



## Bariatric Surgery and Hair Loss

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Post-operative hair loss after bariatric surgery is a very common fear or concern for those considering bariatric surgery. Our hair is a very important component of our self image and the thought of losing it can be distressing. If you are a "Seinfeld" fan, you may have seen several episodes where George discussed the difficulties of being bald. Rest assured, you will not become bald from weight loss surgery!

While our hair is important to us, the body does not consider hair essential. When forced to make a choice, our bodies will prioritize maintaining our vital organs (like the brain or heart) over our hair. I think we will all agree that our brain and hearts are more important to life than our hair. That said I hope to answer your questions and concerns about hair loss in this brief article.

For most of our lives, our hair is in the process of both growing and falling out. Human hair follicles have two states—*anagen*, the growth phase and *telogen*, a dormant or resting phase. All hairs begin in the anagen phase; they grow for a period of time and then shift into the telogen phase, which lasts about 100 to 120 days. Following this, the hair will fall out. Typically, 90 percent of our hair is in the anagen phase, and only 10 percent is in the telogen phase. This means that we are usually losing less hair than we are growing, so it is not noticeable.

Hair loss has many causes. The most common type of hair loss after surgery is a diffuse loss, known medically as *telogen effluvium*. This can have nutritional and non-nutritional causes. Specific types of stress can result in a shift of a much greater percentage of hairs into the dormant telogen phase. Stressors known to result in this change include high fever, severe infection, major surgery, acute physical trauma, chronic illness, hormonal disruption (such as pregnancy, childbirth or discontinuation of estrogen therapy), acute weight loss, crash dieting, low protein intake, iron or zinc deficiency or heavy metal toxicity. Anesthesia can cause more hair to shift into the telogen phase, up to 30%. So two to three months after surgery you may experience increased hair loss.

As a weight loss surgery patient, you will experience many of the conditions that cause an increase in the dormant phase of hair. You will experience surgery, anesthesia and rapid weight loss. In the absence of any nutritional issues, the telogen phase will continue until those hairs have fallen out. There is no way to turn hair growth back on. Excess hair loss will not continue for more than six



months if there are no nutritional issues. Hair should re-grow with time by maintaining proper nutrition after surgery.

One of the best ways to prevent continued hair loss is to maximize your nutrition. Eat a minimum of 60 to 75 grams of protein per day (animal protein provides seven to eight grams of protein per ounce), and take your vitamin and mineral supplements.

If any of the following occurs, you should become suspicious of a nutritional cause:

- Hair loss continuing more than one year after surgery;
- hair loss not starting until six months after surgery;
- blood work indicating low levels of ferritin, zinc or protein;
- and difficulty tolerating protein-rich foods and vitamin and mineral supplements.

Iron is the single nutrient most highly correlated with hair loss. Optimal iron levels for hair health have not been established, although there is some evidence that a ferritin level below 40 gm/dl is associated with hair loss in women. This level is above the level associated with anemia. Iron deficiency is common after gastric bypass surgery, with reports varying from 20 to 40 percent. Menstruating women who undergo bariatric surgery may require additional iron supplementation. In addition to the iron found in a standard multivitamin/mineral or in bariatric vitamin/mineral supplement, menstruating women may require additional supplementation to achieve a total intake of 50 to 100 mg of elemental iron. This amount of oral iron can be achieved by the addition of ferrous fumarate. Women who use oral contraceptives have lower requirements for supplemental iron. Bariatric vitamin supplements usually will provide 30 to 36 mg of iron and should be adequate for low-risk individuals.

Biotin is often recommended to help prevent hair loss or improve hair re-growth. There are no scientific articles to support or refute these assumptions. Anecdotal reports suggest biotin makes a difference in hair loss and re-growth. As biotin is a water-soluble vitamin, the risk of toxicity is low and supplementation is not harmful. The recommended upper safe limit for biotin is approximately 2000 to 3000 mcg (micrograms) per day.

Zinc deficiency has been associated with hair loss, although further study is needed to definitively claim that zinc could prevent hair loss after bariatric surgery. The tolerable upper limit for zinc is set at 40 mg in adults. Levels above this can cause gastrointestinal distress, and toxicity can start at levels of 60 mg per day. A lab test to check for zinc deficiency would be prudent before taking any additional zinc.

Unfortunately there is little evidence that early hair loss is preventable after bariatric surgery (this means three to six months post op). Later hair loss, after six



months, can be an indicator of a nutritional deficiency such as iron or protein. This reinforces the need for post-op blood work to assess nutritional status, which is typically done at six weeks, six months and annually after bariatric surgery.

#### References:

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