

## POSTOPERATIVE SHOCK LOSS

*There are always a number of risks associated with any type of surgery and it's important to be aware of not only the great benefit that hair transplantation can provide, but also the risk.*

### An overview of the risks one may associate with hair transplant surgery:

- Scarring – minimal or significant (significant scarring is rare in the hands of a first-rate hair surgeon)
- Postoperative infection
- Excessive bleeding
- Delayed healing
- Death of transplanted hair follicles
- Postoperative hiccups (rare)
- Swelling of the forehead and face (common but temporary)
- Loss of feeling/numbness in the donor and recipient areas (mostly temporary)
- Temporary Shock loss (native and previously transplanted hairs could fall out due to surgical trauma but will regrow)
- Permanent Shock loss (If existing hairs are transected due to surgery or if they were on their way out due to MPB)
- Pinkness or Redness of the skin around the recipient area
- Pitting/cobble stoning/ridging of the scalp (Various deformities in the scalp typically caused by older instrumentation or lack of proper care)

An unfortunate possibility in hair transplantation is a phenomenon known as shock loss. This is mostly a temporary condition where native hairs are "shocked" due to trauma of the scalp during hair transplantation surgery, creating an additional but mostly temporary hair loss condition.

Shock loss occurs when the native hair is weak and isn't strong enough to resist the surgical trauma that is going on around it. More often than not the hair that has gone into shock will grow back but after 3/4 months – after the resting phase. Shock loss can occur both in the donor and recipient area a few weeks to a few months after having hair transplantation surgery.

Postoperative shock loss of course does occur in women. In those that are having hair transplants, there is a risk of shock loss in women as well as men, but the hair seem to always return in women, not the case in men who have progressive hair loss with considerable miniaturized hairs.

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There are 2 forms of shock loss:

Permanent shock loss, though rare, can occur in one of two ways:

1. The physician transects existing hair follicles (the risk is significantly lessened in the hands of a skilled physician; however, it is risky if you are in the hands of a clinic using older technology, using larger instruments to make incisions and inserting plugs, mini-grafts, or micro-grafts).
2. It can occur to hairs that have entered the miniaturization process but these hairs would have fallen out eventually anyway. This is why getting on medication such as Propecia (finasteride) is very important, to hopefully strengthen existing hairs and turn miniaturized hairs back into healthy hairs.

Temporary shock loss is more common and seemingly unpredictable – varying from person to person. In other words, there is no pattern or understood reason why some patients experience it drastically and others do not. Temporary shock loss occurs due to scalp trauma from surgery. But within several months, the hair grows back.

How to minimize temporary or permanent shock loss:

1. Using ultra refined follicular unit transplantation, the recipient incisions are much smaller and refined using custom cut blades smaller than 0.95mm which causes less trauma to the scalp. This in itself can minimize shock loss to the recipient area.
2. Conservative placement around existing hairs without super dense packing can also minimize shock loss to an existing area.
3. Use of FDA approved hair loss medication such as Propecia (finasteride) and/or Rogaine (minoxidil) to strengthen the miniaturized hairs 6 months to 1 year prior to hair restoration surgery.
4. Shaving the recipient area will minimize the risk of native hair loss as it is easier to determine proper angle and see in between the existing native hairs, thus minimizing the risk of native hair transaction. This is especially true for transplanting hair into areas with a lot of native hair.

### Miniaturization of the hair follicle in hair loss

The diagram below shows a hair follicle passing through anagen to telogen and then to a new anagen growth phase. This occurs for all human hair follicles, but as shown below, in pattern baldness in individuals who are genetically predisposed to this type of hair loss, the subsequent anagen hair follicle is smaller than the previous follicle. As pattern baldness progresses, the hair follicles go through several hair cycles and with each one, the follicles become shorter, finer, and less pigmented until the initially large terminal hair follicle has become a small vellus hair follicle. Eventually, the follicle or root dies and baldness is complete. This phenomenon is denominated miniaturization.



These effects progress until fewer visible hairs are left on the scalp.