



ORIGINAL RESEARCH PAPER

Health Science

ALKALINE DIET - AN ANSWER TO MOST MODERN SO CALLED LIFE STYLE DISEASES PART 4: INTERNAL FACTORS AFFECTING HAIR LOSS AND HOW TO REDUCE / AVOID THEM

KEY WORDS: pH, alkaline, acidic, hair loss, estrogen for hair loss, hair falling, hair loss hormonal imbalance, hormones and hair growth, hormones and hair loss in

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ABSTRACT

Hair loss is one of the most frustrating issues. It is understood there are several reasons which may cause hair loss or hair thinning; already discussed in the last article published on July 13th, 2018. We read about the external factors that can lead to hair loss and how to overcome them considering all internal factors in the body or reasons to be in place. However, we also know that in today's arena, the main reason (80%) for hair loss is disruption of internal factors and (20%) the external factors. Definitely, it once again boils down to correct ratio of Alkaline: Acidic Diet of 80%: 20%. Let us evaluate what are the main reasons for hair loss within the body that get disturbed hence leading to hair loss. Also, is there a way that we can try to overcome them and minimize hair loss by inclusion of specific things in our daily meals? In this article, I shall highlight on How Internal Factors Or Hormones Are Responsible For The Process Of Thinning of Hair / Balding To Set In & How We Can Try To Overcome Or Minimize Them. There is another process that is of "Hair Transplant" in so much fashion today; however despite all tests being performed the success ratio is still not 100%, besides we will see if there are any side effects of the treatment. In this article, I do not have any case to represent (as give you an insight, the required information and awaken you as a reader on its different aspects

Introduction

Your hair is an outstanding biomarker of health on the whole. There are a range of factors—from illness to hormonal imbalances to poor nutrition to major stress - that can contribute to hair loss.

In the previous article, we did understand the basics of pH of hair and hair scalp, how hair grows and when does hair loss occur. Hence, to sum up once again, when the hair does not complete the third cycle i.e. the Telogen Cycle, the hair starts thinning, and when the follicle stops producing hair, it leads to balding.

Also, we understood, that old age / growing age leads to thinning of hair or balding, but why only growing age, why not earlier, let us now understand something on this.

Internal Factors causing Hair Thinning / Hair Loss / Balding: Leaving the diet part aside, (we have discussed several times), we shall discuss the hormones, the disturbed levels of which lead to this. Also, we shall understand why men are more prone to hair loss / thinning / balding than women.

There are numerous hormones in the human circulatory system, all playing critical roles in maintaining the activity and processes within the body. While we cannot fight our genes, we can fight the effects of aging and hormonal imbalance (research done by: The Griffin Center of Hair Restoration and Research), however there are certain important hormones that we need to consider, when thinking about hair loss / hair thinning or balding.

- Testosterone
- Thyroxin
- Estrogen
- Insulin
- Cortisol

Let us discuss these individually

1. Testosterone

Genetic baldness, the most common form of hair loss is believed to be caused by an inherited over-sensitivity to di-hydro-testosterone or DHT, a byproduct of the breakdown of testosterone in the body. When testosterone levels rise, the body's levels of DHT rise as well, increasing the rate of hair loss in people.

It is about tissue DHT, as found in scalp, rather than serum DHT – the greater the hair loss (at least that's the theory).

Specifically, DHT shortens the growth cycle of the hair and increases the resting cycle. Over time, hair in these locations grows less and becomes shorter until it simply does not grow anymore. Genes can make hair follicles especially in front and crown of head

sensitive to this hormone.

For men, even if testosterone levels stay constant, higher estrogen will imbalance the ratio, increase DHT conversion, leading to hair loss.

For women, even if estrogen levels stay the same, higher testosterone will imbalance the ratio, increase DHT conversion, leading to hair loss Hence, if the ratio is imbalanced, one is susceptible to hair loss

2. Thyroxin

The thyroid secretes thyroxin; it is a hormone for regulating the body's metabolism and maintaining energy. Under active / over active hormone production can cause hair on the head to become thinner.

3. Estrogen

Estrogen is linked to healthy hair growth. It protects against hair loss by reducing DHT conversion and also stimulates new hair growth. Fundamentally, estrogen works by superseding the effects of testosterone.

Women produce most of estrogen in the ovaries and other reproductive tissues. Since men do not have this female anatomy, their body needs to generate estrogen through a process involving an enzyme called aromatase that converts testosterone into estradiol.

Suppository Reasons of hair loss / thinning / balding in men:

- Aging men may have too much aromatase activity, causing testosterone to convert to excess estradiol.
- Some may lack aromatase and suffer an estrogen shortage.
- Others may produce so little endogenous testosterone that it is not adequate to convert into estrogen

It is just not estrogen or the testosterone levels that are the problem. Estrogen is actually good for hair growth. RATHER IT'S THE RATIO BETWEEN TESTOSTERONE AND ESTROGEN LEVELS, which is responsible for both men and women. For example:

- For women who have gone through menopause phase, their estrogen levels have dropped by as much as 90% and may face the problem of hair thinning.
- An underperforming thyroid may also skew the testosterone: estrogen ratio.

4. Insulin

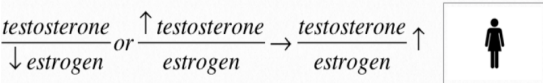
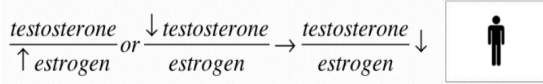
It is a hormone produced in pancreas that regulates blood sugar levels, insulin affects fat storage, heart health, and hair growth as

well.

5. Cortisol

One another Hormonal imbalance reason that can promote hair loss is caused by stress. In response to an emergency, the body's adrenal glands generate cortisol, a hormone setting off the flight-or-fight response. This extra cortisol is produced at the price of hormones sustaining hair growth. Hence, continuing pressure and apprehension can lead to thinning hair

For men & women, imbalance usually looks like this



Let us understand the tests that could be used to determine levels of related hormones:

- DIHYDROTESTOSTERONE (DHT), FREE: Report is generally available after 2- 3 weeks
- Cortisol AM: normal 8am levels: 6 to 23 mcg/dl
- Estradiol
- Free Testosterone: Values above 1-1.5 are considered on the higher end of normal range. Values closer to 0.5-0.6 are more desirable. Free Testosterone is the result of Total Testosterone divided by SHBG.
- Follicle Stimulating Hormone
- Prolactin
- Leutinizing Hormone
- SHBG (Sex Hormone Binding Globulin): Values around 90 are desirable. Values above 100 are considered too high. High values of SHBG decrease the availability of all the hormones in the body. Higher levels of estradiol are needed to raise SHBG
- DHEA's

Normal range of both Testosterone and Estrogen in males and females

Total and Free Testosterone & Estrogen Levels: Men Per Decade

Age	Total Testosterone Average (ng/dl) (270-1,070)	Free Testosterone Average (pg/ml)	Estradiol levels from age of 20-80 years
25 - 34	720	123	21 – 30 pg/ml (maximum being 30 when young and lowest being 21 when older)
35 – 44	667	103	
45 – 54	606	91	
55 – 64	562	83	
65 – 74	523	69	
75 – 84	470	60	
85 – 100	376	54	

Estrogen & Testosterone Levels: Women Per Decade

Age	Estrogen level	Total Testosterone Average (pg/ml)
20-29	149 picograms	15-70, 30+ years = -1%
30-39	210 picograms	
40-49	152 picograms	
50-59	130 picograms	

Understanding the ratio of hormones in both genders, let us now consider the food articles which can be added additionally to diet that supply the body with more estrogen helping in good hair growth or minimizing hair fall / thinning

Solution

We know that pollution, apprehensions / worries are totally not in our control; though we can try to minimize them, however not root them out. Hence, ultimately Balanced Nutrition is the key to optimal overall health, even Healthy Hair.

So, it is absolutely important that one is getting enough of the essential vitamins, minerals, and nutrients required by the body, especially those linked to hair loss like: protein, iron, zinc, and biotin along with a proper ratio of Alkaline: Acidic Diet i.e 80%: 20%.

Also important to know is that hair loss is a common side effect of a variety of medications like: Blood-thinning medications (anticoagulants), antidepressants, beta blockers, NSAIDS, Chemotherapy, etc.

How can the above Balance of Hormones be maintained?

- Correct levels in blood to be checked of how much of Free Testosterone, SHBG and estrogen levels are present in individuals.
- Equally important, is to check Cortisol and DHEA levels, which reflect adrenal status, and can control both estrogen and testosterone.

Right foods to be additionally added to diet (amount to be discussed on personal consultation with your dietician)

- Seeds: Flax seeds, Sesame seeds

Flaxseeds occupy the Top Position in foods containing Phytoestrogen. There is some data saying that they reduce total and free testosterone levels, while also suppressing the enzyme 5-a reductase3 which transforms testosterone into its more potent form of dihydrotestosterone (DHT)

- Serving Size – 1 tablespoon
- Isoflavones – 22.5 mg
- Phytoestrogens (per 100 grams) – 379,380 mcg

Sesame seeds contains both contain lignans and phytoestrogens.

- Serving Size – approximately 28 gms
- Lignans – 11.2 mg
- Phytoestrogens (per 100 grams) – 8008.1 mcg

- Fruits: Peaches, Strawberries

Peaches

- Serving Size – 175 grams
- Isoflavones – 4.55 mg
- Phytoestrogens (per 100 grams) – 64.5 mcg

Strawberries

- Serving Size – 152 grams
- Isoflavones – 3.65 mg
- Phytoestrogens (per 100 grams) – 51.6 mcg

Vegetables: Alfalfa Sprouts, Mung Bean Sprouts, Green Beans
Mung Bean Sprouts

- Serving Size – 104 grams
- Isoflavones – 238.99 mg
- Phytoestrogens (per 100 grams) – 495.1 mcg

Green Beans

- Serving Size – 110 grams
- Isoflavones – 42.9 mg
- Phytoestrogens (per 100 grams) – 105.8 mcg

• Alfalfa Sprouts

These are one of the best choices to boost estrogen levels.

- Serving Size – 33 grams
- Isoflavones – 130 mg
- Phytoestrogens (per 100 grams) – 441.4 mcg
- Legumes: White Beans, Black Beans

White Beans

- Serving Size – 179 grams
- Isoflavones – 70 mg
- Phytoestrogens (per 100 grams) – 72.7 mcg

Black Beans

- Serving Size – 172 grams
- Phytoestrogens (per 100 grams) – 5330 mcg

• Nuts: Pistachios, Walnuts, Peanuts

When it is do with testosterone-lowering abilities, walnuts and almonds are supreme. (In a study done at University of California) walnuts increased Sex Hormone-Binding Globulin (SHBG) and almonds reduced free androgen. SHBG is a protein that binds to testosterone and can lower your free testosterone levels in the blood.

Pistachios contain highest amount of phytoestrogens among all nuts.

- Serving Size – 28 grams
- Isoflavones – 49.5 mg
- Phytoestrogens (per 100 grams) – 382.5 mcg

Walnuts

- Serving Size – 28 grams
- Isoflavones – 14.9 mg
- Phytoestrogens (per 100 grams) – 26 mcg

Peanuts

- Serving Size – 28 grams
- Phytoestrogens (per 100 grams) – 34.5 mcg

- **Dried Fruits:** Dried Apricots, Dates, Dried Prunes
- **Serving Size of Dried Apricots** – 130 grams, Phytoestrogens (per 100 grams) – 445.5 mcg
- **Serving Size of Dates** – 24 grams, Phytoestrogens (per 100 grams) – 329.5 mcg
- **Serving Size of Prunes** – 248 grams, Phytoestrogens (per 100 grams) – 177.5 mcg
- Herbs: Garlic

Some Highlights on Hair Transplant: (for you to decide)

Hair transplant is the trend / craze these days. But are hair transplants really safe and successful or a lasting process or does it have any unwarranted tissue change? Hair transplant may be remarkable, but not everyone is a good candidate. Even if you are a good candidate for the procedure, first we need to understand whether it has any side effects or no.

If you do not undergo a hair transplant at proper phase of hair loss, the transplanted hair may give an odd-looking form. A likelihood of it having an appearance resembling a lonely island may develop. In cases of donor areas being weak and insufficient to supply amount of hair for transplant, it will lead to once again a poor result. Also to keep in mind is that once the follicular units are

extracted from donor area, these hair follicles do not grow back.

Once the hair in the donor area is trimmed it is given local anesthesia. Hence, it is a painless procedure only because of anesthesia given; else incisions are made in the balding areas and without anesthesia an extremely painful procedure.

After the hair transplant surgery, tiny incisions with short hair would be visible on the patients operated area. The incision marks heal naturally and the redness in the recipient area vanishes itself within a week.

The scalp needs to be protected from sun and infections for a while after the surgery. The patient is put on antibiotics for a few days. Hence, if proper care is not taken, it may lead to skin infection

Also, the most common medicine used is Minoxidil which is an anti-hypertensive vasodilator. NOW WHAT IS THIS?

- Minoxidil is generally well tolerated, but common side effects are burning or irritation of eye, itching, redness or irritation at the treated area, and unwanted hair growth elsewhere on the body.
- Severe allergic reactions may include rash, hives, itching, difficulty breathing, tightness in the chest, swelling of the mouth, face, lips, or tongue, chest pain, dizziness, fainting, tachycardia, headache, sudden and unexplained weight gain, or swelling of hands and feet.
- Alcohol and propylene glycol present in some topical preparations may dry the scalp, resulting in dandruff and contact dermatitis
- Side effects of oral minoxidil may include swelling of the face and extremities, rapid and irregular heartbeat, lightheadedness, cardiac lesions, and focal necrosis of the papillary muscle and subendocardial areas of the left ventricle
- The mechanism by which minoxidil promotes hair growth is not fully understood. Minoxidil is a potassium channel opener, causing hyperpolarization of cell membranes. Hypothetically, by widening blood vessels and opening potassium channels, it allows more oxygen, blood, and nutrients to the follicles.
- Minoxidil is less effective when the area of hair loss is large. In addition, its effectiveness has largely been demonstrated in younger men who have experienced hair loss for less than 5 years

Hence, Hair transplant does not mean you will have a lush growth of hair.

Literature Review & Conclusion

Time and again, we have seen that correct ratio of Alkaline: Acidic Diet does rectify things within the body and without any side effects and totally inexpensive. Hence, if you are also undergoing hair thinning, why not include the above foods in your diet and follow a correct ratio of the Alkaline: Acidic foods, be it men or women, because these days, even females have thinning of hair. Any doubts on this article or previous articles, you can write to me on dr.vidushi.agrawal@gmail.com

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