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2006 Annual Meeting
 Call for Abstracts
 Deadline:
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New Instrumentation for Three-Step Follicular Unit Extraction

Robert M. Bernstein, MD *New York, New York*, William R. Rassman, MD *Los Angeles, California*

When we published the technique of follicular unit extraction (FUE) in 2002, Dr. Rassman and I described a 2-step process for this new hair transplant procedure.¹ The first step was to use a sharp, circular instrument to separate the follicular units from the surrounding tissue and then to remove them from the scalp using fine forceps. The success of the hair restoration varied from patient to patient, so we developed a simple test (the FOX Test) to see which patients were good candidates for this type of procedure. Hair transplant patients that were FOX 1 had virtually no transection (damage) to follicles during their removal and those with worse FOX ratings exhibited more transection, with FOX 5 patients having excessive damage during the extraction.^{1,2}

The 3-step technique for FUE is based upon Dr. Harris's concept of using a blunt instrument to prevent damage to follicles during the process of separating the follicular unit from the surrounding donor tissue. The three steps are:

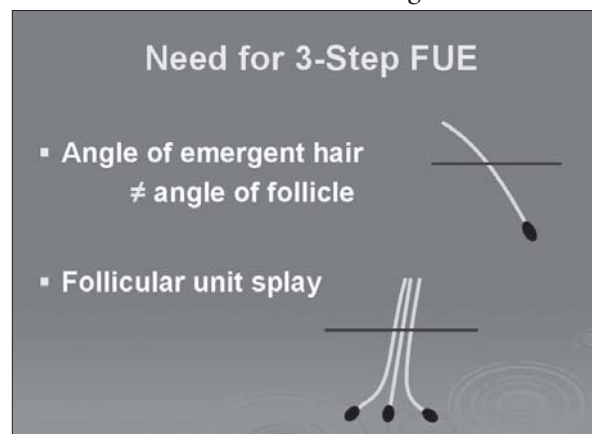
1. **Scoring:** Using a sharp punch
2. **Blunt dissection:** Using a dull instrument
3. **Extraction:** Using fine forceps^{3,4}

The 3-step procedure decreased the amount of transection in virtually all hair restoration patients and thus enabled a greater number to be classified as FOX 1. However, the 3-step procedure introduced a new problem with FUE, that of buried grafts.⁴

Why Use a 3-Step Technique?

The need for the 3-step procedure has two basic anatomic underpinnings (Figure 1). The first is that the angle of the hair that sticks out above the surface of the skin is not the same as the angle of the hair follicle below the skin's surface. In addition, the angles differ from follicle to follicle. Therefore, it is literally impossible to exactly align the cutting instrument with the hair follicle as it passes into the depths of the dermis.

The second issue is that although the follicles in the follicular units are gathered or grouped



on the surface (Figure 2) and in the mid-dermis (Figure 3), as they sit deeper into the skin they spread outward so that by the time they enter the subcutaneous fat they have become random (Figure 4). Therefore, a cutting instrument that easily fits around the follicular unit on the surface of the skin (Figure 2) will cut off the root of the follicles as it passes into the fat (Figure 4).

A solution to the problem is to use an instrument that would pass around the follicular units and essentially gather up the follicular bulbs that are spread out

Figure 1. The anatomic features of the follicular unit that make blunt dissection important.

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