Follicular Units: Recipient Site Preparation

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Creation of recipient sites is important to achieve excellence in hair transplantation. The goals are to maintain the integrity of the scalp surface by creating as little damage as possible and to use as few grafts as possible to achieve the desired results. Meticulous spacing is necessary to divide the scalp efficiently to reflect light in such a way as to give the impression of greatest density.

INSTRUMENTS

He uses the narrow micro surgical sharpoint (15°, 22.5°, 30°, 45°) which create the ideal linear incision without dilation of the scalp tissue.

The advantage of using incisions/punches to insert F.U are:

1. No net loss of scalp tissue, maintaining vital vascular, neural, and microscopic anatomy necessary for graft re-growth
2. Minimal damage to the skin and subcutaneous tissue - with resultant reduced or absent scarring and color change
3. The potential for perfect graft fit if grafts are properly prepared and placed
4. Less chance for elevation and depression of healed grafts which maintains scalp integrity after healing
5. No risk of compression if follicular units are placed into incisions
6. Ability to place grafts closer
7. Ability to transplant more grafts in one session
8. Less bleeding
9. If oriented correctly, no violation of Langer's lines
10. Fewer sessions are needed to create satisfactory density
11. Ability to vary length and depth of incision depending on graft size
12. Single use of disposable tools precludes transmission of infectious disease

The disadvantages of using incisions in which to insert follicular units are:

1. Greater skill and experience is needed to insert grafts
2. Smaller grafts must be used which requires microscopic dissection
3. Greater time is needed to insert the grafts
4. A larger staff is usually required to facilitate microscopic dissection and graft insertion.

BEFORE	AFTER
	
	
Patient L., 56 year old - 1111 follicular unit grafts (2000 hairs) transferred in one procedure, before and seven months after surgery.	

Hypodermic needles create a curved, nonlinear incision due to their construction and in the authors experience tend to damage the skin more and create more bleeding. NoKor needles, due to the bulge above the cutting surface, tend to dilate the skin unnecessarily. The narrow microsurgical sharp point scalpels create the ideal linear incision without dilation of the scalp tissue. He then discuss the technical aspects of proper Anesthesia & Hemostasis; Depth of incision which is between 4-6 mm; Angulation (generally he uses a 45° angle); the Number of incisions/cm2: In general the author places (in one session) incisions for single hair grafts in the hairline (0.5 cm width) at a density of 15-25 per square centimeter. Posterior to the hairline, incisions for two hair follicular units with a density of 25-30 (50-60 hairs) per centimeter, and three-four hair grafts averaging 17-20 (51-80 hairs) per square centimeter are made. Dr. Limmer averages 61 (range 38-109) hairs per square centimeter along the first centimeter of the frontal restoration zone after one session of follicular units. After two sessions his average density if 81 hairs per square centimeter Most of the time the density he achieve with one surgery is 20-25 grafts per square centimeter Dr Seager places on average, 32-37 follicular units per square centimeter, with a maximum of 50 FU/sq.cm using a hypodermic needles, primarily a 19 gauge needle. DR Bernstein usually places 20 FLJ/sq. cm to a maximum of 25 FU/sq. cm.

Other than in the hairline, which consists of irregularly spaced single hair grafts in elongated triangles, the author uses a pattern of incisions in a "diamond" distribution as follows

The spacing of grafts is equal between grafts of the same size. This spacing mimics the natural spacing of follicular units in the donor area, which, in general, consists of equal distances between follicular units, which are naturally spaced at one follicular unit per square millimeter. The spaces between the units are fairly uniform also. This would appear to be the ideal pattern with which to replace lost hair. Those who combine follicular units into larger grafts, minigrafts, see this spacing and must logically think it's easier and more efficient, for example, to place a five hair minigraft consisting of a two hair and three hair follicular unit than two individual follicular units. After all the spacing appears to be the same. The problem in this logic is COMPRESSION. Whether placed into an incision or a hole ANYTHING LARGER THAN A FOLLICULAR UNIT WILL BE COMPRESSED. Grafts placed into holes where tissue is removed will be compressed to a greater degree. Compression causes space to be divided unnaturally and results to look unnatural (pluggy).

Both examples contain 21 hairs. The second example appears denser but the division of space is not natural as with compression, THERE IS A HAIR WHERE THERE SHOULD BE A SPACE AND A SPACE WHERE THERE SHOULD BE A HAIR. The natural grid is broken up. The beauty of follicular units placed into appropriately fitted small incisions is the most natural division of space with the production of adequate density. No discernible compression is present.