

## Dr. Jimenez Fellowship Training Program

The one- year Hair Restoration Surgery Fellowship that I can offer will take place in my Clinic (Mediteknia Dermatology and Hair Transplant Clinic) in Las Palmas de Gran Canaria, Canary Islands, Spain. It has been developed to meet the requirements from the ISHRS. It consists of the following components:

1. Surgical Training in HRS
2. Research Lab Work
3. Didactic / Journal Club

### Surgical training in HRS

The surgical exposure will be progressive, step by step, and will be divided in milestones (degrees of competency). In each milestone, the fellow will learn and practice a specific number of surgical related skills. At the end of each milestone the fellow is expected to have achieved competency in all those learned skills. During the last milestone, which last 4 months, the fellow will practice all skills that have been learned before. The fellow is expected to be able to work independently by the end of the fellowship.

**Milestone 1: *month 0 to month 2 (Surgical planning/ candidate selection, Hairline, Anesthesia, Post-operative care)***

- The fellow will participate in surgical planning and candidate selections
- Fellow will evaluate the donor area for harvesting: safe donor area, elasticity, FU density
- Fellow will start drawing hairlines
- Fellow will manage postoperative wound care
- Fellow will start anesthetizing patients both in the donor and recipient areas

**Milestone 2: *month 2 to month 4 (Microscopic Dissection, Suturing, Placement with implanters)***

- The fellow will start dissecting grafts under the stereomicroscope
- Fellow will start closing the donor strip wound with sutures and staples
- Fellow will start placing with implanters

**Milestone 3: month 4 to month 6 (FUE and FUT Harvesting)**

- The fellow will start performing simple strip excisions with supervision
- The fellow will start harvesting FUE grafts with supervision

**Milestone 4: month 6 to month 8 (Recipient site design; Different types of graft placement)**

- The fellow will make recipient sites (premade sites)
- The fellow will learn other placement techniques: stick and place
- The fellow will continue to practice with implanters
- The fellow will continue to practice FUE extractions and strip harvesting technique

**Milestone 5: month 8 to month 12 (Practice/improvement of surgical skills)**

- At this time the fellow should have been exposed to all aspects of hair transplantation and now has 4 months to practice surgical skills under supervision
- By the end of this milestone, the fellow is expected to work independently and be able to perform a hair transplant procedure by himself

## Research Lab Work

Our Clinic has its own Hair Lab, called “*Mediteknia Skin & Hair Lab*” equipped with an incubator for HF organ culture, a cryostat for histological sectioning, a laminar flow bench, stereomicroscopes, optical microscopes, and a - 80° freezer for tissue storage.

Our fellowship has a strong research component and the applicant should be a person with interest and commitment to research, both basic and clinical. **Lab time may take around 30%** of the time of this fellowship. Therefore, the fellow is expected to spend two days a week time in the lab doing research related work, first under supervision and later independently.

The fellow is expected to **choose one specific project in hair biology**, which will be supervised by Dr. Jimenez as well as by other members or collaborators of our lab.

***Research techniques and lab skills that the fellow will be exposed to and can master include:***

- **How to culture hair follicles ex-vivo**
- **How to prepare solutions for the culture media**

- How to freeze hair follicles for storage
- How to section hair follicles in the cryostat for histological and immunohistochemical analysis
- How to Isolate and culture dermal papillae
- How to perform immunohistochemical stainings with a variety of different antibodies relevant in hair biology (CK15, CD34, Ber-EP4, Versican, alfa SMA, CD10, Tunnel, Ki67, Sox 2, etc.)
- Photographic imaging of hair follicles
- Evaluation and statistical analysis of research data
- Manuscript writing

***Other unique opportunities research opportunities:***

1. **Visiting other Hair Biology Labs:** Due to our close collaboration with Professor Ralf Paus in several research projects, it is possible that the fellow might take part of one of these projects. In such a case, the fellow might have the opportunity of spending a short period of time (two weeks) at the Hair Biology Lab of Professor Ralf Paus in Münster. Germany.

***Publications and presentations at meetings:***

1. The fellow is expected to **publish one paper in a peer review journal** (based on his own research project) and **one article in the Hair Transplant Forum**
2. The fellow is expected to send an abstract to the **Annual ISHRS Meeting**.

## **Didactic / Journal Clubs:**

At the beginning of each week, the director of this fellowship will assign the fellow a hair related topic to review and study. At the end of that week, there will be a dedicated time to review and discuss that particular topic and evaluate the fellow's competence. We will try that the selection of these topics will coincide with the surgical milestone that the fellow is taking. Some of the topics may take several weeks to study and discussions, while others will need more practical skills and less theoretical discussions.

These discussions will consist of, but not be limited to, the following topics:

1. Introduction and history of Hair Restoration Surgery

2. Anatomy of the Follicular Unit and Hair Follicle
3. Physiology of the Follicular Unit and Hair Follicle
4. How to clinically diagnose correctly Hair Disorders:
  - a. Using a dermatoscope for diagnosing hair diseases
  - b. Male and Female pattern hair loss
  - c. Clinical clues of scarring alopecias
    - i. LPP
    - ii. FFA
    - iii. Others
5. Medical therapies for Male and Female pattern hair loss
  - a. Minoxidil
  - b. Finasteride
  - c. Antiandrogens in FPHL
  - d. The role of cell-based therapies including PRP
  - e. Other (LLLT, etc.)
6. Medical therapies for primary scarring alopecias
7. Histological patterns in Hair loss disorders
  - a. How to do a correct biopsy for hair diseases
  - b. Histological picture of Male and Female pattern hair loss
  - c. Histology of LPP and FFA
8. Tools to measure Hair Density, FU density, Hair Loss, Hair Growth:
  - a. Digital photomicrographs, Phototrichograms, Hair Check, Wash Test, Pull test, etc.
9. Patient selection for HRS
  - a. Criteria for good and bad candidates
10. Planning process of a HT procedure
  - a. Criteria to plan a certain number of FU grafts
  - b. Criteria to plan a certain number of sessions
  - c. Measurement of the recipient area
11. Donor area selection
  - a. Evaluation of width and length of the strip
  - b. Evaluation of miniaturization
  - c. Evaluation of the scalp elasticity
  - d. Evaluation of donor FU and hair density
  - e. Evaluation of safe donor area for FUE
12. Principles of anesthesia in HRS
  - a. Pre-op medications

- b. Regional Blocks and Ring Blocks
  - c. Tumescence anesthesia with microcannulas
- 13. Principles of Hairline and Crown design
  - a. Male hairlines in frontal hairline and crown
  - b. Female hairlines
- 14. Hair Graft Survival
  - a. Factors that influence hair graft growth
  - b. Holding solutions
- 15. FUT (Strip Follicular Unit Transplantation)
  - a. Donor strip harvesting and microscopic dissection
- 16. FUE
  - a. Sharp, dull, hybrid punches
  - b. Manual and motor devices
  - c. Robotic FUE
- 17. FUT vs FUE
  - a. Advantages and disadvantages
  - b. Preferred indications
- 18. Recipient site
  - a. Design
  - b. Different tools to make recipient sites
  - c. Different options: premade sites, stick and place, implanters
- 19. Reconstruction Hair Restoration
  - a. HT in scars
- 20. HRS in special areas
  - a. Eyebrows
  - b. Beard
- 21. Body Hair Transplantation
  - a. Beard to Scalp
  - b. Harvesting other areas
- 22. Complications: Management / Prevention
- 23. Emergencies in HRS and how to manage high risk patients