Graft Quality Index: A Morphologic Classification of Follicular Unit Excision (FUE) Grafts

Robert H. True, MD, MPH, FISHRS | New York, New York, USA | drtrue@hairlossdoctors.com

GRAFT QUALITY INDEX

Graft quality is a significant component of all hair restoration surgery, especially Follicular Unit Excision (FUE). There is much discussion in our professional community about the impact of graft quality on the cosmetic results of hair restoration surgery, particularly with FUE. The gold standard remains that microscopically slivered and created grafts obtained by strip surgery are ideal. The challenge for FUE harvesting methods is to produce grafts that are similar to or exactly the same as strip grafts. FUE grafts are often characterized as having lower yield than microscopically dissected grafts produced in FUT surgery.

Grafts of high quality, whether produced by strip or FUE, have supportive tissue throughout and contain minimal transections, follicle fractures, and crushed follicles. Transection and stripped and severely splayed follicles are by-products of the punch insertion technique. Follicle fractures and crush injury are consequences of the amount and type of force used to remove the grafts once they have been scored and dissected.

Grafts of high quality are amenable to placement without undue manipulation or placement trauma. Grafts of lesser quality present more risk of damage during processing and implantation. In inspecting FUE grafts produced by a wide variety of techniques, one can observe that the grafts have different morphologies. On closer analysis, FUE grafts fall into four morphological types. Although there is general consensus in our field that some graft morphologies produce better yields than others, we do not know what the impact of these different morphologies is on transplant outcomes.

These morphological types are the basis of my novel concept, Graft Quality Index (GQI). I propose that this index can be used in all hair restoration surgeries—including FUE—to grade grafts. The graft quality grade can be used as a quality control tool to 1) predict the difficulty of graft placement, 2) guide the best implantation technique, and 3) relate graft morphology to the results of surgery. Perhaps this will help to answer the question of the effect on graft morphology on outcomes in future studies.

GQI has four grades:

1. **Grade 1**: Grafts have no transections or damaged follicles, a smooth regular border, perifollicular tissue throughout the follicle length, and non-follicular tissue below the bulbs (Figure 1).
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