individuals**. Factors that may influence outcomes include:

- The type and severity of alopecia
- The duration of hair loss
- The specific MSC product used (cells vs. conditioned media vs. exosomes)
- The route of administration (intradermal injection, intravenous, topical)
- The dose and frequency of treatment
- Individual patient characteristics (age, genetics, overall health)

Not all patients respond equally, and some may experience minimal or no benefit [48].

4.6 Limitations of Current Evidence

While the findings to date are encouraging, the evidence base has important limitations:

- **Small sample sizes:** Most studies involve fewer than 50 patients, limiting statistical power and generalizability [28], [42], [44], [45].
- **Lack of large, multicenter randomized controlled trials (RCTs):** Few studies meet the highest standards of clinical trial design [3], [48].
- **Short follow-up periods:** Many studies report outcomes at 3 to 6 months, and longer-term data on durability of response are limited [37], [43], [44].
- **Heterogeneity in treatment protocols:** Differences in cell source, preparation methods, dosing, and administration routes make it difficult to compare results across studies [38], [48].

- **Publication bias:** Positive results are more likely to be published, which may overestimate treatment effects [48].

4.7 Ongoing Research Directions

The field is rapidly evolving, with several ongoing clinical trials and research initiatives:

- **Randomized controlled trials of hUC-MSC-derived exosomes:** A protocol for a phase I/II trial in young males with AGA has been published, aiming to establish optimal dosing and compare efficacy to minoxidil [3].
- **Combination therapies:** Studies are exploring the synergistic effects of MSC-based products with conventional treatments like minoxidil and PRP [43].
- **Mechanistic studies:** Researchers are working to better understand the molecular pathways and cellular interactions that mediate therapeutic effects [32], [33], [47].

Long-term follow-up studies: Efforts are underway to assess the durability of response and the need for maintenance treatments [48].

5. Safety Profile: What the Research Shows

Safety is a paramount concern in any medical treatment, and the safety profile of MSC-based therapies for alopecia has been a focus of clinical research.

5.1 Overall Tolerability

The majority of studies report that MSC-based and exosome-based interventions for alopecia are **well tolerated**, with a favorable safety profile [37], [42], [43], [44], [45].

5.2 Common Mild Adverse Effects

The most frequently reported adverse effects are mild and transient, including:

- **Injection site reactions:** Mild pain, redness, swelling, or bruising at the site of intradermal or subcutaneous injections. These typically resolve within a few days [44], [45].
- **Temporary shedding:** Some patients experience a brief increase in hair shedding shortly after treatment, which is thought to reflect the transition of follicles from resting to growth phase. This is generally followed by regrowth [49].
- **Mild headache or discomfort:** Occasionally reported, particularly with systemic (intravenous) administration [29].

5.3 Serious Adverse Events

Across the reviewed literature, **no serious adverse events** have been consistently reported in studies of MSC-based therapies for alopecia [28], [37], [42], [43], [44], [45]. Specifically:

- No cases of infection, tumor formation, or severe allergic reactions have been documented in the context of alopecia treatment.
- Laboratory parameters (blood counts, liver and kidney function) have remained stable in studies that monitored them [37].

5.4 Route-Specific Considerations

The safety profile may vary depending on the route of administration:

- **Intradermal/subcutaneous injection:** The most common route for alopecia treatment. Risks are primarily limited to local injection site reactions [44], [45].
- **Intravenous (IV) administration:** Used in some systemic approaches (e.g., for alopecia areata). Generally well tolerated, though there is a theoretical risk of infusion reactions or systemic effects. Close monitoring is recommended [29].
- **Topical application:** MSC-conditioned media or exosomes applied to the scalp. This route is minimally invasive and associated with very few adverse effects [10], [43].

5.5 Long-Term Safety

Long-term safety data are still limited, as most studies have follow-up periods of 6 to 12 months. Ongoing surveillance and longer-term studies are needed to fully characterize the safety profile over years of use [48].

5.6 Honest Framing: Encouraging but Limited Data

While the safety data to date are encouraging, it is important to acknowledge that the evidence base is still evolving. The number of patients treated in clinical studies remains relatively small, and rare adverse events may not yet have been detected. As with any investigational therapy, patients should be informed of both the known safety profile and the areas of uncertainty [48].

At Auragens, we prioritize patient safety through rigorous quality control, adherence to AABB standards, comprehensive informed consent, and close clinical monitoring throughout the treatment process.

6. What to Expect Next at Auragens

If you are considering hUC-MSC therapy for alopecia, here is what you can expect during your journey with Auragens:

6.1 Comprehensive Consultation

Your first step will be a thorough consultation with our medical team. During this visit, we will:

- Review your complete medical history, including the type and duration of your hair loss, previous treatments, and any underlying health conditions.
- Conduct a detailed scalp examination, which may include dermoscopy (magnified imaging of the scalp and hair follicles).
- Discuss your goals, expectations, and concerns.

6.2 Medical History and Goals Review

We will take the time to understand your unique situation. This includes:

- The impact of hair loss on your quality of life and emotional well-being.
- Your response to previous treatments (if any).
- Any medications, supplements, or other therapies you are currently using.
- Your overall health status and any conditions that may affect treatment eligibility or outcomes.

6.3 Treatment Planning

Based on your consultation, our team will develop a personalized treatment plan tailored to your needs. This may include:

- The type of MSC-based product (cells, conditioned media, or exosomes).
- The route of administration (intradermal injection, topical application, or other).
- The dosing schedule and number of treatment sessions.
- Recommendations for complementary therapies or lifestyle modifications.

6.4 Realistic Expectations

We believe in honest, transparent communication. Our team will provide you with realistic expectations based on the current scientific evidence. This includes:

- The likelihood of response and the range of possible outcomes.
- The time frame for seeing results (typically several months).
- The investigational nature of the therapy and the limitations of current data.
- The possibility that you may not respond to treatment.

6.5 Personalized Schedule and Logistics

We will work with you to create a treatment schedule that fits your life. This includes:

- Scheduling treatment sessions at convenient times.
- Coordinating with your local physician, if needed.
- Providing clear instructions for pre- and post-treatment care.
- Arranging follow-up visits to monitor your progress.

6.6 Evidence-Based Discussion

Throughout your care, we will engage you in evidence-based discussions about your treatment. We encourage you to ask questions, express concerns, and be an active partner in your care. Our goal is to empower you with knowledge so that you can make informed decisions that align with your values and goals.

7. Next Steps

7.1 Who May Consider Consultation

You may be a candidate for consultation at Auragens if you:

- Have been diagnosed with androgenetic alopecia (male or female pattern hair loss), alopecia areata, or another form of alopecia.
- Have not achieved satisfactory results with conventional treatments (minoxidil, finasteride, corticosteroids, PRP, etc.).
- Are seeking an innovative, regenerative approach to hair restoration.
- Are in overall good health and able to participate in a treatment protocol.
- Understand that MSC-based therapy for alopecia is investigational and that individual results may vary.

7.2 Questions to Consider

Before your consultation, you may wish to reflect on the following questions:

- What are my primary goals for treatment? (e.g., slowing hair loss, increasing density, improving appearance, enhancing quality of life)
- What treatments have I tried in the past, and how did I respond?
- What are my expectations, and are they realistic based on the current evidence?
- What are my concerns about safety, cost, and time commitment?
- How important is it to me to pursue a cutting-edge, regenerative approach, even if the evidence is still emerging?

7.3 Importance of Physician Coordination

We strongly encourage you to involve your primary care physician or dermatologist in your decision-making process. Coordinating care ensures that:

- All aspects of your health are considered.
- Your treatment plan is integrated with any other therapies you are receiving.
- Your physicians can monitor your progress and address any concerns that arise.

At Auragens, we are committed to collaborative care and will communicate with your healthcare team as needed (with your permission).

A Message of Hope

Hair loss is a deeply personal journey, and we understand that it can be challenging—physically, emotionally, and socially. If you are reading this guide, you have already taken an important step: seeking information, exploring options, and advocating for yourself.

At Auragens, we are inspired by the advances in regenerative medicine and the growing body of research on mesenchymal stem cells and their potential to support hair follicle health. While we are honest about the investigational nature of these therapies and the need for more research, we are also hopeful. The science is advancing, and early clinical findings suggest that MSC-based approaches may offer new possibilities for patients who have not found relief with conventional treatments.

We want you to know that you are not alone. Our team is here to support you with compassion, expertise, and a commitment to the highest standards of care. We believe that informed decision-making—grounded in science, guided by empathy, and tailored to your unique needs—is the foundation of good medicine.

Whether or not hUC-MSC therapy is right for you, we encourage you to continue exploring your options, asking questions, and working closely with your healthcare team. Hope is not about guarantees; it is about possibility, partnership, and the courage to pursue what matters most to you.

We look forward to the opportunity to meet you, listen to your story, and explore together how regenerative medicine may support your journey toward healthier hair and renewed confidence.

The Auragens Patient Care Team

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