

# Solutions for Hair Loss

Dr. John Bergman

# Hair Loss

“Hair loss can affect just your scalp or your entire body. It can be the result of heredity, hormonal changes, medical conditions or medications. Anyone — men, women and children — can experience hair loss.

Baldness typically refers to excessive hair loss from your scalp. Hereditary hair loss with age is the most common cause of baldness.”

Before pursuing hair loss treatment, talk with your doctor about the cause of the hair loss and the best treatment options.”

# Different Types of Hair Loss

- Gradual thinning on top of head (Most Common)
- Circular or patchy bald spots
- Sudden loosening of hair
- Full-body hair loss
- Patches of scaling that spread over the scalp

Mayo Clinic

# What Cause Hair Loss?

**“Most people normally shed 50 to 100 hairs a day. This usually doesn't cause noticeable thinning of scalp hair because new hair is growing in at the same time. Hair loss occurs when this cycle of hair growth and shedding is disrupted or when the hair follicle is destroyed and replaced with scar tissue.”**

**The exact cause of hair loss may not be fully understood,**  
but it's usually related to one or more of the following factors:

- Family history (heredity)
- Hormonal changes
- Medical conditions
- Medications

# What is Alopecia?

**“Alopecia means hair loss. When a person has a medical condition called alopecia areata, the hair falls out in round patches. The hair can fall out on the scalp and elsewhere on the body.”**

Alopecia areata can cause different types of hair loss. Each of these types has a different name:

- Alopecia areata (hair loss in patches)
- Alopecia totalis (lose all hair on the scalp)
- Alopecia universalis (lose all hair on the body)

American Academy of Dermatology

# What causes Alopecia?

“Alopecia areata is an autoimmune disease. Autoimmune means that the body's immune system attacks the body. When alopecia areata develops, the body attacks its own hair follicles. **A person's genetic makeup, combined with other factors,** triggers this form of hair loss.”

People with alopecia areata may have a higher risk for:

- Another autoimmune disease such as **thyroid disease or vitiligo**
- **Asthma and allergies, mainly atopic dermatitis**

American Academy of Dermatology

What do we know about Thyroid disorders,  
Asthma, Allergies, and Autoimmune Diseases?

**Toxicity + Deficiency = Dis-**  
**Ease**



# Medications for treating alopecia areata?

**“There is no cure for alopecia areata.** Hair often re-grows on its own. Treatment can help the hair re-grow more quickly. A dermatologist may prescribe one or more of the following to help the hair re-grow more quickly:”

- Corticosteroids
- Minoxidil
- Anthralin
- Diphencyprone (DPCP)

American Academy of Dermatology



# Side Effects of Topical Corticosteroids

- skin thinning (atrophy)
- stretch marks (striae)
- Easy bruising and tearing of the skin
- Enlarged blood vessels
- **Steroid Rosacea** (steroid acne): small bumps (papules) and pustules
- **Periorificial Dermatitis**: itchy or tender small red papules
- **Pustular Psoriasis**: flares of widespread sterile pustules on a background of red and tender skin
- **localized hair thickness and length**

# Side Effects of Corticosteroids

## **Fluid and Electrolyte Disturbances**

- Sodium retention
- Fluid retention
- **Congestive heart failure** in susceptible patients
- Potassium loss
- Hypokalemic alkalosis
- **Hypertension**

# Side Effects of Corticosteroids

## **Musculoskeletal**

- Muscle weakness
- Steroid myopathy
- Loss of muscle mass
- **Osteoporosis**
- Tendon rupture, particularly of the Achilles tendon
- **Vertebral compression fractures**
- Aseptic necrosis of femoral and humeral heads
- **Pathologic fracture of long bones**

# Side Effects of Corticosteroids

- **Gastrointestinal**
- **Peptic ulcer** with possible perforation and hemorrhage
- **Pancreatitis**
- **Abdominal distention**
- **Ulcerative esophagitis**

# Side Effects of Corticosteroids

## **Dermatologic**

- Impaired wound healing
- Thin fragile skin
- **Petechiae and ecchymoses**
- **Facial erythema**
- Increased sweating
- May suppress reactions to skin tests

# Side Effects of Corticosteroids

## Neurological

- **Increased intracranial pressure** with papilledema (pseudo-tumor cerebri) usually after treatment
- **Convulsions**
- **Vertigo**
- **Headache**

**And that's not even all of the Side Effects!**

# Side Effects of Minoxidil (Topical Form)

- Acne at site of application
- burning of scalp
- facial hair growth
- **increased hair loss**
- inflammation or soreness at root of hair
- reddened skin
- swelling of face
- Blurred vision or other changes in vision
- chest pain
- dizziness
- fainting
- fast or irregular heartbeat
- flushing
- headache
- lightheadedness
- numbness or tingling of hands, feet, or face
- swelling of face, hands, feet, or lower legs
- weight gain (rapid)

# Other Side Effects of Topical Minoxidil

## Cardiovascular

Edema, salt and water retention, pericardial effusion, pericarditis, tamponade, tachycardia, and angina have been reported with **oral minoxidil**.

Cardiovascular side effects have included edema, chest pain, blood pressure changes, palpitations, and changes in pulse rate with **minoxidil topical therapy**.



# Other Side Effects of Topical Minoxidil

## **Dermatologic**

Cases of generalized hypertrichosis have been associated with topically applied minoxidil.

**Eczema, irritant dermatitis, and allergic contact dermatitis have also been reported**

**Exacerbation of hair loss/alopecia has been reported**

# Other Side Effects of Topical Minoxidil

## **Nervous system**

Headache, dizziness, faintness, and light-headedness have been reported with minoxidil topical

## **Gastrointestinal**

Diarrhea, nausea, and vomiting have been reported during treatment with minoxidil topical.

# Side Effects of Minoxidil (Tablet Form)

- nausea, vomiting;
- breast pain or tenderness; or
- dry cough, sharp or stabbing chest pain;
- chest pain spreading to the arm or shoulder, nausea, sweating, general ill feeling;
- trouble breathing (especially while lying down);
- swelling in your legs, ankles, or feet;
- rapid weight gain of 5 pounds or more;
- fast or pounding heartbeats;
- sudden numbness, weakness, headache, confusion, or problems with vision, speech, or balance;
- fever, sore throat, and headache with a severe blistering, peeling, and red skin rash;
- the first sign of any skin rash, no matter how mild;
- easy bruising or bleeding; or
- feeling like you might pass out.
- **changes in the color, length, or thickness of body or facial hair.**

# So what really causes hair loss?

**“A careful history and examination of shed hairs will reveal the etiology of most alopecias due to systemic processes. Telogen effluvium is preceded by a severe systemic stress occurring at least two months prior to the loss of normal club hairs.**

**Most other causes of hair loss involve damage to the hair follicle, which leads to the shedding of dystrophic, brittle anagen hairs. A history of drug ingestion or nutritional compromise or concurrent symptoms suggestive of a genetic, endocrinologic, collagen vascular, or infectious etiology will lead to an accurate diagnosis.”**

# So what really causes hair loss?

**“Anything that interrupts the normal hair cycle can trigger diffuse hair loss.**

**Triggers include a wide variety of physiologic or emotional stresses, nutritional deficiencies, and endocrine imbalances. Loss of telogen-phase hairs is the most common. Hair loss during the anagen phase is usually caused by chemotherapy or radiation therapy.**

**Finding the cause, or trigger, of the hair loss requires a thorough history and examination and will enable appropriate treatment. Patient education is key in the management of diffuse hair loss.”**

# Causes of Alopecia?

“Numerous circumstantial evidence supports the notion that Alopecia Areata is fundamentally a disease mediated by **inflammatory cells** and may be autoimmune in nature.”

“Although genetic susceptibility is a key contributor to disease development, disease onset and phenotypic presentation are probably modified by **complex environmental interplay.**”

Expert Reviews in Molecular Medicine  
Cambridge University Press

# Complex Environmental Interplay?

## **The Journal of Autoimmunity**

**“During the 1980s, genetically engineered hepatitis B vaccines (HBVs) were introduced in the United States. A large-series of serious autoimmune conditions have been reported following HBVs, despite the fact that HBVs have been reported to be "generally well-tolerated."**



# The Hepatitis B Vaccination

Adults receiving HBV had significantly increased odds ratios for:

- Multiple Sclerosis
- Optic Neuritis
- Vasculitis
- Arthritis
- **Alopecia**
- Lupus Erythematosus
- Thrombocytopenia
- Rheumatoid arthritis

The Journal of Autoimmunity





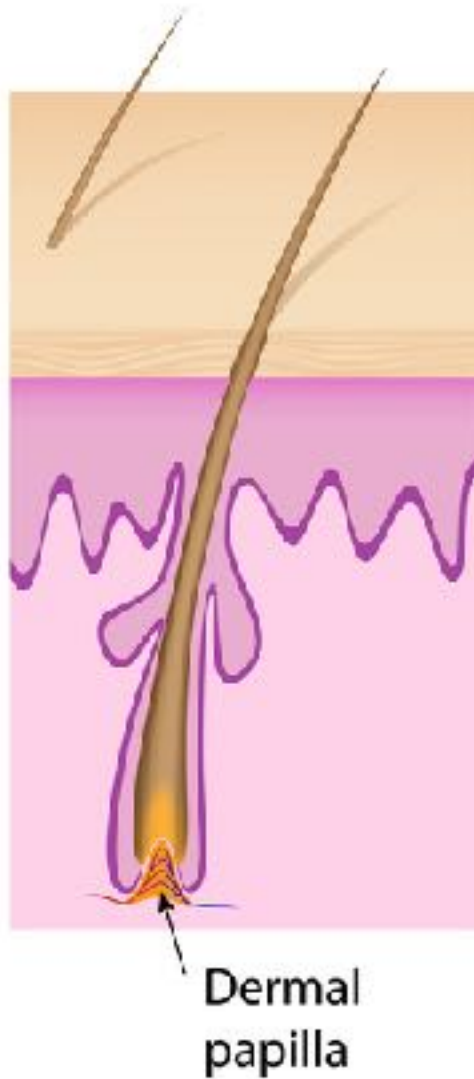
# Hair Anatomy and Physiology

“Each hair develops from a follicle — a narrow pocket in the skin — and goes through three phases of growth.”

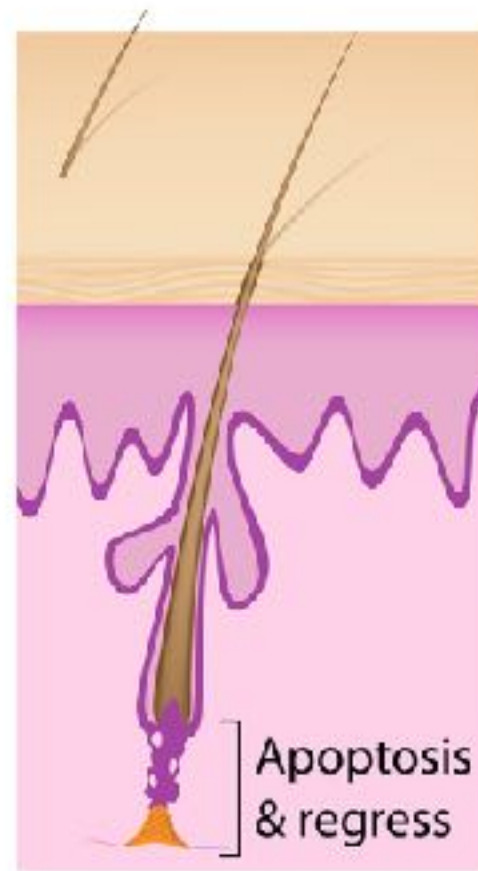
- **Anagen**, the active growth phase, lasts two to seven years.
- **Catagen**, the transition phase, lasts about two weeks.  
During this phase, the hair shaft moves upward toward the skin's surface, and the dermal papilla (the structure that nourishes cells that give rise to hair) begins to separate from the follicle.
- **Telogen**, the resting phase, lasts around three months and culminates in the shedding of the hair shaft.

# Hair Growth Cycle

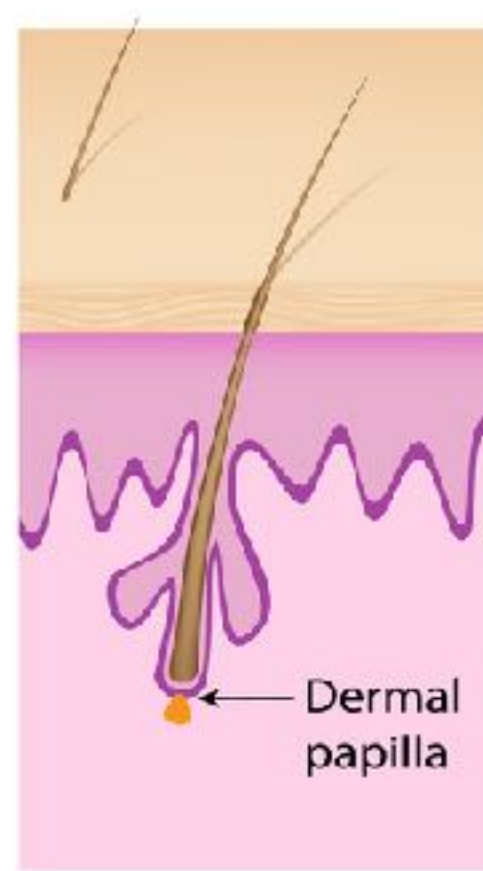
*Anagen*



*Catagen*



*Telogen*



# The Main Type of Hair Loss

**“The main type of hair loss in both sexes is androgenetic alopecia, or female (or male) pattern hair loss.”**

Harvard Medical School



# What Causes Hair Loss?

**“There are many potential causes of hair loss, including medical conditions, medications, and physical or emotional stress.”**

**“As the name suggests, androgenetic alopecia involves the action of the hormones called **androgens**, which are essential for normal male sexual development and have other important functions in both sexes, including sex drive and regulation of hair growth.**

**It can also result from an underlying endocrine condition**

# Causes of Hair Loss

## **Chemical, Physical, Emotional Stress**

“Medically, hair loss falls into several categories, including:

**Telogen effluvium — This common form of hair loss happens two to three months after a major body stress, such as a prolonged illness, major surgery or serious infection. It also can happen after a sudden change in hormone levels, especially in women after childbirth.”**

# Causes of Hair Loss

## Medications

Hair loss can be a side effect of certain medications, including **lithium, beta-blockers, warfarin, heparin, amphetamines and levodopa (Atamet, Larodopa, Sinemet).**

In addition, many medications used in cancer **chemotherapy** — such as doxorubicin (Adriamycin) — commonly cause sudden hair loss affecting the entire head.

Harvard Medical School

# Medications that Cause Hair Loss

- Anticoagulants (blood thinners)
- Gout Medications
- Beta Blockers
- ACE Inhibitors
- Statins (Cholesterol lowering drugs)
- Birth Control and other Hormonal Medications
- Testosterone or Anabolic Steroids
- Antidepressants
- Mood Stabilizers
- Anticonvulsants
- Antibiotics and Antifungals
- Acne Medications
- Steroids
- NSAID's
- Thyroid Medications
- Immunosuppressant's





# Causes of Hair Loss

## **Other Illnesses or Diseases**

Hair loss can be one of the symptoms of a medical illness, such as

- **systemic lupus erythematosus (lupus)**
- **syphilis**
- **thyroid disorder (hypothyroidism or hyperthyroidism)**
- **sex-hormone imbalance**
- **serious nutritional problem, especially a deficiency of protein, iron, zinc or biotin.**



# Causes of Hair Loss

## Traumatic alopecia

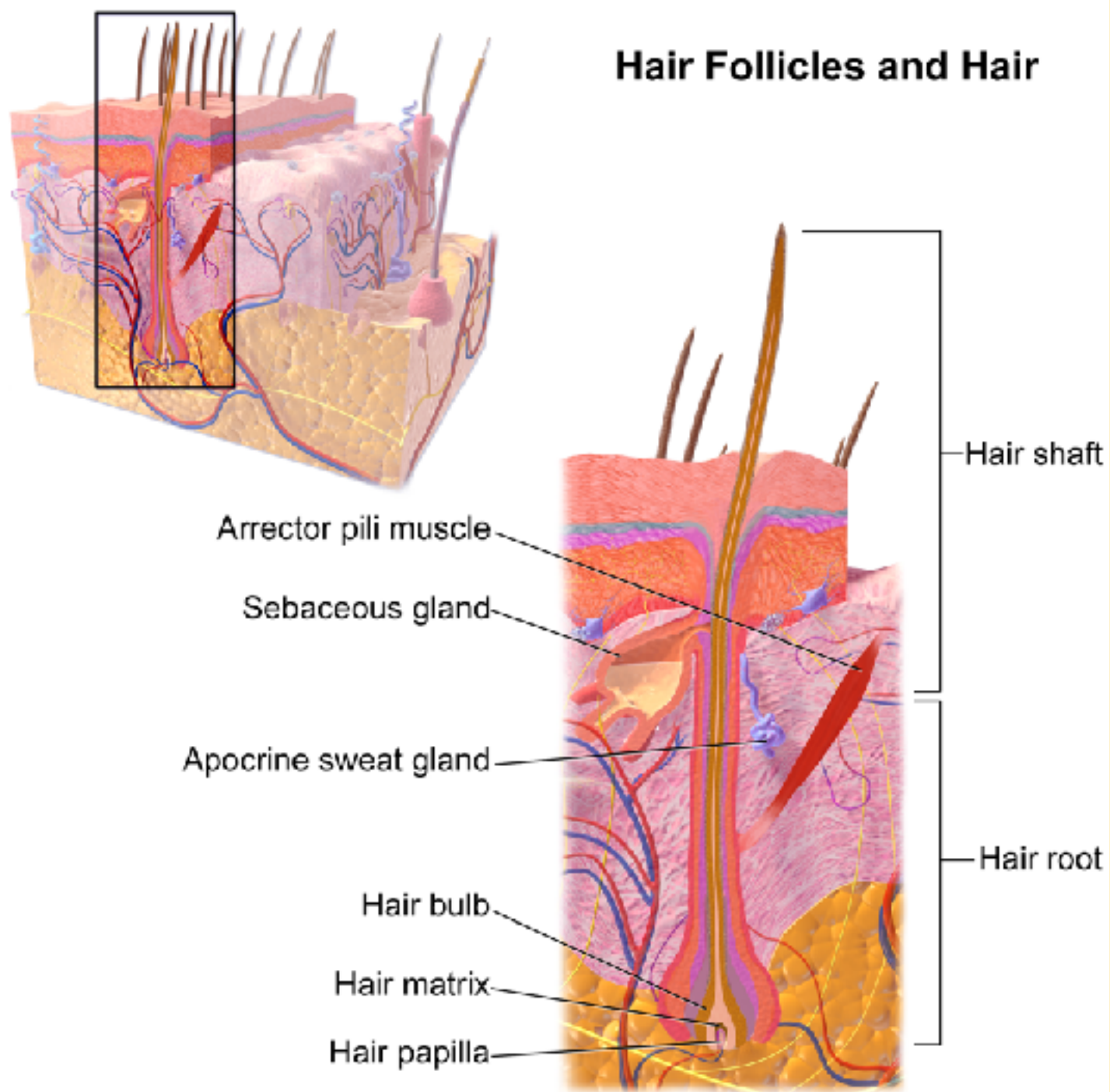
This form of hair loss is caused by hairdressing techniques that

- **pull the hair** (tight braiding or cornrowing)
- **expose hair to extreme heat and twisting** (curling iron or hot rollers) or
- **damage the hair with strong chemicals** (bleaching, hair coloring, permanent waves).

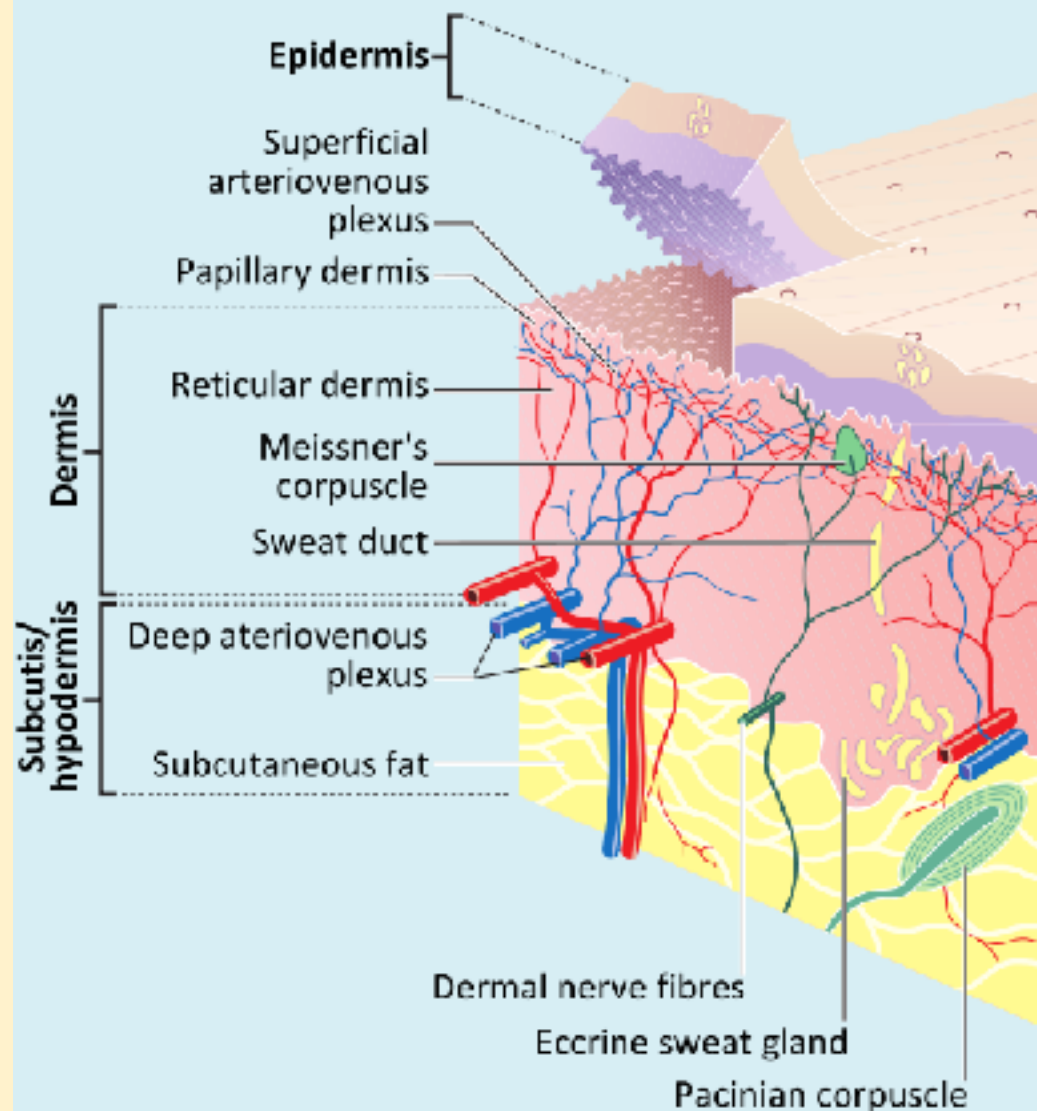
# Hair Loss is a Sign, Not a Problem!



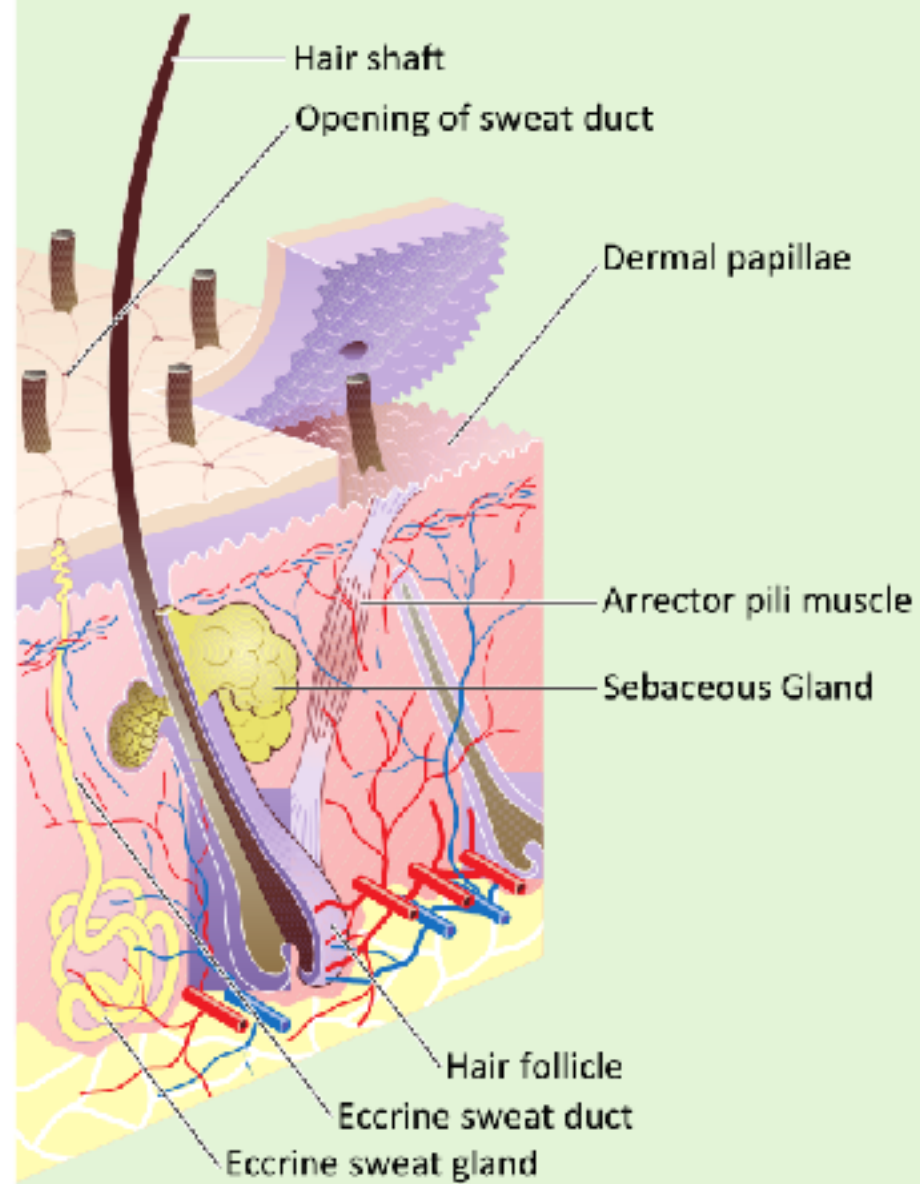
## Hair Follicles and Hair



## Thick skin (hairless)



## Thin skin (hairy)



# The Importance of Skin Flora

“The skin is the human body’s largest organ, colonized by a diverse milieu of microorganisms, most of which are harmless or even beneficial to their host... The cutaneous innate and adaptive immune responses can modulate the skin microbiota, but the microbiota also functions in educating the immune system.”

“Symbiotic microorganisms occupy a wide range of skin niches and protect against invasion by more pathogenic or harmful organisms. These microorganisms may also have a role in educating the billions of T cells that are found in the skin, priming them to respond to similarly marked pathogenic cousins.”

Nature Reviews Microbiology



# Step One: Avoid Disruptions to your Microflora

- Vaccinations
- Antibiotics
- Medications
- Toxic, processed food
- Antibacterial Soaps
- All Toxic Household Cleaners
- All Toxic Personal care and Cosmetic products
- A Sedentary Lifestyle
- **Chronic Stress: Chemical, Physical, Emotional**



# Effects of Chronically Elevated Cortisol Levels

- Diminishes cellular utilization of glucose
- Increases **blood sugar levels**
- Decreases **protein synthesis**
- Increases protein breakdown that can lead to **muscle wasting**
- Causes demineralization of bone that can lead to **osteoporosis**
- Interferes with **skin regeneration** and healing
- Causes shrinking of **lymphatic tissue**
- Diminishes **lymphocyte** numbers and functions

# Stress and the Adrenals: Adrenal Fatigue

If the Adrenals are depleted from chronic stress these are the consequences:

- Low body temperature
- Nervousness
- Depression
- Hypoglycemia
- Memory loss
- Osteoporosis
- **Weak Immune system**
- Inflammatory conditions
- Vertigo and dizziness
- **Dry and thin skin**
- Weakness
- Chronic fatigue

- Difficulty gaining weight
- Difficulty building muscle
- Irritability
- Confusion and Cognitive Impairment
- Autoimmune hepatitis
- Palpitations
- Low blood pressure
- PMS
- Headaches
- **Unexplained hair loss**
- Excessive hunger
- Indigestion
- Alternating diarrhea and constipation
- **Autoimmune diseases**
- Insomnia



# Stress and the Thyroid

- Depression
- Heart disease
- Chronic fatigue
- Fibromyalgia
- PMS (premenstrual syndrome)
- Menopausal symptoms
- Muscle and joint pains
- Irritable bowel syndrome
- **Autoimmune disease**
- High cholesterol
- Irregular Menstruation

- Low Libido
- Infertility
- Gum Disease
- Fluid retention
- **Skin conditions such as acne**
- Memory problems
- Poor stamina
- Weight gain
- Lethargy
- **Poor quality hair and nails**
- **Hair loss**
- Cold hands and feet
- Constipation

# These organs are responsible for Skin and Hair Health:

- Liver
- Kidneys
- Adrenals
- Thyroid
- Large Intestine
- Small Intestine



# The Optimal Diet for Skin and Hair Health

- Organic plant based diet (Locally grown, seasonal foods)
- Healthy fats such as coconut oil and olive oil
- Fermented Vegetables
- Probiotic Supplements
- Juice Vegetables
- Blend Fruits
- Raw Dairy
- Reduce Omega 6 and Increase Animal based Omega 3





# The Basics of Skin and Hair Health

## Dark Green Leafy Vegetables

- Promote optimal function of natural detoxification systems

- Kale
- Spinach
- Dandelion greens
- Broccoli
- Chlorella





# The Basics of Skin and Hair Health

## Antioxidant Rich Foods

- Help protect your body against free radicals
- Goji Berries
- Wild Blueberries
- Dark Chocolate
- Pecans
- Artichoke
- Elderberries
- Blackberries
- Kidney Beans



# The Basics of Skin and Hair Health

## Healthy Fats

- Supports healthy hormone production and supports skin regeneration

- Omega 3
- Coconut Oil
- Olive Oil
- Organic Grass-fed Butter





# The Basics of Skin and Hair Health

## Fermented Foods

- Help promote growth of beneficial bacteria, supports healthy immune function
- Help increase vitamin b, omega 3, digestive enzyme, and lactase/lactic acid

- Kefir (fermented milk)
- Kombucha
- Sauerkraut
- Pickles
- Miso
- Kimchi



# The Basics of Skin and Hair Health

## Carotenoids

- Vital for skin health
- 2 categories carotene and xanthophylls

- Carrots
- Sweet Potatoes
- Kale
- Spinach
- Astaxanthin  
(from marine algae)





# Feed Your Skin and Hair from the Outside

- Organic Shea Butter
- Cocoa Butter
- Virgin Coconut Oil
- Jojoba Oil
- Murumuru Butter
- Palm Oil
- Aloe Vera Juice



# Avoid Toxic Skin and Hair Products

- Ammonium lauryl sulfate, sodium laureth sulfate
- Sodium Lauryl Sulfate
- Sodium Chloride
- Polyethelyne Glycol
- Diethanolamine (DEA) and Triethanolamine (TEA)
- Parabens
- Formaldehyde
- Alcohol
- Synthetic Fragrance or Parfum
- Synthetic Colors
- Propylene Glycol
- Lanolin, Petroleum, and Mineral Oil
- Dimethicone
- Toluene
- Phthalates
- Triclosan



**If you can't eat it,  
Don't use it on your  
Skin or Hair!**

# Don't forget to filter your Water!

- You need both shower and drinking water filters
- **Make sure they remove Fluoride and Chlorine**
- My favorite water filters:  
**Doulton USA and Berkey**





# Vitamin D

**Vitamin D Deficiency is linked to:**

- Digestive disorders
- Skeletal disorders including osteoporosis
- Depression, mental disorders
- Neurodevelopmental disorders (Autism)
- Brain Dysfunction, dementia and Alzheimer
- Chronic infections
- Cardiovascular disease
- All types of Cancer
- **Autoimmune Diseases**
- **Premature Aging**



# Vitamin D for Healthy Hair

- **UVB exposure** from the Sun is the best way to optimize your vitamin D levels
  - At least 20 minutes of **sun exposure daily** during mid day
  - Your shadow shouldn't be longer than your height
- Most regions of the planet don't get proper sunlight for **6 months** out of the year
- Vitamin D3 supplementation during the winter
- Adults required about **8,000 IUs per day**



# Vitamin D and Vitamin K2

- Vitamin K2 is essential for proper utilization of vitamin D

## Sources of Vitamin K2

- Grass-fed organic animal products (eggs, butter, dairy)
- Fermented foods
- Certain cheeses (Brie, Gouda)



# Does Vitamin D actual help with hair growth?

**“Vitamin D3 may promote functional differentiation of Dermal papilla cells (DPCs) and be useful in preserving the hair follicle-inductive capacity for hair regeneration therapies.”**

Stem Cells Translational Medicine



# L-Carnitine for Hair Health

**“L-carnitine plays a key role in the intramitochondrial transport of fatty acids for beta-oxidation and thus serves important functions in energy metabolism. Here, we have tested the hypothesis that l-carnitine, a frequently employed dietary supplement, may also stimulate hair growth by increasing energy supply to the massively proliferating and energy-consuming anagen hair matrix.”**

**“Our findings suggest that l-carnitine stimulates human scalp hair growth by up regulation of proliferation and down regulation of apoptosis in follicular keratinocytes in vitro.**



# Sources of Carnitine

- Red Meat (highest source)
- Pork
- Seafood
- Chicken
- Dairy (raw dairy)
- Nuts
- Seeds
- Artichokes
- Asparagus
- Broccoli
- Brussels sprouts
- Collard green
- Garlic
- Mustard greens





# Plants for Hair Health

- Onion Juice
- Asiasari Radix
- Ginkgo Biloba
- Hibiscus Leaf
- Peppermint Oil
- Sophora Flavescens
- Green Tea
- Grape Seed Extract
- Turmeric



# Plants for Hair Health

## Onion Juice

“This study was designed to test the effectiveness of topical crude onion juice in the treatment of patchy alopecia areata...

- **Re-growth of terminal coarse hairs started after two weeks of treatment with crude onion juice.**
- **At four weeks, hair re-growth was seen in 73.9% of patients**
- **at six weeks, the hair re-growth was observed 86.9%**



# Plants for Hair Health

## **Asiasari Radix**

**“We examined the effects of 45 plant extracts that have been traditionally used for treating hair loss in oriental medicine in order to identify potential stimulants of hair growth.”**

**“Among the tested plant extracts, the extract of Asiasari radix showed the most potent hair growth stimulation...”**

Journal of Dermatological Science

# Plants for Hair Health

## Ginkgo Biloba

**“Ginkgo Biloba (GBE) showed a promoting effect on the hair regrowth. GBE had the inhibitory effects on blood platelet aggregation, thrombin activity and fibrinolysis.”**

**“These results suggested that GBE promotes the hair regrowth and could be used as a hair tonic.”**

Yakugaku Zasshi

Journal of the Pharmaceutical Society of Japan

# Plants for Hair Health

## Hibiscus Leaf Extract

“...extract of leaves and flowers of *Hibiscus rosa-sinensis* was evaluated for its potential on hair growth by in vivo and in vitro methods.”

**“From the study it is concluded that the leaf extract, when compared to flower extract, exhibits more potency on hair growth.”**

Journal of Ethnopharmacology

# Plants for Hair Health

## Peppermint Oil

**“These results suggest that Peppermint Oil induces a rapid anagen stage and could be used for a practical agent for hair growth without change of body weight gain and food efficiency.”**

Toxicology Research

# Plants for Hair Health

## **Sophora Flavescens**

**“In search of natural extracts for hair growth, we found that the extract of dried root of Sophora flavescens has outstanding hair growth promoting effect.”**

Zeitschrift für Naturforschung C  
Journal of Biosciences



# Plants for Hair Health

## Grape Seed Extract

“For the purpose of discovering natural products which possess hair growing activity, we examined about 1000 kinds of plant extracts concerning growth-promoting activity with respect to hair follicle cells. After an extensive search, we discovered that **proanthocyanidins extracted from grape seeds promote proliferation of hair follicle cells...**”

Acta Dermato-Venerologica

Journal of Clinical and Experimental Research

# Curcumin for All Skin Disorders!

“Turmeric (*Curcuma longa*), a commonly used spice throughout the world, has been shown to exhibit anti-inflammatory, antimicrobial, antioxidant, and anti-neoplastic properties. Growing evidence shows that an active component of turmeric, curcumin, may be used medically to treat a variety of dermatologic diseases.

“Skin conditions examined include acne, alopecia, atopic dermatitis, facial photoaging, oral lichen planus, pruritus, psoriasis, radiodermatitis, and vitiligo... Overall, there is early evidence that turmeric/curcumin products and supplements, both oral and topical, may provide therapeutic benefits for skin health.”

# Coconut Oil for Hair Health

- Rich in antioxidants
- Antiviral
- Antifungal
- Antibacterial
- Improves scalp health
- Fights infections and fungi
- Supports hair growth
- Adds volume and shine



# Coconut Oil Shampoo

- 1 cup liquid castile soap
  - 1/3 cup coconut milk
  - 1/3 cup coconut oil
  - 50-60 drops of essential oils and/or plant extracts
- 
- Heat the coconut milk and oil with very low heat
  - Mix with castile soap and shake well then add in essential oil such as lavender, wild orange, peppermint, lemongrass, rosemary, clary sage, and rosemary

# How Often Should I wash my Hair?

- Your hair needs it's natural oils
- Cleaning agents deplete these natural oils
- **Wash your hair once a week or at most every 3-4 days**



# Coconut Oil Conditioner

- 2/3 cup coconut oil
  - 1 tablespoon vitamin E oil
  - 1 tablespoon Jojoba oil
  - 10 drops of your favorite essential oil
- 
- Mix all ingredients in a bowl until it's smooth and creamy



# There's No “Magic Bullet” for Hair Loss

- Address Your Chronic Stressors
- Avoid Toxic Exposure (Vaccines)
- Eliminate All Medications
- Avoid Processed, Non-Organic Food
- Eliminate Toxic Hair and Skin Products
- Eat Nutrient Rich Food

# The 5 Keys to Health and Healing



Proper nerve supply



Regular Exercise



Proper Nutrition



Sufficient Rest



Prayer and Meditation



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