



## Advanced Stem Cell Exosome Therapy for Hair Restoration

Exosome Therapy involves using exosomes, small vesicles that are naturally produced by Stem Cells, to deliver therapeutic molecules to specific cells in the body. These exosomes contain a range of biomolecules, including proteins, nucleic acids, and lipids, that can be used to target specific cells and elicit a desired response.

### **What are Exosomes?**

Exosomes are extracellular vesicles that are produced by Mesenchymal Stem Cells [MSC Exosomes] which are involved in cell communication. Other cells react to the messaging signals from the exosomes and will change their behavior accordingly. Scientists are now able to isolate and deliver these beneficial signalers directly rather than the stem cells themselves.

The unique benefit of these exosomes is that they are placenta stem cell-derived and bring a wide array of growth factors. Because they're so small and nimble, exosomes can remain hidden in the bloodstream, and carry multiple doses of proteins across barriers that cells are not able to cross.



### **What is Exosome Therapy for Hair Loss?**

By injecting exosomes and growth factors, it has been clinically shown to help regenerate and regrow hair as a treatment for hair loss in both men and women in the earlier stages of hair loss. Exosomes promote tissue Regeneration and Repair, modulate the immune system, and reduce inflammation. Exosome therapy could rejuvenate the body and combat age-related diseases, can stimulate new tissue growth, reduce scar tissue formation, and modulate the immune response to promote wound healing

These small cellular products contain both RNA and, even of greater import, mRNA; the initiator of protein manufacturing. These protein building blocks act as signalers for bodily functions, such as coagulation, as well as cellular growth to facilitate certain bodily functions. Near all exosomes have a number of useful growth factors/signalers:

- MIP-1: A recruiter of mononuclear cells
- VEGF: A stimulator to encourage blood vessel formation
- SCF: An encourager of stem cell and melanocyte growth
- FGF: A growth factor that signals cells to encourage biological development
- TGFβ3: A gene variant that, among other things, converts inflammatory T Cells into anti-inflammatory T-Cells

Preclinical studies indicate that the naturally occurring proteins, messenger RNA and microRNA within MSC Exosomes improve the function of aging, injured or diseased cell, tissues and organs. As an ideal vehicle for delivery, the lipid membrane of exosomes serves not only to protect exosome proteins and RNA from degradation, but also allows exosomes to reach cells in parts of the body that many drugs cannot. For example, exosomes are able to cross the blood-brain barrier and can penetrate solid tissue masses like the thyroid or tumors. Optimizing these properties and the contents of MSC exosomes developed for specific clinical indications may become the future of medicine.

Specific Actions of MSC Exosomes Include:

- Anti Inflammatory
- Anti-oxidant
- Reverse tissue degeneration
- Optimize tissue remodeling
- Improved blood supply to damaged tissues
- Regenerate collagen
- Reactivates dormant gene expression
- Modulates activity of immune cells to promote auto immune disease

Benefits from Amino Acid Fortification:

Patients also benefit from our Exosomes as fortified with the following skin enhancing amino acids:

- |                 |                 |
|-----------------|-----------------|
| • Histidine     | • Alanine       |
| • Lysine        | • Aspartic Acid |
| • Leucine       | • Glutamic Acid |
| • Phenylalanine | • Arginine      |
| • Valine        | • Glycine       |
| • Isoleucine    | • Proline       |
| • Methionine    | • Serine        |
| • Threonine     | • Tyrosin       |
| • Tryptophan    |                 |

The Best of these Amino Acids for Skin Care Include:

- Glutamic acid adds moisture to skin cells and maintains pH balance

- Aspartic acid is incredibly hydrating
- Glycine encourages collagen synthesis in the body and skin
- Arginine is a key amino acid for skin repair
- Lysine strengthens the skin
- Histidine has a soothing effect on cells
- Proline has powerful anti-aging properties

### **How Many Treatment Sessions do I Need?**

Our experience has shown that the best results are achieved with a series of 3 Treatments:

- Your Provider will help you determine the best course of action on the dose and frequency of Exosomes for the best results. All of our therapies are customized to each individual patient.
- We recommend 3 PRP scalp injection sessions with 3 Exosome upgrades over 3 months.
- Consider adding a topical GRO product as well for 6 months.
- Re-evaluate results after 6 months.
- Exosomes can also be administered or targeted ala carte with 1 TRILLION Exosomes per session.

### **How Long does it Take to see Results from Exosome Therapy for Hair Rejuvenation?**

Exosome therapy may begin promoting natural hair growth in as little as two to three months. New hair growth can continue over the course of a year, with the most noticeable results usually being seen six months after treatment has been administered.

### **How Long do I have to wait before another session of exosome therapy for hair loss?**

We typically recommend waiting 3 to 6 months after the last treatment to re-evaluate and before potentially performing another treatment of exosome injections if it is necessary.

### **OMC Uses the Highest Quality MSC Exosomes Available:**

We use only the very best and most advanced exosome products which are procured and processed in the United States. Exosomes are released naturally from mesenchymal stem cells, and MSCs have the highest amount of exosomes out of any cell.

We selected MSC Exosomes because they:

- Have 1 trillion microvesicles with biologically active exosomes
- Only exosome product with RNA
- Only commercially available MSC Exosomes
- Safely produced from master MSC Bank from pre-covid, single donor, placental source.

We offer a pure MSC exosome product that contains proteins, enzymes, growth factors, and exosomes derived from mesenchymal stem cells (MSCs). They are an isolated, cell-free, placental mesenchymal stem cell-derived exosome re-suspended in 0.9% normal saline; every lot is tested for sterility and endotoxin and is quantified AND qualified via protein concentration, dSTORM visualization, NanoSight sizing, mRNA sequencing, Mass Spectrometric protein sequencing, flow cytometric surface marker testing, and visual

purity assay for the world's first reproducible pure exosome manufactured to strict FDA drug and vaccine production guidelines.

Our therapy is unique with its unmatched RNA content, the potency of our selected formula creates outcomes unseen by others.

### **How Many Exosomes are Injected in Each Treatment?**

For hair loss, we utilize one TRILLION exosomes per session. We have found while our competitors only use a fraction of this, we see superior results for less cost with our MSC Exosome product. We offer our patients the highest quality exosomes available to commercial medicine.

### **How Long do Exosomes Last in Your Body?**

Exosomes are present 6 to 8 months after the final treatment.

### **Do Exosomes Prolong the Hair Growth Cycle?**

Yes, exosomes do prolong the hair growth cycle. Hair follicles stuck in the telogen phase (resting phase) convert to the anagen (growth phase) and prolong the growth cycle.

This is of critical benefit - as with every part of our body - hair follicles age. Different than many cells, however, follicular cells age with each cycle of growth. It typically requires decades, but as follicular cells enter and leave each phase they begin to change. Miniaturization, or the shrinking and growing brittleness of hair strands, initiates. From there, without treatment, hair strands continue shrinking after each telogen phase until growth ceases in the complete.

Many hair care products and treatments help prolong hair growth. None though produce the results we see with or are as capable as exosomes. The hair growth cycle remains intact longer while hair strands become thicker and healthier.

### **Can the patient take NSAIDS?**

No. It is ideal for the patient to stop taking NSAIDS for 72 hours prior to the injection and for 4 days after. NSAIDS will NOT destroy the injected cells but they can potentially lessen the effects.

### **Are there any Contraindications for Exosome Injections?**

There are no contraindications for exosome injections.

### **What Preparation do I need for the day of the Procedure?**

Patients are advised to:

- Drink a lot of fluid one day prior to the procedure
- Have breakfast the morning of their procedure
- Avoid Aspirin, Naproxen, Ibuprofen and other NSAIDs 3 days prior to the procedure and 3 weeks after the procedure.

### **Are there any Restrictions after the Procedure?**

The only restriction is to avoid aspirin, naproxen, ibuprofen, and other NSAIDs for 3 weeks following the procedure. Following the procedure, you may go home and shower. Be aware the treated area may be tender. Many patients return to work or their daily routine the same day.

Post Care for Exosome Injection:

- No ice on the area for 72 hours
- No anti-inflammatory drugs for 72 hours (Ibuprofen, Advil, Naproxen, Aleve).
- Patients can use Tylenol and heat.
- Contact the office right away if the area becomes red hot and swollen.

### **Can I Combine Exosome Therapy with other Hair Loss Modalities?**

Absolutely! We recommend patients use our topical Gro Products in conjunction with exosome therapy for hair loss.

### **Can Exosomes be used for Alopecia Areata?**

Yes. Clinical and anecdotal results have shown tremendous efficacy for when exosome therapy is utilized.