

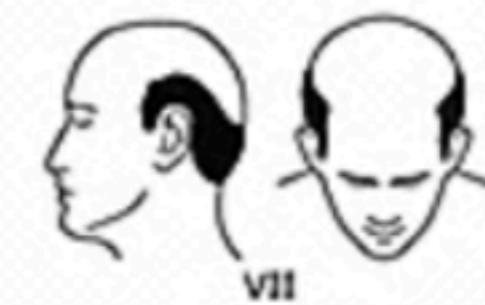
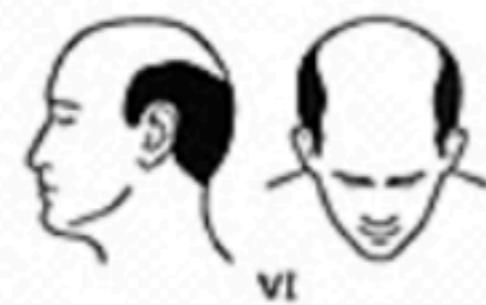
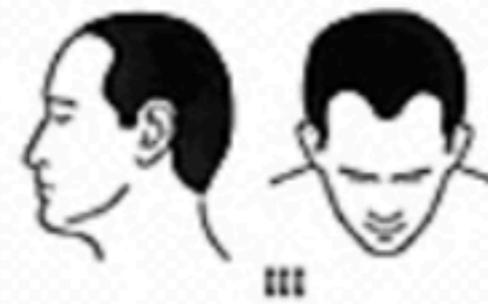


Hair Restoration

Dr. Bertica Rubio

Hair loss can be a chronic, progressive condition. Based on family history, and onset of thinning the patient has an idea of how fast he will get to the next stage if there is no intervention. This is the case for testosterone related male pattern hair loss primarily

Norwood Hamilton classification system



Diagnosing the cause:

- **Metabolic**
 - Thyroid disease
 - Elevated Prolactin
- **Autoimmune disorders**
- **Physiologic**
 - Stress
 - Post surgical
 - Post partum
 - Post weight loss
- **Nutritional poor GI absorption**
- **Gastric bypass \sleeve**
- **Unhealthy scalp**

Diagnostic Tools

History

Life Style
Nutrition
Social

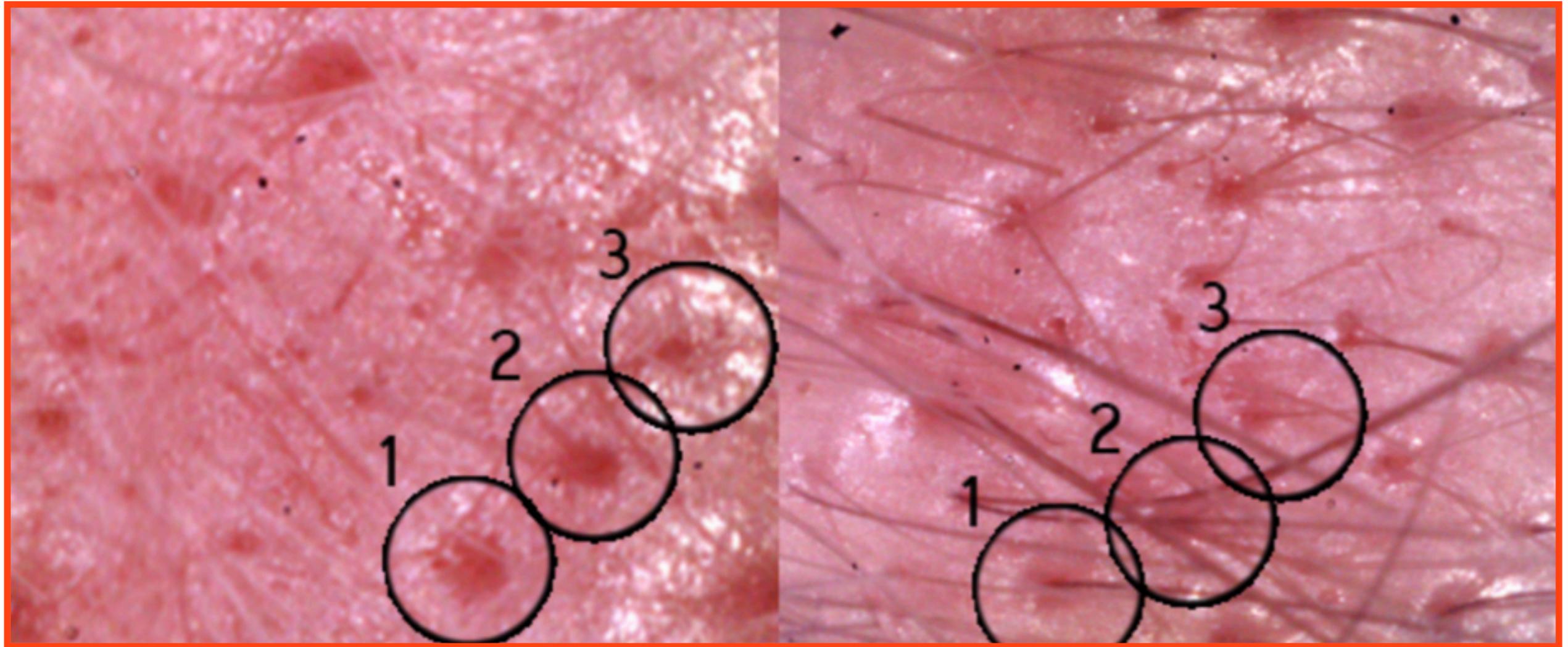
Laboratory

Thyroid studies
Prolactin levels
Sex hormone panel
Inflammatory markers

Basal temperature

Scalp evaluation

Hand-Held Scope



Before

2 Weeks Later

Treatment protocol

Start with an effort to improve the health and nutrition.

- **Multivitamines**
- **Omega 3**
- **Resveratrol**
- **Decrease processed foods**
- **Add raw fruits and veggies**

Share with the patient the scope images to help visualize the problem

Show the miniaturization and inflammation to give hope and improve compliance and PATIENCE

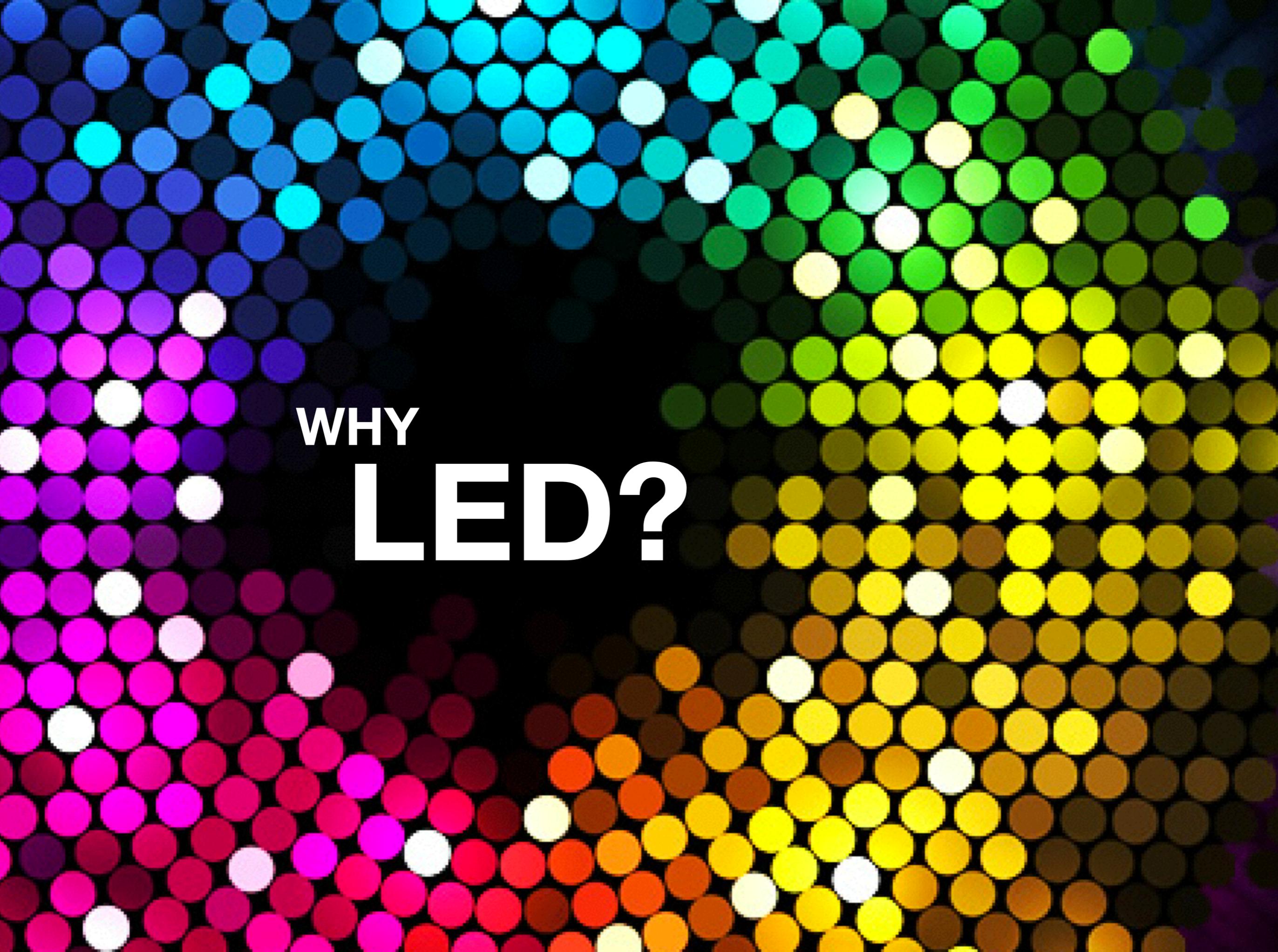
Stress the need for restoration as the foundation. (lawn ,chicken soup story)

Treatment Protocol Continued

Design a Program that corrects baseline issues and improves the health of body and scalp. Stress PATIENCE and give HOPE.

- 1) Prepare the scalp (sunscreen, sulfites)
- 2) Introduce hair specific growth factors
- 3) Microneeling
- 4) PRP, Amnio
- 5) LED light

This protocol should be followed for 12-16 weeks prior to transplant .Important to improve the health of both the donor hairs and the recipient scalp.



WHY
LED?

The physical effects of LED at the cellular level have been well studied.
The key points are:

- **Correct wavelength**
- **Duration of treatment**
- **Proximity to the source**

The mechanism of action occurs by the activation of mitochondria and increase of ATP
Once the photons are absorbed by the body, the biologic change occur specific to the
function of the cell type

WAVELENGTH	Fibroblast Connective Tissue and collagen	Mast Wound healing Anti-inflammatory Anti-edema	Macrophage Digest bacteria and other excess material
Red Light 630-670nm	XXX	XX	XX

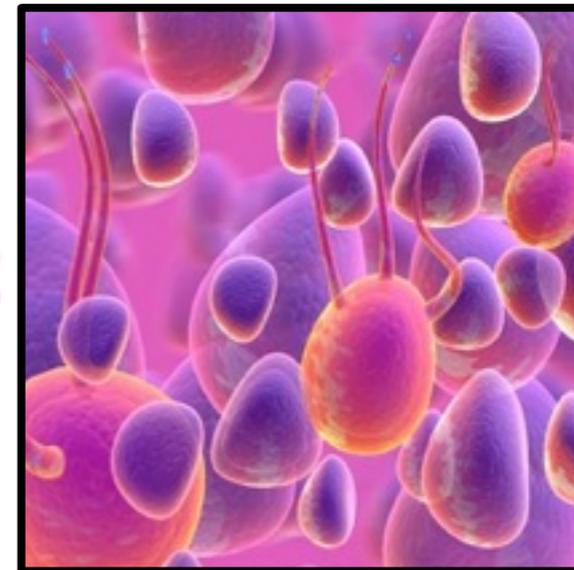
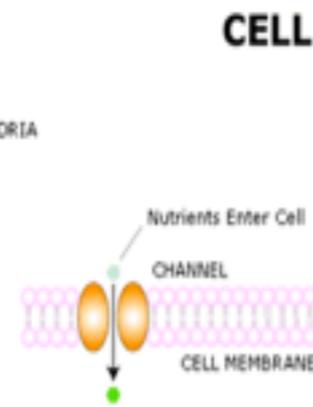
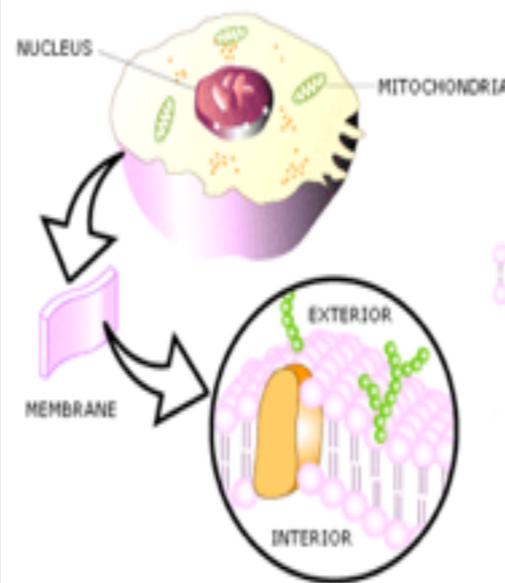
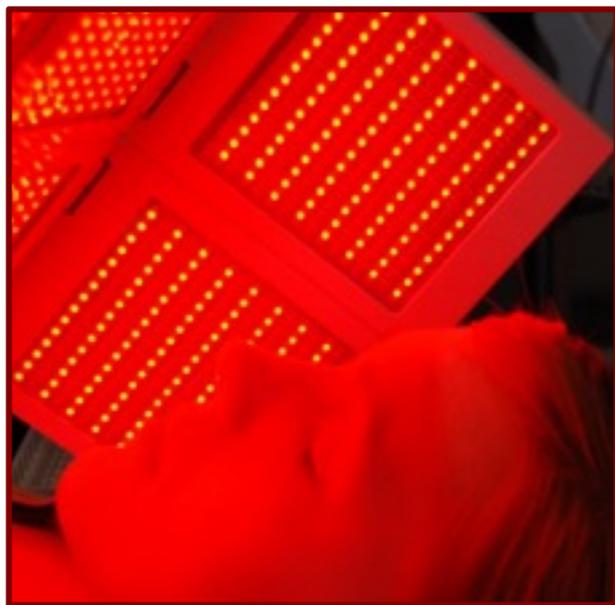
LED has been shown to:

**Repair tissue
Increase moisture
Increase lymphatic flow
Increase detoxification
Increase circulation
Increases endogenous Nitrous Oxide**

This effect of LED on cells is called PHOTOBIO-MODULATION

**Visible red LED at a wavelength of 650-670 nm
has a beneficial effect on hair follicles by
causing nitrous oxide release from scalp.**

Light Therapy Overview



First, the body is exposed to light energy known as photons.

Next, the biological systems within the body come in contact with these photons. Then the photons may either be absorbed, reflected, or pass right through.

Finally, if the photons are absorbed, the body uses the photon energy to produce biological changes such as stimulating ATP to produce more collagen and elastin.

Process of Red Light Therapy

STEP 1-

Red light energy is absorbed primarily by the blood vessels within the dermis and subcutaneous tissue layers of the skin.

STEP 2-

Once absorbed, the red light stimulates the mitochondria within the cells and begins to convert the photon energy into biochemical energy known as ATP.

STEP 3-

A boost in ATP production increases cellular activity and mitosis which diminishes inflammation and helps to restore normal cellular function.



[Lasers in Surgery Medicine 46: 601 - 607 \(2014\)](#)



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Before

After 120 Days



Before

After 120 Days



Before

After 120 Days



Before

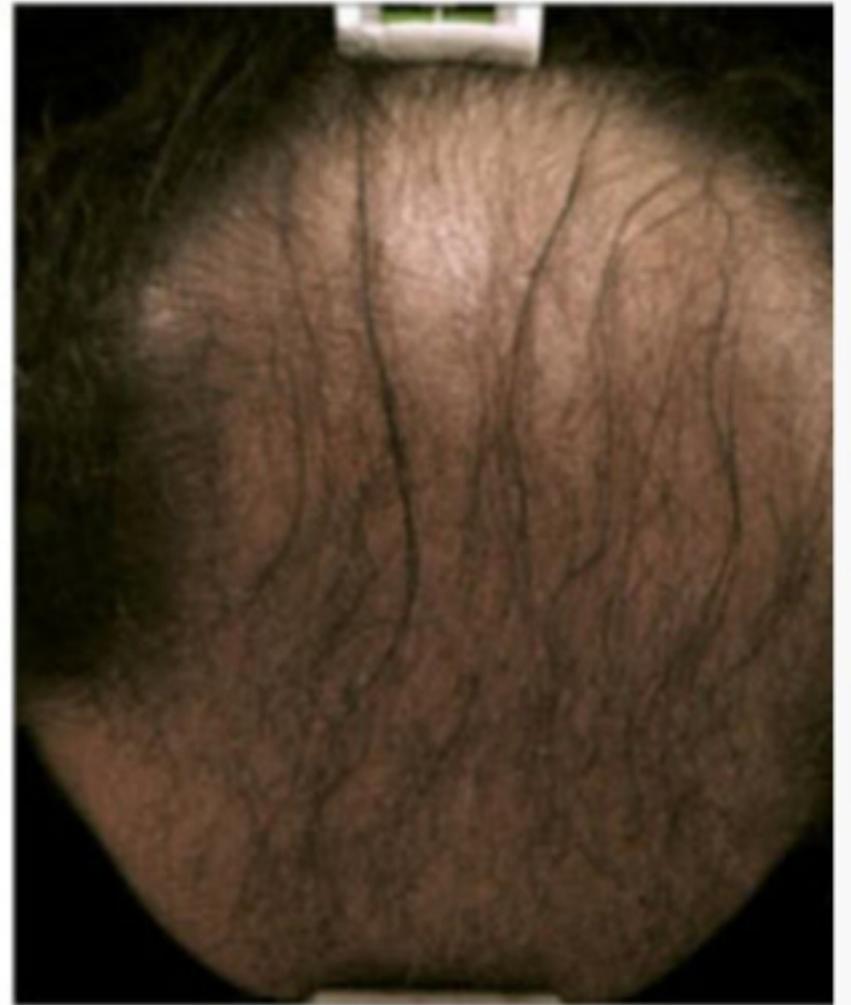
After 120 Days



Week 0



Week 8



Week 15



Before



After 15 Weeks

Conclusion

Hair loss is a progressive process . Except in acute post stress situations it is GRADUAL and often reversible.

The key to hair restoration is to arrest the progression and maintain the recovery achieved. Restoration methods need to be continued long term after transplant as well.

Conclusion

An area of great confusion is the term FUE.

It is critical to educate your patients .It is equally essential for you to know how the FUE's are obtained.

I am a firm proponent of non surgical FUE extractions. As a patient advocate I ask you to preferably refer patients to centers that do not use the antiquated strip method.

I honestly believe based on research and clinical experience that strip is not the best technique and carries many short and life long sequela that are avoided in the modern non surgical transplant approach now widely used.