



# forum

Volume 13, Number 4

July/August 2003

## A One-Year Study of Using Exclusively "Follicular Grouping Grafts" in Specific Areas to Increase Hair Density and Volume during FUT

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**W**hat every hair transplant surgeon wants is to produce a result that satisfies the patient. Producing a satisfied patient requires meeting his/her goals of both naturalness and density. Today, a patient wants to accomplish as much as possible with each session. No one doubts that we can produce natural results with the exclusive use of FUGs (follicular unit grafts);<sup>1,2</sup> however, meeting the patient's expectation of density after a single session is a more difficult task to accomplish, especially if we only use FUGs at 20–30 FU/cm<sup>2</sup>. To create greater density, we have traditionally had one of the following options:

1. **Use larger grafts such as minigrfts<sup>3</sup> to increase hair density.** However, in the initial session, we are still limited in the hair density we can create because we need to use larger incisions placed farther apart. In addition, minigrfts have the potential to be more noticeable than FUGs after the first session.
2. **Use a greater degree of dense packing.** We ultimately need a density of 40 FU/cm<sup>2</sup>, or more, to satisfy the average patient's expectation of hair density. Most physicians place FUGs at densities averaging 25 FU/cm<sup>2</sup>. Higher densities are possible, but

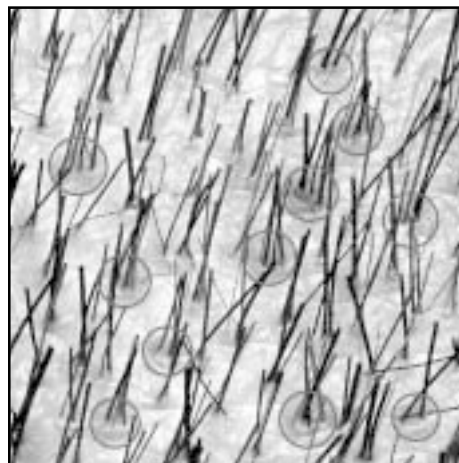


Figure 1. Donor area showing a population of FGs with 4–6 hairs (circles).

this is a process that is both more tiring and technically difficult. In addition, dense packing at a greater density than 30 FU/cm<sup>2</sup> is believed to potentially have lower survival rates. This is especially true in the central area, in older patients, and in smokers. In extreme cases, tissue necrosis can occur.<sup>4,5</sup>

3. **Repeating multiple sessions.** The problem with multiple sessions is that patients would obviously like to have more density, as soon as possible.

### The "Missing Link"

In the evolution of hair restoration,

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## Follicular Grouping Grafts

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we moved from dense minigrrafts to natural FUGs. But there must be something between them that allies density to a natural aspect. So, where is this “missing link”? In my opinion, the use of *follicular grouping grafts* (FGGs) provides a possible solution.<sup>6</sup> This histological structure was first described as “follicular family unit,”<sup>7</sup> consisting of two individual follicular units (FUs) that look close enough to almost belong together (0.2–0.5mm), in contrast to the natural distance of 1mm between FUs (Figure 1). We use this concept to create FGGs and apply it to follicular unit transplantation (FUT).

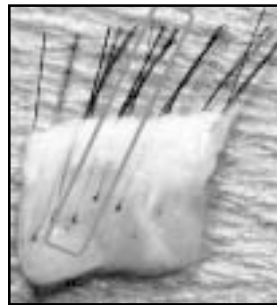
### The Logic of Using Follicular Grouping Grafts

The distance between naturally occurring FUs in the scalp can range from as low as 0.2mm to as high as 1.5mm. As stated earlier, FGs consist of FUs found in the donor area that are spaced very close together. They are spaced so close together that they can easily be mistaken for one follicular unit (Figure 2). In a normal donor scalp, a significant number of FUs may be close enough together to be considered FGs (Figure 3). We have found this number to be about 10-19% of the total number of grafts. If we split apart the FUs that exist within a naturally occurring FG, we can only insert them back into the recipient area at a distance of about 1–2mm from another. Therefore, by splitting them apart, we significantly decrease the density that these naturally occurring FGs produce in nature (Figures 4A and B).

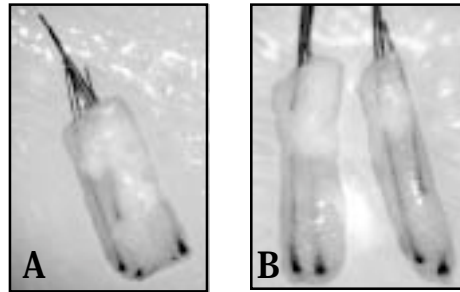
On the other hand, if we keep them



**Figure 2.** Donor area showing FUs and FGs. The FGs almost appear to be a single, larger unit, but upon close examination they could also be 2 FUs very close together.

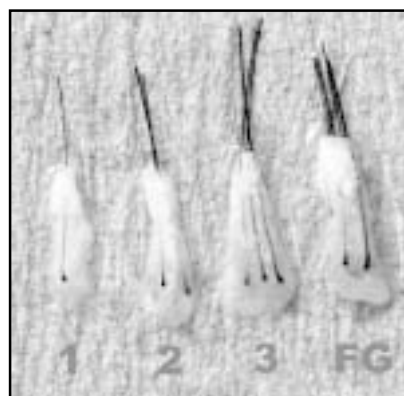


**Figure 3.** FG in a donor area sliver.



**Figure 4.** A: Intact FG containing 6 hairs. Close examination reveals that this follicular grouping consists of two FUs approximated very close together. B: Same follicular grouping has been cut into two individual FUs. If they are separated like this then when they are put back into the recipient area, they will be further apart than they were in nature. (Photos courtesy of Dr. John Cole.)

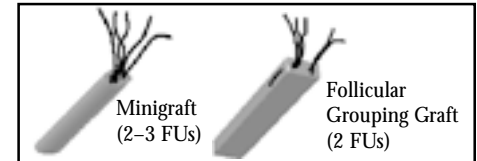
together as an intact FG, we can use the combination of small size and greater number of hairs in one graft to our advantage and produce greater density than by using a simple FU graft alone. A significant characteristic of FGGs is that they don't require larger incisions than what is typically used for a 3-hair FUG, because they are approximately equal in size and thus can be placed in sites of the same size (Figure 5). They therefore can be placed as close together as we routinely place the 3-hair FUGs and still look natural (Figure 6). With typical minigrrafts, we are forced to use a larger size site because of the spacing



**Figure 5.** A 3-hair FUG and a 4-5-hair FGG are about the same size and can therefore fit into the same small sized recipient site.

between the FUs within the minigrrafts. Thus, we can't achieve the same density.

### Comparing Minigrrafts to Follicular Grouping grafts:



#### Minigrrafts

- Two to three FUs in a graft “cut to size” (naturally spaced about 0.8–1.5mm apart)
- Greater space between FUs means larger graft and larger incision
- Larger incisions mean more space between incisions and less density
- Doesn't necessarily preserve the FUs architecture and integrity
- Fits into a miniblade incision

#### Follicular Grouping Grafts

- Two FUs close together (naturally spaced about 0.2–0.5mm apart)
- Closer spacing between FUs creates smaller grafts and smaller incisions
- Small incisions can be placed at higher density
- This is a naturally found spacing and does not appear compressed as preserves the FUs integrity
- Fits into same microblade incision (the same used for 3-hair FUGs)

### Safe Density

Most hair restoration surgeons agree that placing FUGs in incisions, spaced at 20–30 FU/cm<sup>2</sup>, is safe. However, many patients require 40–50 FU/cm<sup>2</sup> to achieve the appearance of adequate density. With FGGs, we can achieve this higher density without creating more recipient sites. Using FGGs, we can safely create 25 incisions per cm<sup>2</sup> using microblades (Sharp point 15° and 22.5°). But, as each FGG holds two FUs, we can actually achieve 50 FU/cm<sup>2</sup> in one single session. This way, it is possible to increase hair density and volume without increasing the number of incisions. It is not necessary to do this in all parts of the recipient area, but it is desirable to have this density in specific, aesthetically important parts of

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## Follicular Grouping Grafts

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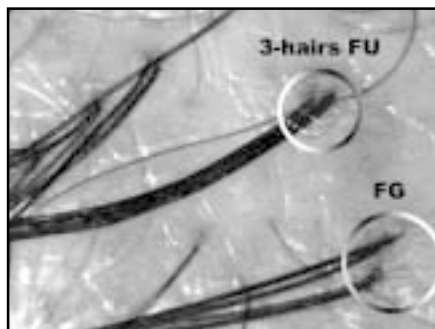


Figure 6. FG in recipient area after it has been planted and grown out. Notice that it contains 2 FUs very close together but they don't appear compressed. It is next to a 3-hair FU for comparison.

the recipient area such as the frontal tuft.

### The Study

In 2002, we did a study<sup>8</sup> to demonstrate that it is possible to increase the hair density in a specific area using FGGs, while at the same time keeping the incisions at 25–30 micro-incisions per cm<sup>2</sup>. In a one-year period, we selected 102 male patients with androgenetic alopecia. The two-person S&P Brazilian technique<sup>9,10</sup> was used for the entire procedure. On average, we placed 2.384 FUs per session, with the breakdown of grafts as follows: 1-hair FUGs = 327 (16.34%); 2-hair FUGs = 832 (41.58%); 3-hair FUGs = 459 (22.94%) and FGGs = 383 (19.14%). We found on average 2.09 hairs/FUG and 4.18 hairs/FGG, as each FGG contained about 2 FUGs. In the center of the frontal area (frontal tuft), we placed exclusively FGGs. We used the 15° Sharpoint blade and sometimes the 22.5°. This is the same size blade we used for the 3-hair FUGs. In this central area, we made incisions at our usual density of 20–30 incisions/cm<sup>2</sup>. Because only FGGs were used in this area, we were able to place almost 40% more hair than if we had used exclusively FUGs as in the regular FUT (Figures 7A and B).

### Conclusion

Using FGGs (or follicular family units) for FUT gives us all the advantages of both FUGs and minigrants, without the disadvantages. We can safely double the number of FUGs in an area and vascular trauma is not increased because we keep the incisions safely at 25 incisions/cm<sup>2</sup>. The combination of FUGs and FGGs is an

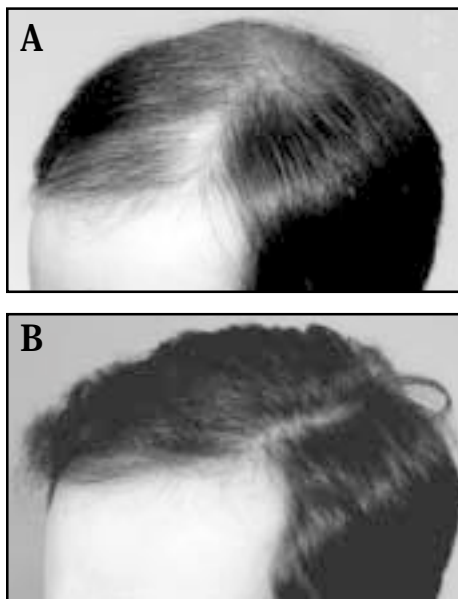


Figure 7. A: Before. B: After 2 sessions—4.860 FU (total)

effective and safe method to increase hair density and volume in follicular unit transplantation. ♦

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