



hair science

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Hair grows 0.5 inches (1.23 cm) every month. For up to 7+ years.

0.5 inches x $12 \times 7 = 42 +$ inches (106 + cm) total length

"But why doesn't mine grow that long?"

Every individual hair strand has a hair follicle.

Think of the follicle as the "seed" or root, and the hair is the plant.

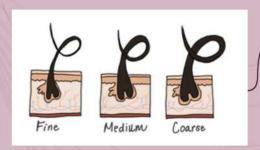
There is only one plant per root and vice versa.

Everything happens in the hair follicle.









The size of the hair follicle determines if your hair is fine (thin hair strands) or coarse (thick hair strands)

The density of hair follicles on your scalp (the number of "seeds" in your soil) determines if you have thin (low density) or thick (high density) hair.



low density follicles ("seeds")



high density follicles ("seeds")





Inside the hair follicle, there's a special type of cell called the STEM CELL.

Think of an old-fashioned photocopy machine.

The stem cell is like the document you are trying to print.

Dozens, hundreds, millions of times.





The cells keep stacking up, making the hair grow longer and longer.

But eventually, stem cells "expire" and the hair can't grow any longer.

There are products that can prolong the life of stem cells, we talk about them in Module 2!



Now you know the basics of hair science, let's bust some myths!

Myth: Hair oil gives you thicker hair.

Truth: The thickness of your hair is determined by the number of hair follicles. No oil, serum, shampoo etc can make new follicles.

Myth: Anyone can have hip-length hair or longer.

Truth: Hair grows for 2-7 years on average. It might naturally fall out in only 2 years, depending on genetics. So your max length is 0.5 inches (average hair growth) x (the amount of time it grows)

Myth: Products can compensate for genetics.

Truth: Products protect the hair and improve quality. But the full potential of your hair is largely determined by genetics.

Your genetics determine the results you're going to get from this challenge.

But you can still surprise yourself by how well your hair responds if you implement the right products and practices!

Let's find out!!



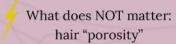


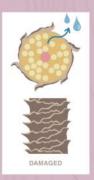
There are millions of products and hair types.

Here's how to pick the perfect rutine for YOU:

What DOES matter: hair damage

damaged





Hair "porosity" is not a scientific term.
In essence, "low porosity" is healthy
hair (absorbs LESS water).
"High porosity" is damaged hair (able
to absorb MORE water).







You can easily tell if your hair is damaged if you see split ends, short chunks of hair falling out after brushing, and the hair overall feels very rough and dry.

Damaged hair? Healthy hair?



ROUTINE 2
ROUTINE 1



ROUTINE 1

Wash day:

(Optional) Pre-wash deep conditioning or oil treatment

Shampoo (Every wash) Conditioner (Every wash) Mask (1x per week)

(After washing)
Scalp serum on damp scalp
Leave in oil or conditioner

(After drying)
1-2 drops of hair oil to protect
the hair

Non-wash days: (Optional) scalp serum 1-2 drops of hair oil to protect the hair





ROUTINE 2

Wash day:

(1-2x per week) Pre-wash deep conditioning or oil treatment

Shampoo (Every wash)
Bond repair treatment (1-2x per week)
Conditioner (Every wash)
Mask (1-2x per week)

(After washing)
Scalp serum on damp scalp
Leave in oil or conditioner

(After drying)
4-5 drops of hair oil to protect
the hair (damaged hair can
absorb product a bit better)

Non-wash days: (Optional) scalp serum 3-4 drops of hair oil to protect the hair

hair products

* The main difference between Routine 1 and Routine 2 is using bond repair treatments, and the types of products you're going to pick, so let's go over them!

** The ingredient lists are for you to pick from, you don't need to look for products that contain all these ingredients, but at least !!



Clarifying shampoo (1x per week):

Good ingredients:

- Sodium Lauryl Sulfate (don't be scared of sulfates)
- Apple Cider Vinegar or Citric Acid (breaks down buildup and restores pH)
- Activated Charcoal or Clay (draws out impurities and excess oils)

EXAMPLES: Acure Clarifying Shampoo, Neutrogena Anti-Residue Shampoo

Gentle shampoo (every other wash):

Good ingredients:

- · Caffeine (stimulates hair growth)
- · Rosemary, sage, mint, onion extract (antifungal, antiinflammatory)

EXAMPLES: CeraVe Hydrating Shampoo. L'Oreal Hyaluron Moisture Shampoo

Anti-dandruff shampoos (1x per week if scalp is oily, dry or itchy):

Nizoral

Neutrogena T/Sal Therapeutic Shampoo Briogeo Scalp Revival





Ingredients to look for: Shea Butter, Amodimethicone, Panthenol

Affordable product examples: L'Oréal EverPure Sulfate Free Bond Repair Conditioner OGX Renewing + Argan Oil of Morocco Conditioner Cantu Shea Butter Leave-In Conditioning Repair

HAIR MASK PICKS:

Main ingredients to look for: Keratin or Hydrolyzed Proteins (bond rebuilding) Natural oils (argan, coconut, jojoba)

Affordable product picks: SheaMoisture Raw Shea Butter Deep Treatment Masque Aussie 3 Minute Miracle Moist Deep Conditioner

BOND REPAIR PICKS:

Main ingredients to look for: Hydrolyzed Keratin or Peptides (repairing protein bonds in hair) Amino Acids (support hair structure) Ceramides (restore cuticle)

Affordable product picks: Olaplex No.3 Hair Perfector L'Oréal Paris Elvive Total Repair 5 Protein Recharge Leave-In Conditioner





Main ingredients to look for:

Humectants (glycerin, panthenol for moisture retention)
Silicones or natural emulsifiers (smooth frizz and protect)

Affordable product picks:

OGX Renewing Moroccan Argan Oil (lightweight and affordable)
Garnier Fructis Sleek & Shine Anti-Frizz Serum

SCALP SERUM PICKS:

Main ingredients to look for:

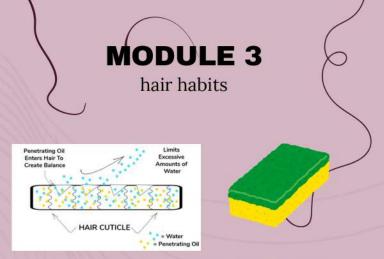
Niacinamide (improves scalp barrier and circulation)
Botanical extracts (rosemary, peppermint for stimulation)
Peptides that stimulate hair stem cells (Redensyl, Procapil, CAPIXYL,
BAICAPIL, AnaGain)

Affordable product picks:

The Ordinary Multi-Peptide Serum for Hair Density Maple Holistics Tea Tree Oil Scalp Treatment Puracy Natural Hair Scalp Serum

- * Routines can differ based on hair textures. Straight, wavy, curly, coily etc hair has different needs but there's too much to cover in one short PDF. If you have textured hair, it's best to get to know your hair, use trial and error, and follow your intuition.
- ** When choosing products for this hair challenge, pick whatever is in your budget.

 Long term, consistent use is better than buying something you can't afford and using it sporadically. If you can't find certain products in your budget, swap them for dupes!



Fact: Hair can absorb and release water, almost like a sponge.

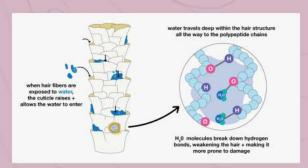
Fact: Wet hair is more fragile than dry hair.

DOES WATER DAMAGE HAIR?

We learned that the hair is like a straw, with roof tiles on the outside (the hair cuticle), and keratin bonds inside.

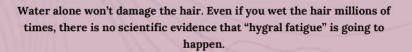
When the hair is wet, water temporarily breaks up some of these bonds. Think of bonds like buttons on a shirt, and water unbuttons some of them. The shirt is still intact, and once the water is gone, it buttons back up.





ZOOM in to see exactly what happens!





Just like buttoning and unbuttoning a shirt won't damage it. Unless you yank on it, tug, pull, etc.



In the same way, water itself doesn't damage hair, but what you do WHILE the hair is wet could damage it....

Let's explore the best practices for washing, drying and brushing your hair to minimize damage.



hair habits



Step 1: Use a scalp massager to help break up scalp oils (Do not oil the scalp during this step).

Step 2: Apply deep conditioning treatment (optional)

Step 3: Get hair fully wet, lather shampoo in your palms and gently massage it in. Repeat shampooing until the scalp is literally squeaking clean.

Step 4: Apply conditioner and gently detangle using a wet brush. Work your way from the ends up, stopping to gently detangle any knots with your fingers.

Step 5: Towel-dry the hair and apply your hair oil or leave in conditioner.

DRYING:

You can air-dry your hair if you want to, but blow drying the hair has a lot of benefits.

Wet hair is fragile, so air drying means you're exposing fragile hair strands to the elements for prolonged periods of time. If you have long hair, the hair is heavier + has more opportunity to snag on clothes, chairs etc.

Ideally, you want to use a heat protectant (it's included in most leave-in products) and a hair drier on a low heat setting, until your hair is 80-90% dry. Then style it as you like.

If using hot tools, always apply a generous amount of heat protectant, and keep it to once per week.





Rule of thumb: If you have straight or slightly wavy hair, brush it when dry. If you have very wavy, curly or coily hair, brush when wet.

The truth is, neither option is better or worse. Pick whichever one allows you to be more gentle and tug your hair less.

Either way, use a detangling product so the brush glides through your hair easier, preventing damage.

NOTE: Some hair damage is inevitable. If you have long hair, your mids and ends have been exposed to mechanical damage for years. Even the gentlest hair brushing will do some damage over time.



Don't let this bother you. Regularly dust the hair and get trims as needed. Stay patient and consistent, but have realistic expectations.



health habits

Fact: Nutrition is extremely important for hair.

Fact: Supplements are a hit-or-miss.

"How do I know what to eat and which supplements to take?"



Hair is made of keratin, which is protein.

Aim for 0.7 - 1 gram of protein per lbs of body weight (if you're on a weight loss journey, use your goal weight)

Animal protein sources have all the necessary amino acids for hair, so if you are vegan or vegetarian, never eat just one protein source.

Combine multiple legumes, tofu, etc to cover all your bases!

ZINC:

Helps tissue growth and repair, and necessary for proper thyroid function. Zinc is found in beef, lamb, pumpkin seeds etc.

BIOTIN:

Important for protein metabolism. Found in eggs, salmon, sweet potatoes etc.

VITAMIN C:

Antioxidant, protects the hair, essential for collagen production. Found in fresh fruit and veg.

IRON:

Brings oxygen to the follicles. Found in red meat, lentils, tofu, etc.



health habits

No diet is perfect. Even if you eat a balanced diet, you might have nutrient deficiencies from poor digestion, suboptimal food sources, etc.

That's where supplements come in.



Supplements are not magic pills.

If you're biotin deficient, a biotin supplement will make your hair grow back. But if you're NOT biotin deficient, a biotin supplement will do nothing.

This is where marketing failed us. "Hair gummies" are nothing more than a collection of nutrients essential for hair growth, but they don't contain any magic outside ingredient that will 10x your genetics.

SUPPLEMENTS:

- 1. Anything you're deficient in (If you're anemic, take iron. If you aren't, don't)
- Tyrosine (It has many benefits for supporting the body through stress and preventing stressinduced hair loss)
- Melatonin (powerful antioxidant for the hair, antiinflammatory and even shown to prolong hair growth)

^{*}Again, none of these are a magic pill. But try things out when you can afford to, and over the course of this challenge, curate the perfect products + routine for YOU!

progress photos





INSTRUCTIONS: Place your phone on a tripod, stand or ask someone to help you. Place the phone against a source of natural light (a window or open door with plenty of midday sun). Move all your hair to the front and take a photo facing the font. Then turn around and take a photo facing your back to the camera.

middle part too, to





MEXT STEP: Daily checklist!