

# The Physiological Medical Letter

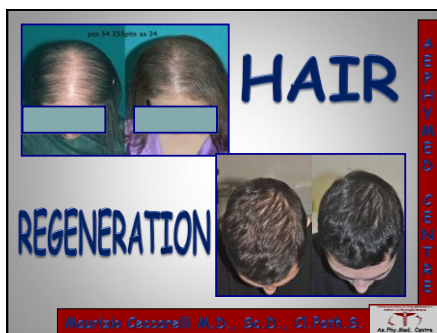
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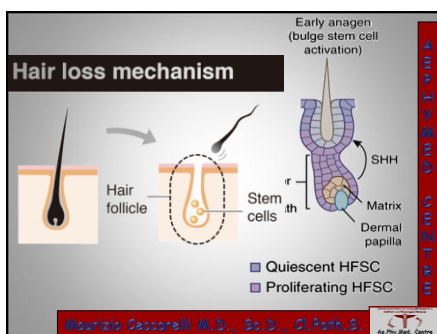
N° 3

## HAIR REGENERATION

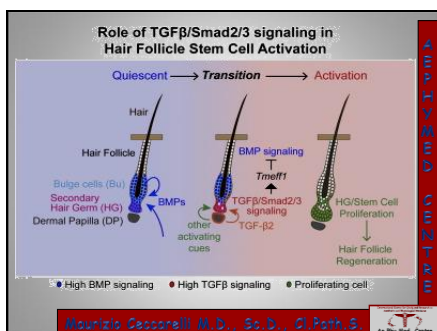
*Maurizio Ceccarelli & Coll.*



Today it is possible to make a real hair regeneration, normalizing the density of the hair.



When the hair falls, leaves, in its implantation zone, quiescent stem cells from which a new hair can be formed.



TGF beta, inflammatory cytokine with chemotactic and proliferative function, stimulates the differentiation of stem cells.

### Hair Regeneration



**Stem Cells Activation**  
**Platelets Derived Growth Factors**

Maurizio Capparelli M.D., So.D., O.Path.S.

On these bases, the new hair regeneration protocol provides the initial differentiation of quiescent stem cells and subsequent proliferation and metabolic activation of these with platelet growth factors. .

### Stem Cells Activation

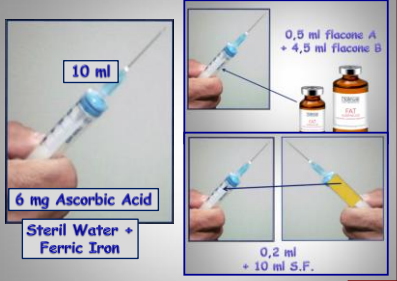
Time 0



**0,34 Mmoles of Ascorbic Acid/Fe<sup>+3</sup>**

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At time 0 (start of treatment) we stimulate the quiescent stem cells with 0.34 mMol of ROS, using an ascorbic acid solution in ferric iron.



10 ml

6 mg Ascorbic Acid

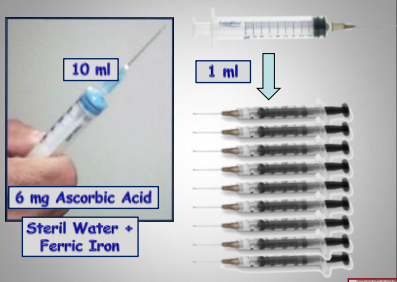
Steril Water + Ferric Iron

0,5 ml flacone A + 4,5 ml flacone B

0,2 ml + 10 ml S.F.

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We prepare the classic apoptotic solution (10 ml ferric iron + 300 mg ascorbic acid) and take 0.2 ml, diluting with 10 ml of physiological solution.



10 ml

6 mg Ascorbic Acid

Steril Water + Ferric Iron

1 ml

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Prepared the stem cell differentiation solution, we pass the liquid into 1 ml syringes to facilitate the subsequent injection into the scalp.

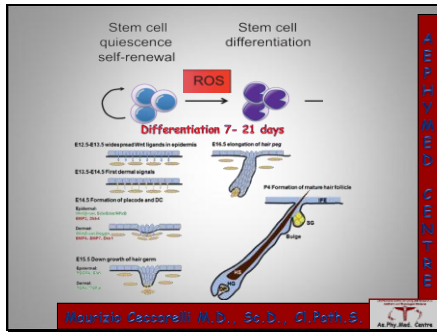


30 G 4 mm

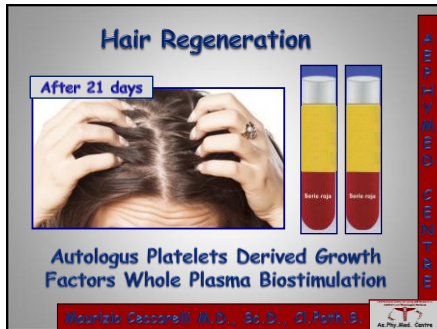
Quiescent Hair Stem Cells Activation

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We inject 0.1 ml of solution per point, on carpet, with a 4 mm needle, perpendicular to reach the papillae stem cells.



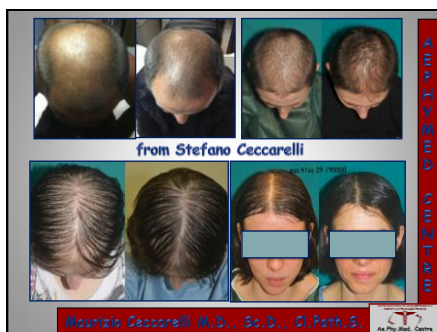
The differentiation stimulus, given by the correct ROS concentration, allows the stem cell differentiation, which occurs within 21 days.



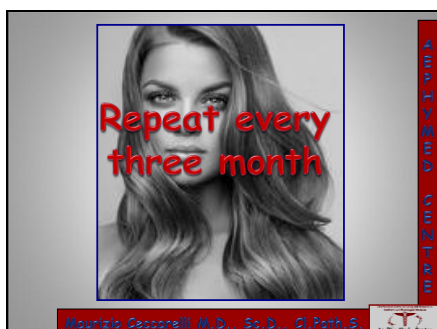
After 21 days, the patient returns for the second phase of the treatment. We take the amount of blood needed to treat the areas affected by alopecia with full platelet plasma.



We inject 0.1 ml of platelet plasma, on carpet, with a 4 mm needle, perpendicular to reach the papillae stem cells.



The treatment, repeated, always alternating the two solutions, allows the neoformation and growth of new hair.



The frequency of treatment is once every three months.

